

# Corning glass work case study

[Business](#)



There were no disagreements as to whether productivity problems existed in the plant; however, the cause of the declines fell into two factions. The Plant Manager, Andrew Machinist, attributed declines to the loss of most of his supervisory staff prior to declines. Alternatively, the M & E team discovered areas in the production process that could be improved upon. Analysis of Harrisburg internal management structure is headed by Machinist [Appendix: Figure 2]. Above him is staff at the corporate level who focus on overall manufacturing and production.

Machinist had advanced through the company learning the roles of the Plant Manager position he now holds.

The other leadership entity at the plant was Davidson and his M & E division. This team was stationed in the plant by corporate to evaluate the decline in productivity and identify potential process improvement opportunities. Throughout the M & E team's occupation at Harrisburg, there have been power struggles between Machinist and Davidson. The manufacturing process of the Z-Glass Project was highly complex and sophisticated.

There were many levels in the production process including melting, molding, and finishing. All of the steps were performed independently of each other.

Before M & E's direction, after a part of the process was completed, there was little testing of the reduce to determine whether the process was performed correctly. When testing was able to be conducted, it was done so when products from different conveyor belts were merged together. This made it difficult to determine in which production stage defects occurred.

According to Machinist the facility decline in performance levels in 1977 were caused by production management's the lack of experience.

Many AT ten plants top managers Ana let ten plant Ana It " NAS taken a Tee months Tort ten new people to get up to speed (HarvardBusiness College, 1981). " Machinist believes he yield drop was a one-time episode and affirms that the plant has already made significant progress improving production. Data depicting production levels in the sass supports Machinist's postulate. Overall yield between 1973 and 1977 increased steadily from 30% to 65%.

The plant did not experience a significant decline until the second quarter of 1977.

At that time, the fugue dropped dramatically to 40% [Appendix: Figure 1]. Although sales were considerably higher than in the previous year, \$40. Mm and \$26. Mm respectively, the plant's profit was lower [Appendix: Figure 3]. The facility overall yield reached its lowest rate in the iris quarter of 1978 but increased almost 20% in the following months thereafter [Appendix: Figure 4]. Approximately six months after Harrisburg productivity began to decline, the M & E team was called on by corporate.

Current Operations Management Strategy Similar to most organizations, Corning Glass Works' corporate strategy is not explicitly defined but rather implied; it is a corporation which builds market share through product innovation and capitalization of existing competencies Corning values transformation and innovation by investing in research and development, production, and operations. Moreover, Scorings reemphasizes of technical

competence demonstrates its corporate identity and commitment to process and productivity excellence.

Corning has a diverse product line that includes glass, ceramics, tableware, cookware, and auto parts. In order to offer such a diverse portfolio of products, Corning constantly reevaluates its production capabilities and deploys resources to improve productivity. The manufacturing and engineering team was developed internally and tasked with the responsibility of process change and improvement.

The M & E team plays an integral part in Corning's ability to garner new market share and leverage excellent opportunities.

For instance, the M & E team participated in numerous projects throughout Corning, but its core responsibilities include internal consulting, product quality assurance, and the smoothing the transition of products from R&D to production. The M & E team's function is to solve problems by implementing long term solutions that facilitate process and quality improvement. Despite M & E's capabilities and overall intent, the formulation of this team was not well received initially by other divisions within the Corning organization.

The M & E team faces tremendous opposition from Harrisburg Plant Manager. The manager is reluctant to accept change and seems comfortable with the status quo of Corning's existing operations. This is illustrated by the manager's diminishing the value of process documentation. Eric Davidson wants to streamline operations and improve inefficiencies by documenting the organization's processes. The manager poses resistance to the Division's

attempt by communicating that the M & E team's presence is not needed and they are causing more harm than benefit.

Machinist further invalidates Davidson and the M & E team's contributions by asserting that the best solution is for the team to leave the plant production department alone. In order to execute a strategy there must be cohesion and synergy between interdependent departments. If such does not exist, individual agendas and silos will surface ultimately preventing the organization from achieving its objectives. Machinist and Division's conflict supports this claim. The M & E team's contribution arguably determines Scorings ability to achieve their objectives.

Management needs to stress the importance of process documentation and change in order to improve production efficiencies and yield output.

Recommended Strategy Machinist believes Harrisburg production problem is fundamentally a " people problem". Correspondingly, Machinist views the M & E program at Harrisburg as needless and fears it can potentially hinder the progress already occurring. Consequently, it is recommended that Eric Davidson discontinues the current M & E program at the plant and compromises with the plant manager in order to create an alternative program.

The financial data suggests that Harrisburg decline in yield was sudden, the problem existed for a relatively short period of time, and the plant as made major improvements to correct its output levels exclusive of the direction AT ten M & team Appendix: Hughes 1 4 Although ten Taluses support Machinist's argument, it would be egotistical for him to assume the plant is

capable of quickly reaching projected yield levels without oversight from corporate.

Machinist's reluctance to cooperate with the M & E team's agenda partly may be rooted in personal sentiment; perhaps he feels insulted that corporate does not have faith in his ability to correct the situation himself or that the team's presence at the facility is a violation of his territory.

The plant's recent improvement in productivity may be a direct result of the M & E team's interest in internal processes especially if Machinist pushed for such improvements in order to dissuade further interference from corporate.

Because there is no way to be certain, the figures primarily have been used to guide the recommended operations management strategy, not the equivocal origins of Machinist's resistance. There is tremendous risk continuing the M & E division's current program in the Harrisburg plant. A process change designed by the M & E group can undermine the progress already taking place in the plant. This can happen for either of two reasons:  
1 . ) Machinist may know better than M & E how to manage his plant.

Although the team's methods are highly analytical and quantitative, improvements based on its examinations may not directly translate to increased productivity in practice, or 2. ) Harrisburg management and staff may resent M & Ex.'s involvement and resist change which can jeopardize the reengineering efforts and lead to further decreased productivity. In the latter situation, management and general plant workers' animosity could persist and Corning Glass may risk losing some of its top employees, even Machinist.

Although it would be arrogant to for Davidson to believe he knows the how to run the Harrisburg facility better than Machinist, it would be stubborn of Machinist to believe he can continue managing the plant without the involvement of corporate, especially when productivity is below par.

Therefore, Davidson and Machinist should meet with the Vice President of M & E, David Lobbies, to draft a strategy that will satisfy both sides and guarantee Machinist is supportive of increasing efficiency in production processes.

Corporate will discontinue the fulfillment supervision of Harrisburg by M & E am members, but Davidson will regularly visit the plant to concert with Machinist on production improvement. The responsibility of improving yield will be transferred primarily to Machinist assuming he agrees to take an analytical approach to process change rather than only anticipating that Harrisburg new management will become more proficient over time.

The Plant Manager must understand the need for process documentation and allow the installation of instrumentation to collect data on critical operating variables including glass temperature, machine speeds, and timing (Harvard Business College, 1981). Machinist will be required to make efficiency improvements adopting information from the instruments. Production processes in the molding and melting departments appear to constitute the majority of the facility defects during various processes, including overall downtime, trim settings, glass adhesion, and layer separation [Exhibit 3].

Machinist must focus his attention on these areas and regularly report to the M & E group with yield changes, opportunities for improvement, and other various production-related issues. In tandem, Davidson will review the plant's processes and provide guidance to Machinist. During the meeting between Machinist, Davidson, and Lobbies, the three must agree on ten length AT tell Mac lavas will De allowed to Improve production to historic levels. Although the M & E team will have presence at Harrisburg, the primary responsibility for improving efficiency is Machinist's.

Corporate needs to set specific yield goals for him.

If the plant manager does not reach the expected yield goals within the time allowed, then the M & E team should reinstate its initial program and take full control of process documentation and change. Machinist needs to be concerned with process analysis, the documentation and detailed understanding of how work is performed and how it can be redesigned (Kaisers, Raritan, & Malaria, 2010) [Appendix - Figure 6]. The six-step process will help the plant manager to take an analytical approach to process change. 1 . Identify opportunities - Machinist should seek to improve overall productivity but pay particular attention to molding and melting processes, 2.

) Define the scope - he must define the boundaries of an inefficiency to a specific procedure in the production process, an entire production level, or the overall process, 3. Document the process - he must record data with measurement tools M & E installed, as well as, other qualitative data, 4. ) Evaluate performance - by reviewing the documentation and metrics,



Machinist can identify the specific inefficiencies, 5. Redesign the process - analysis of the process and its performance on the selected metrics should reveal disconnects between actual and desired performance. Machinist must be analytical and creative in order to identify ways to reduce those gaps, and 6.

) Implement changes - Machinist must be proactive in process change by implementing specific reoccurred changes to improve productivity (Kaisers, Raritan, & Malaria, 2010). Process analysis must be reported regularly to Davidson to demonstrate Machinist's commitment to organizational goals and ability to resolve yield declines internally.

Machinist should create flowcharts at each production stage to trace the flow of information, equipment, materials, and procedures through each process [Appendix: Figure 7]. This documentation will help him visualize the production processes and may allow him to identify the lack of an established process (Kaisers, Raritan, & Malaria, 2010). He should create new flowcharts for the redesigned processes and provide corporate with before-and-after scenarios. It is expected that the recommended strategy will provide Machinist with the space and sovereignty his desires while securing corporate involvement.

The natural skill advancement of Harrisburg managers should help increase production yield near historic levels; the improvements in production efficiency driven by process documentation should increase production yield beyond that of the previous year's highest level. When developing a strategy aimed to improve operations, it is imperative that the potential impact on all

stakeholders is examined. Because the problem at Harrisburg involved internal processes rather than its relationship to the external environment, the impact on shareholders and employees was considered primarily.

M & Ex.'s original strategy of fulfillment presence in the plant was imposing to plant employees, and process change directed by the group was viewed negatively by staff. Bestowing Machinist the primary responsibility of solving the yield crisis will most likely be perceived better by staff, because the direction will be produced from within the facility, not from an unfamiliar corporate entity.

The expected outcome is that production yield will improve more under Machinist's command than it would under ten management AT ten M & team.

An increase in production will lead to an increase in profits ultimately benefiting Corning's shareholders. This cost savings can then be transferred to the benefit of the consumer purchasing Corning Glass products. Benefits from increased production efficiency in regard to the reduction of product defects can benefit the firm's consumers and society overall. This could lead to less finished product defects, more product consistency, and less production waste. Alternatives

Several alternatives were considered before concluding the recommended strategy.

In ten TLS alternative scenario, Mac lavas Ana Davidson meet Walt Eldon to work things out. Machinist claims he is on board with the program. The

problem is alleviated somewhat at first but still exists. Machinist and management still resist and resent M's involvement in their plant, and current progress is sabotaged. The purpose of negotiation is to resolve situations in which what someone wants conflicts with what someone else wants.

In order for Machinist and Davidson to attempt a negotiation, a meeting with Lobbies is how they need to start.

The aim of win-win negotiation is to find a solution that is acceptable to both parties, and leaves all involved feeling that they have won in some way. The disadvantage in this situation is there is potential for one person (Machinist) to play hardball. This disadvantages the other party and will undoubtedly lead to a reprisal later. Organizations constantly encounter forces driving them towards change.

Fisher and I-Cry (1973) note that a common type of tactic is psychological warfare.

When the party uses a stressful environment as a stresses leverage, the principled party should identify the aerobic element and suggest a more comfortable or fair change. This alternative was not chosen because Machinist may still resist and pollute the workplace by knowingly sabotaging or subconsciously being insubordinate, and enabling a hostile work environment to manifest. The second alternative is for Machinist and Davidson to meet with Lobbies to work things out.

Lobbies threatens Machinist to be supportive of M & Ex.'s involvement in the plant at the risk of his position. Machinist can even transfer these threats directly to plant management and staff.

An advantage of this is that leadership can be informally agreed upon in the team. At times, an appointed leader (Davidson) may have less influence than an informal leader (Machinist). For example, if an informal leader has greater expertise than a formal team leader, team members may look to the informal leader for guidance requiring specific skills or knowledge.

Alternatively, this option is disadvantageous in that bureaucratic controls stem from lines of authority and this authority comes with one's position in the organizational hierarchy. The higher up in the chain of command, the more an individual will have authority to dictate policies and reoccur. Fisher and I-Cry (1973) note that threats are a way to apply psychological pressure.

Lebanon's threats to Machinist would have produced an unsanitary working environment. Fisher and Uri's first principle is to separate the people from the issues.

People tend to become personally involved with the issues and with their sides' position. They will tend to take responses to those issues and positions as personal attacks. Separating people from issues allows the parties to address the issues without damaging their relationship. Machinist may still feel he has been reasonably attacked; this alternative solution was not chosen due the possibility of increased threats that may have fostered a hostile environment.

<https://assignbuster.com/corning-glass-work-case-study/>

Conclusion In late 1977 yields on the Z-Glass processes at the Corning Harrisburg plant had declined sharply.

Initial efforts to reverse the trend were unsuccessful. On two polarize sides, Davidson and Machinist were unable to come to a compromising medium to improve yields. Machinist felt strongly that the root cause of the yield decline was due to the departure of the plant's seasoned experts whereas Davidson felt that the need to obtain long-term improvements by defining and documenting he processes was impacted with an inadequate data base and a process more complex than once imagined. Harrisburg resistance to process documentation is critical.

Division's approach is based on the premise of receivership of solutions relative to the plant's organization. Machinist had incorporated a supervisor backup training program to help rebuild yield levels. After a 3 month review Davidson noted that there was an improvement in yield performance without significant input from M & E team involvement. Although his training was soundly based on the concepts of benefiting and documentation, it was mystifying for him to note the improvement did not incorporate this methodology.

Machinist knows the facility programs and has a keen, intuitive insight of production issues; he is most likely accurate in his diagnosis of the plant's system failures.

Positional bargainers usually attack either by asserting their position, or by attacking the other side's ideas. This is characterized by Machinist. There should have been a more strategic alliance between both parties initially.

<https://assignbuster.com/corning-glass-work-case-study/>

Instead, the M & E team moved into the facility in full force within several months of yield declines and upset internal management and staff.

The strategy recommended for Harrisburg is to discontinue the current M & E program and establish a different leadership structure for the Z-Glass project. The exhibit figures support Machinist's standpoints.

He appears to have a comprehensive understanding of Harrisburg internal affairs. However, he does not value process documentation and change the M & E team advocates. The recommended strategy involves transferring the responsibility production improvement to Machinist in exchange for his permission allowing the installation of measurement instruments in reduction.

Instead of M & Ex.'s current fulfillment supervision, Machinist will be required to report to Davidson regularly to evidence improvements in production efficiency driven analytics and documentation. The decision-making process is often a group process.

Machinist must apply principles of democratic decision making since tense Involved In ten process wall Tell an Interest In ten results AT ten process. In such a case, the leader becomes more of a coach, knowing the mission, objectives, and the process, but involving those team players who must help in actually achieving the goal.

Machinist must cooperate with corporate in order to achieve productivity goals in the plant. This strategy greatly reduces the resources required for the project which are, most notably, the labor cost of the M & E team. The

majority of their work will be transferred to Machinist; he will be more motivated if he has control over his work and own professional destiny.

The cost of measuring tools and collecting data will be the same in the recommended strategy as it was in the initial program. This recommendation is the best option above the other alternatives.