

The Effects of the GM/UAW Saturn Partnership on Quality Performance: A Brief Overview of Preliminary Findings

Saul Rubinstein, Rutgers University
Thomas Kochan, Sloan School of Management, MIT

This project analyzes the effects of the co-management arrangements built into the first line of supervision (module advisors) at the Saturn Corporation on first time quality (FTQ) performance and improvements in first time quality. This is a very unique organizational arrangement wherein represented (i.e., unionized) and non-represented (i.e., managers) partners share responsibilities for co-managing production work teams. The purpose of this portion of our work is to test whether this co-management arrangement contributes to the performance of these work units and thereby adds value to Saturn as a whole. We focus on first time quality as the performance measure.

In order to analyze the value-added to quality performance by Saturn's system of co-management, represented and non-represented operations department-level middle managers were studied. A detailed analysis of the supervisory system at the department or module level across Saturn's three plants (called business units) allowed us to test whether the variations in the co-management system and quality performance are systematically related. We analyzed the relationship between the behavior patterns and supervisory methods of both union and non-union middle managers, attributes of their individual union-management partnerships, differences in the patterns of communication and coordination of each group, and performance outcomes, in particular first-time-quality improvement. We also studied time use and the dynamics of partnerships, including the balancing of social and economic tasks, as well as the division of labor between represented and non-represented management.

Specifically, we examined:

- Whether represented managers were indeed managing people and technical aspects of the production process (called resources);
- If represented managers were managing, did they manage their time, priorities, and communications differently than did their non-represented partners.
- Whether the behaviors of represented managers added value to quality performance.
- Whether the nature of the individual represented and non-represented manager partnerships at the department level had an impact on quality performance.

These questions are important because some industry observers believe that while over half of the middle management positions at Saturn were indeed being filled by union members, Saturn had simply bought labor peace at a high price. They contended that only the non-represented managers were truly functioning in that role while the union members were either free riders or acting as grievance committeemen focusing exclusively on people issues.

Another explanation for Saturn's remarkable quality performance is that a new 'effort bargain' was struck between GM and the UAW (i.e. workers simply work harder). We test our alternative hypothesis that this system of partnership and co-management systematically adds value by increasing the rate of first-time-quality improvement. These data allow us to test which, if any, of the specific attributes of the partnership (i.e. task balancing, represented and non-represented relationships, communication density, problem solving, etc.) predict quality performance.

Data were collected via surveys from 150 managers across the three business units. Multiple regression techniques were used to analyze these data, and to test for the relationship of these specific aspects of the co-management system to first-time-quality improvement. Managers provided data on how they used their time during the day, how they thought they should allocate their time, and on their communications with others in the Saturn operations. The communications data were collected over a two week time period. The differences in the level and nature of communications were then analyzed to see if they affected quality performance outcomes.

Two measures of quality serve as the performance outcomes to assess the impact of the Saturn partnership arrangements: 1) first time quality; and 2) quality improvement.

PRELIMINARY RESULTS

Three groups of variables were identified which have a significant impact on quality performance. These are:

- The amount and type of communications and coordination activity;
- The balance of time spent between managing people and managing production;
- The alignment of priorities and work tasks between the union and non-represented partners.

Communications and Quality Performance

COMMUNICATIONS FREQUENCY AND CENTRALITY. Based on the level of improvement in first-time-quality, we divided Saturn's production departments into two groups - High First Time Quality Improvement and Low First Time Quality Improvement. The grouping of departments with the highest level of quality improvement also had significantly higher levels of communications by the represented module advisor. This was true for communications centrality

(the overall level of daily communications), and for group centrality (communications with other represented module advisors within each plant). Most striking are the differences in communications frequency, specifically on the subject of quality. The represented module advisors in the high quality improvement departments had almost two and half times the number of daily communications on quality than did their counterparts in the departments with low levels of quality improvement. The data showed no significant difference in overall communications centrality, group communications centrality, or quality communications between the non-represented module advisors in the high quality improvement group compared with those in the low quality improvement group.

We also divided the departments into two groups based on their 1993 level of first time quality. The level of communication and coordination also appears to be related to first time quality performance. The overall site-wide communications centrality of the represented module advisors is significantly higher in the High FTQ group. Similarly, the density of communications among represented module advisors within each plant was significantly higher in the High FTQ group. Communications on quality was significantly higher for both represented and non-represented module advisors in the High FTQ group, although the represented level of daily quality communications was greater than the non-represented level.

Time Use Balance and Quality Performance

TIME USE. In analyzing the difference between represented and non-represented module advisors use of time on a variety of tasks, two findings are of particular importance. First, represented module advisors are indeed engaged in supervisory activity. They spend an average of almost 29% of each day managing production. This includes "firefighting, troubleshooting, dealing with production bottlenecks, dealing with equipment failures and downtime, expediting, direction to teams on production schedule, record keeping, and giving work assignments". Second, represented and non-represented module advisors differ significantly in their use of time. Represented module advisors spend significantly more time managing people problems - "attendance, manpower, counseling, listening to team members, resolving personnel conflicts, morale building, representing peoples' needs". Represented module advisors also spend more time on training and administration - "review and analysis of performance data, helping teams track performance, hiring, and team leader development". Non-represented module advisors spend significantly more time on production, but also spend almost 26% of their time managing people problems.

BALANCE. The balance between time spent on production management and time spent managing people problems is critical in evaluating the Saturn partnership arrangement. If represented module advisors spent virtually all of their time on people issues then it could be argued that they are simply filling the traditional role of grievance committeemen in spite of the difference in title. Similarly, if non-represented module advisors spent the vast majority of their time managing production they would essentially be operating as supervisors in the traditional sense.

The partnership arrangement at the department level is a balance both between represented and non-represented managers and between production and people for each individual module advisor, and individual balance is significant. For the non-represented module advisor, excessive time managing production at the expense of managing people problems has a negative impact on quality improvement. Similarly for the represented module advisor, excessive time on people at the expense of managing production has a significant negative impact on the level of first time quality. For quality performance the data suggest the most effective balance between time on production and time on people may be close to 1:1 for both represented and non-represented managers.

Alignment and Quality Improvement

The third set of variables mentioned above which has a significant effect on quality performance concerns the alignment of attitudes and behaviors between the represented and non-represented partners in each department/module. Where there is agreement between the partners on priorities, responsibilities, work tasks, and balance of time use between production and people we see the highest level of quality performance. Alignment is measured by taking the standard deviations of the partners' responses for each module. The lower the standard deviation, the greater the alignment between the partners.

The group of departments with the highest level of quality improvement had significantly higher alignment in the balance the partners exhibited between time spent on people and time on production. Similarly, quality improvement was greatest in those departments where partners were in agreement on their level of responsibility for team performance. Also significant for quality improvement was agreement by the partners that they have the same priorities in their work. While not statistically significant, the same pattern of results appears for agreement by the partners on their accountability for team performance, and on whether they believe they have the same work tasks.

Summary

The results summarized here are still preliminary. Further analysis of these data are now underway to test for the combined effects of different patterns of communications, balance, and alignment on quality performance. It is clear, however, that the co-management system is making an important contribution to Saturn's overall quality.