

Morton Electronics: The Collapse Of High-Performance, Self-Managed Work Teams

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CASE A: MANDATE FROM MANAGEMENT

It was clear that top management was seriously pondering the long-term viability of Robert Mitchell's manufacturing group...at least as it was currently structured. Robert sat at his desk wondering what he could do to keep his job as manager and maintain control of the group. He concluded that he needed to do more than develop some kind of cost savings plan. He needed to think outside the box and come up with something more spectacular to impress top management. He would take the lemons and make lemonade.

Background

Electronic Materials (EM) was a business group within Morton Electronics' specialty chemical business segment. The firm's business environment was becoming more competitive and margins were shrinking. EM responded by implementing a variety of initiatives to contain costs and create value. These efforts included software system upgrades, bar coding, and Total Quality Management (TQM). Throughout the last several years restructuring had occurred across the company's worldwide operations. The underlying premise was to do more with less.

The climate and context of the Morton work place were traditional. In this autocratic environment most decision-making and problem-solving were exercised at the supervisory and/or managerial level. Numerous buffering layers (e.g., lead person, shift supervisor, production manager, and plant manager) served to filter effective information exchange between management and the shop floor. As a result, a demarcation existed between management and hourly employees for whom there were clearly defined job descriptions and job grades. Most promotions were based on seniority. Annual performance appraisals were compiled in a subjective manner and coincided with annual merit increases. Although TQM concepts had been implemented, a union mentality pervaded the operation. As a consequence TQM concepts had failed to revolutionize the management of business operations. Employee turnover remained relatively high, and human resource documentation of employee records was a time-consuming task. A confluence of eroding margins, global competition, and overcapacity were driving the need to reduce product cost.

In an effort to contain production expense, the manufacturing and logistics departments embarked on an initiative to consolidate from two contractors to one. During the analysis one firm emerged as the optimal choice because it had constructed a state-of-the-art plant in South Carolina. Morton Electronics entered into a 10-year single-source arrangement with this contractor.

This single-source arrangement became the impetus for relocating the EM Group from New England to South Carolina. The idea to house the manufacturing operation within the confines of this contractor's new site had been a recurrent consideration. During the life of the business relationship, the opportunity to establish such an arrangement had been proposed by leaders at both companies. Executive teams from each firm worked on a plan to consolidate manufacturing facilities in contiguous space within the South Carolina plant. By doing so, Morton could secure labor rates that were 15 percent lower than New England. Utility savings would approximate \$200,000 a year while nearly one million dollars could be achieved in annual freight savings. The joint proposal was approved by the respective companies.

The Plant Manager (Robert Mitchell)

Robert saw relocation as the perfect opportunity to make his lemonade. It would provide the vehicle to instill a management philosophy centered on the implementation of self-managed work teams (SMWT). Now the EM Group could improve quality and efficiencies by establishing cross-functional teams between the organizations. Inter-organizational synergies would lead to cost reduction. The plan took into account the relocation of people, processes and systems. It also considered employee severance and outplacement along with recruitment and training in South Carolina.

Viewing relocation as a strategically unique lever to secure his job as well as his division, Robert endorsed a cultural imperative: transform the traditional culture into a SMWT learning environment. Robert believed that the SMWT concept would be welcomed by the contractor organization and that it represented the next logical progression of the TQM process that had been in place at Morton Electronics for the past four years. Moreover, the South Carolina contractor had been engaged in the SMWT concept for two years, thereby increasing the likelihood of fruitful collaboration between their operations. Presumably, the thirty percent of employees who agreed to move to South Carolina would endorse the SMWT concept and forego the union mentality that had until now defined their work context. Robert and his HR manager, Jill Hopkins, concluded that they could hire the remaining seventy percent of the work force from a “Greenfield perspective,” thereby assuring cultural consonance. Both Robert and Jill were excited about the concept of SMWT’s and expected their enthusiasm would be emulated by colleagues.

After crafting design and implementation plans for the work team concept, Robert and Jill presented them to the executive team at the Group Office in California and later to Morton’s Vice President of Human Resources for approval at the corporate level. Robert wondered if these new concepts and their purported benefits were fully understood. Indeed, senior management seemed squeamish at the thought of a flat organization without supervision. The uneasiness was compounded by the consolidation of dozens of job descriptions into a single job description for all technicians. Other departures from the norm included a team-based compensation system instead of individual appraisal. Moreover, the new approach called for an entirely uniformed workforce rather than uniforms for hourly employees and business attire for management.

Even though Robert had received only tepid support from top management, he was even more concerned with resistance he was encountering from the employees. Robert and Jill knew that employee “buy-in” was a critical component of the change process. They realized that communications with this group were essential for clarifying the change rationale and winning organizational acceptance. Current employees had not been pleased with the news when Robert first delivered it. However, Robert then explained the reasons for the scheduled plant shutdown, how the shutdown would affect them, who would or would not be a “fit” for the new culture, and how management would provide support through the next year and one-half. Robert believed that active listening would induce cooperation and improve problem-solving related to both the shutdown of the New England plant and the start-up in South Carolina. He wondered what further steps to take as he moved forward with the implementation of SMWT’s. No operation within Morton Electronics had ever attempted to affect such a change. Robert realized that he was sailing into uncharted seas.

CASE B: TEAM AND RELOCATION PLANS

Robert and Jill received extensive training on the subject of SMWT’s. They were excited and committed to making it work in their new environment. Armed with the latest information, they developed a template for sequential steps in the EM Group.

Plan And Design

The hierarchal organizational structure with clearly defined job descriptions and responsibilities was transformed into a flat organizational structure with a single job description. This highly-flexible structure eliminated supervision and empowered the workforce by using the following model:

- Team Managers– Served as leaders for the operation and resources for the teams.
- Standing Committees – Combined management team and work team members in such areas as Safety Steering, Emergency Response, International Certification, and Team Compensation.
- Star Leaders – Represented each of the work teams. Came from the functional areas of safety, quality, operations, human resources, and maintenance. Supported process of integrating functional responsibilities into the teams.
- Administrative teams – Performed functions such as purchasing, inventory control, and information technology. Served as resources for the work teams.
- Work teams – Performed technical tasks in support of business objectives.
- Work cells – Represented each skill level throughout the operation.

Authority delegation to the self-managed work teams began during the planning phase. Prior to the relocation, team members anguished over the design of a compensation system to support the work team environment. One group, comprised of Jill and the team members planning to relocate to South Carolina, felt strongly about a skills-based compensation system. The other group, comprised of Robert and the supervisors, believed that a performance-based compensation system was best for the operation. Rather than stifle the teaming process from the onset, Robert and the supervisors supported the idea of a skills-based compensation system with the proviso that performance be evaluated at the end of every six-month period. The system was based on skills certification, e.g., each team was responsible for selecting, training, and certifying six team members over the next six-month period. Failure to achieve this objective would mean no semi-annual increase for the entire team.

The new work environment was expected to promote learning, participation, involvement, accountability, flexibility, and skills enhancement. By developing leadership abilities, teams could handle the responsibilities associated with multiple levels of management. The result would be a more valued and valuable employee as well as increased operational flexibility. An ancillary benefit might be the erosion of union activity since employees would now be assuming role prerogatives once the exclusive province of management.

The star leader concept was designed to develop the leadership abilities of team members. The star leaders organized work and conducted team meetings related to their respective function. They coordinated activities with management, off-shift star leaders, and on occasion with outside agencies. Some responsibilities assumed by the Operations Star Leader were as follows:

- Coordinate team activities to achieve optimum utilization of manpower, machinery, materials, and methods.
- Work with the planning specialist to prioritize daily delivery requirements.
- Lead daily team hand-off meetings to allocate resources to appropriate operational areas.
- Work with facilitators and team members to identify productivity improvements along with plans to monitor results.

South Carolina Recruitment And Training

Recruitment plans called for approximately 50 hires from the new location in South Carolina. Representatives from the State visited the facility to understand the start-up's needs and requirements. These representatives defined the skills required for the various positions, e.g., *administrative* – computer literacy, reading, writing, math; *interpersonal* - listening, teaming concepts, communications; *technical* – operating converting machinery and equipment, electric and hydraulic hoists, lift trucks, pallet scales. They also attended a presentation on employee involvement team activities from one of the supervisors. Based on the information gathered during the visit, the state of South Carolina developed a curriculum. This core program contained 84 hours of in-class training. The State also helped recruit and screen 1,800 applicants for 50 available positions.

The management team crafted boilerplate questions to assure awareness of desirable candidate profiles and assure consistency in the one-on-one interviews. The first phase of the interview process was 15-20 minutes and focused strictly on the candidate's experience and "fit" within a high-performance SMWT environment. The second

phase included team interviews of approximately 30 minutes and focused on administrative, technical, and interpersonal skills deemed necessary for the work environment. The pool was narrowed to 70 prospects. These 70 applicants completed the requisite 84 hours of classroom training on their own time with no guarantee of a job, e.g., only 50 of the 70 would be extended offers. The State sponsored training at the Technical College. The management team also conducted portions of the training as did members of the contractor management team. By dint of this teaching format, the professors at the technical college, the contractor organization, and Morton's management team could all provide feedback about the most suitable candidates. Most recruits already had some exposure to SMWT's.

Prior to closure of the old facility, plans had been put in place for employee outplacement. Now recruitment and training for the new facility had been completed. The stage was thus set for the relocation of manpower, materials, machinery, and methods to the new site.

Start-Up Issues And Obstacles

The old site in New England closed three months ahead of schedule. At the new plant in South Carolina, Robert emphasized the enhancement of technical skills (mechanical, information systems, administrative) and teaming skills (team-building, group problem-solving, decision-making) to increase the flexibility and responsiveness of the operation. The 18 relocated team members were evenly spread across three SMWT's where they served as technical trainers and team resources.

Approximately 70% of the plant employees were new hires from the local area. Extensive facilitation was required to develop their technical skills and ensure familiarity with processes, products, systems, and structures. In addition, there was the challenge of learning and applying such teaming concepts as group problem-solving and group decision-making in an environment simultaneously driven by high quality and low-cost. For its part the legacy workforce from New England had to adjust to Southern living as well as a new management concept. A few of these transplanted employees could not comfortably conform and soon returned to New England. Many employees who stayed harbored resistance to change.

Beyond the intractable attitudes of some members, teams faced a plethora of problems as they adjusted to a new site and acclimated to a new style. Coincident with the start-up in South Carolina, the plant was challenged to prepare international certification. This process required significant time, straining resources and impeding productivity. Moreover, the production-planning group failed to optimize the automated software-scheduling package, resulting in excessive manual scheduling and errors. This rework caused material shortages and ultimately customer back-orders. The problem was exacerbated by the need to utilize costly overnight shipments once the back-orders were filled.

The skill-based compensation system presented another conundrum. The system called for training and certification of six team members every six months. In an effort to achieve these objectives, a team's safety, quality, productivity, attendance and preventive maintenance often suffered. Moreover, the design of the cross-training and skills certification system meant that the internal customers at the group office in California (customer service, export department, accounting/finance, materials planning, information technology, and purchasing) might deal with a different South Carolina team member every six months. This flux fueled anxiety and frustration among internal customers and forced the South Carolina operation to defend its vision as a self-managed work environment. Within that defense was the tacit admission that SMWT's required everyone to work harder than they would in a more functionally designed organization where predictable routines allowed economies of scale.

A further challenge remained the delegation of authority and control to the teams. Management and team members had to accept and assume the following responsibilities:

- Teams were responsible for providing bilateral feedback to one another as well as management.
- Teams were responsible for adhering to conflict resolution guidelines established by each of the respective teams.

- Teams were responsible for group problem-solving and decision-making.
- Teams used team hand-off meetings at shift change to map out a strategy for the optimum utilization of resources during the next 8-12 hours.
- Team performance reviews were scheduled monthly in order to highlight success factors and draft any corrective actions.
- Plant-wide meetings (plant shutdown for the entire day) were viewed as state-of-the-union-addresses to communicate company and team performance, plant performance, and recognition of milestones.

While operations fell into disarray, demand for product remained high. Production requirements exceeded the plant's capacity. Despite overtime, the plant continued to fall behind schedule. In response, the management team imposed mandatory overtime in a unilateral manner reminiscent of the traditional environment. Still some team members often failed to appear on Saturday or Sunday due to personal conflicts. They opined that self-managed teams should provide a compensatory mechanism for member absences. Morale suffered and performance deteriorated.

Even as EM's domestic problems were escalating, Morton Electronics felt compelled to expand its international platform. It proposed a start-up in China that would monopolize two of the domestic operation's six primary converting machines. To accommodate this start-up, these two machines would be shipped to China. Two of the company's eight machines had already been relocated from the California operation to another start-up in Taiwan. The thought of collapsing to four machines became a nightmare. At first blush, the capacity constraints of four machines loomed as a greater challenge than either the plant relocation or the transition to teams.

Within this panoply of environmental pressure, specific team complexities started to surface. A South Carolina team member failed to acquire some technical skills necessary to become certified though he possessed the administrative and interpersonal skills to be a "fit" within the team. This lapse posed the issue of how to handle such a matter, e.g., what decisions fell within the purview of team process and what decisions should be the prerogative of management? All employees were hired on the condition that they become certified in each of the six skill levels within a six-year period and that there would be no place for those unable to achieve this feat.

Another team member's negligence led to numerous quality complaints. In the traditional environment, this individual would have been subjected to a disciplinary process that documented each occurrence along with attendant progressive actions, e.g., verbal warning, written warning, suspension, and termination. How should this matter be handled without stifling the team process and further impacting customers?

A third team member abused the sick leave policy, thereby jeopardizing the entire team's portion of the scheduled merit increase. Other employees were abusing overtime, a process that was intended to be utilized on an exception basis. Once again, questions arose as to whether the work teams or management should adjudicate.

Moreover, there was always the danger of losing employees to competitors who not only offered higher wages but also truly embraced teaming. First year results highlighted the extent of Robert's problems:

- Cycle count/inventory accuracy was 60-65%, based upon a goal of 100%.
- Order completion/fill rate was 80-85%, based upon a goal of 100%.
- Yields were as low as 90-92%, based upon a goal of 95-97%.
- Annual output per machine was 25,980,375 sq. ft., based upon a goal of 52,000,000 sq. ft.
- Manufactured product cost exceeded \$.032/sq. ft., based upon a goal of \$.016/sq. ft.

CASE C: CHANGES AND OUTCOMES

Robert was increasingly concerned about the plant and his job. In response to the start-up obstacles and problems, he and his team leaders approached employees who had elected to remain in New England. Some of these workers volunteered to support the South Carolina operation under a temporary-living arrangement. Major preventive maintenance requirements were outsourced and no longer absorbed by the teams. Most team meetings

and all plant-wide meetings were suspended until the plant became current with orders. Cycle time for machine set-ups/changeovers was reduced due to the implementation of “best-practices” learned from Japanese counterparts, e.g., pit-crew to attack the set-ups rather than rely on the individual converting technician who ran the equipment. Just-in-time concepts were implemented with raw material suppliers to free up warehouse space, reduce working capital, and promote efficiency throughout the operation.

Plant performance had been suffering under the skills-based compensation system. As a result, the compensation system was adjusted to a performance-based plan that aligned plant goals and objectives with the following functional areas: safety, quality, productivity, human resources, and preventive maintenance. The pay-for-performance system essentially placed the team’s semi-annual merit increase at risk. For example, a 20% weighting was placed on each functional area. If a team failed to satisfy its quality goal for the six-month review period, it would receive only 80% of its scheduled merit increase. In order to promote ownership in the compensation system process, two representatives from each team met every six months. They codified team compensation objectives for the next review period. The measurement criteria used in the performance-based compensation system provided a focus absent under the skills-based compensation system. From a management perspective, the performance-based system provided control without inhibiting team autonomy. It encouraged favorable behavior and allowed teams to accept responsibility and internalize objectives.

Team members implemented additional steps to enhance productivity and lower manufactured costs:

- Utilized shop floor bar code system.
- Automated off-line software scheduling system.
- Minimized the need for packaging materials and associated labor with the advent of a bulk-packaging format.
- Increased mill roll and slit roll lengths on products that offered economy of scale.
- Established schedules to keep equipment running through break-periods.

Due to such actions, the following results were obtained within five years:

Environmental, Health And Safety

- Reduced waste disposal costs by 20%.
- Established an innovative “sustainable green” packaging format that improved safety, quality, productivity, and cost, thereby offering a competitive advantage in the market.
- Reduced the OSHA incident rate from a peak of 9.57 to 2.28.
- Received corporate recognition for ergonomic improvements.
- Earned “best practice” designation for recycling programs by South Carolina’s Department of Health and Environmental Control.

Human Resources

- Reduced turnover and improved attendance.
- Developed employee leadership abilities.
- Enhanced employee skill sets through cross training and certification.
- Increased employee responsibility and accountability in group problem-solving and decision-making.

Quality

- Established a quality system that led to successful international certification within one year.
- Reduced customer complaints/returns by 50%.

Operations

- Increased flexibility and productivity of the operation by 140% and simultaneously reduced headcount by 14%.
- Relocated 33% of the key fixed assets (converting/slitting equipment) to Morton Electronics' Asian operations.
- Centralized domestic distribution in South Carolina.
- Increased cycle count accuracy from 65% to 99.7% and eliminated the need for annual physical inventory.
- Improved the customer fill rate/order completion from mid-80's% to 99%.
- Increased JIT/dock-to-dock shipments to 54% of the customer base.
- Compressed the order cycle from a monthly build-to-stock process to a daily build-to-order process.
- Increased yields from the low 90's% to 96%.

Cost Containment / Savings

- Reduced operating costs by 44%.
- Reduced packaging material costs by 33%.

CASE D: EPILOGUE

Robert, the plant manager, and Jill, the human resources manager, had been largely responsible for the design and implementation of the SMWT environment. After a seven-year run in South Carolina, they both returned to New England to pursue other business opportunities. However, their passion for shaping culture and transforming teams remained a part of their management temperament.

Robert Mitchell's successor subscribed to an autocratic management style and eschewed participative management. Pressures mounted to abandon self-managed teams and replace horizontal management with hierarchical structure. This reversion to compliance management stifled the teaming process and accelerated turnover. One year later, Morton Electronics was acquired. The new owners integrated the EM Group into their electronic materials division. The parent took immediate action to dismember EM's executive staff. Within two years the company shut down and sold the California site. By the end of the third year, the entire division was sold to a major competitor that promptly ceased all Massachusetts and South Carolina operations. As a result of this merging and purging, the new entity fortified its balance sheet. These actions proved timely as it would soon face the deepest recession the industry had ever experienced.

Robert had been trained in Operations Management and Manufacturing and thought like an engineer. He decided to expand his formal training in management and pursue an MBA at a university back in Massachusetts. The program's capstone course in Managing Change and Corporate Strategy caused him to reflect on the whole South Carolina experience. Had he made the right decision to use SMWT's? Had he implemented them properly? Did he do the right thing by recruiting additional help from New England when he was losing production capacity? What could he have done differently? How could he have managed the change better?

NOTES