

## A Plan for Operationalizing Quality at General Motors

By William W. Scherkenbach

William Scherkenbach is internationally recognized as one of the world's foremost authorities on the subject of quality and its implementation. Theory without action is useless. Action without theory is costly. Bill has the rare combination of both state-of-the-art theory and the experience of applying it in the real world.

He was in the very privileged position of learning from and working with Dr. W. Edwards Deming in the last 25 years of his life. He was with him on over 1000 meetings, including at least 50 four-day seminars, with leaders of industry and government all over the world.

*"He was my student, and there's none better in the world... It takes a little ingredient called profound knowledge, and he's got it."*

*W. Edwards Deming*

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TO: R. C. Stempel

Here is the paper I will discuss with you on Tuesday morning. It stems from our previous conversations on quality. These are my ideas and opinions. You obviously need more input than just mine, so I am forming a team to recommend to you a vision and a process to implement the vision.

I have spoken to JT, Mike, and Cliff for their ideas and I will speak to Lloyd on Monday morning for his ideas. The team consists of a cross section of staff and operating people that should push the envelope. They are: Ed Czapor, Arv Mueller, Jim Fitzpatrick, Gary Cowger, Cardy Davis, Dan Saltee, and me.

The team must be accepted by the operations, as well as the leadership, as well as the international community if we are to have a good executable vision for quality. Who do you think should be on the team? The buy-in from operations that I am looking for is in the upstream design and engineering communities, not the downstream manufacturing community.

B:11  
W. W. Scherkenbach

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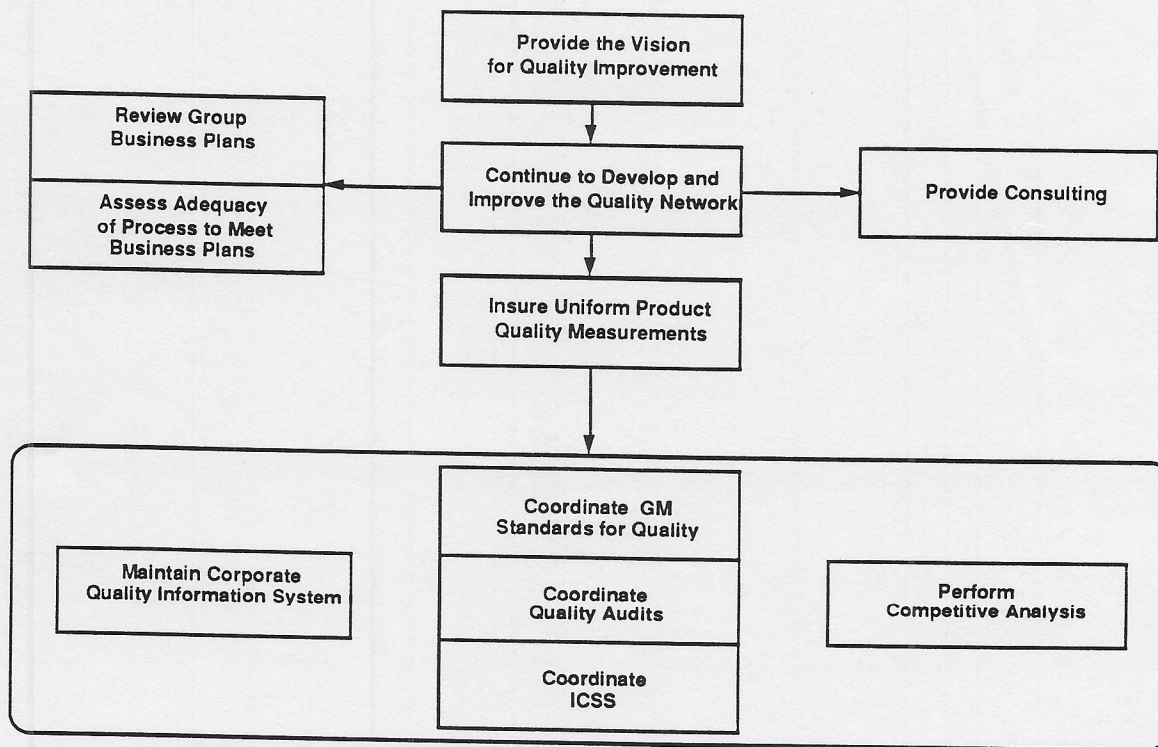
## A Plan for Operationalizing Quality at General Motors

The Corporate Quality and Reliability Organization Effectiveness Study Group recommended a number of functions that the Corporate Quality and Reliability organization should perform. What follows is a plan to operationalize their recommendations. Before the plan, however, is an overview and my editorial view of the functions.

### Overview of Functions

No recommendation stands alone. Each one affects other recommendations. The following flow diagram depicts how I see the interdependencies:

The Functions of Corporate Quality and Reliability



Before I talk about the plan to operationalize quality, I need to explain how I interpret the flow diagram. First the *Vision*. I think that the vision for quality improvement for General Motors should be our Beliefs and Values. The value of **Customer Satisfaction** obviously contains all of the essentials of anyone's definition of quality. We want our customers to take joy in owning and using our products and services as well as not complain about them. Our customers include: retail customers, employees, and shareholders. **People** are the source of our strength. They are a long-term asset, not an expense. Each individual must feel that he or she is important. Our people also need to feel a part of a team. **Teamwork** is built on



trust and cooperation. We are an interdependent network of customers and suppliers whose output should be far greater than the sum of individual efforts. In order to prosper in this new economic age, there must be **Continual Improvement** in everything that we do. This ranges from quantum or breakthrough levels of improvement to Kaizen or incremental levels of improvement. Improvement also ranges from the reduction of waste to the addition of value.

Our *Quality Network* is intended to be General Motors' one customer satisfaction process. This does not mean that everything that is done in General Motors will be lock-step. Our Beliefs and Values stress the balance between individual initiative and team participation. To date, we have identified 37 Action Strategies that will provide their greatest benefit to General Motors only if we all do them the same way. Absolute consistency in these 37 will not stifle the creativity and local control of our people. There are thousands of other processes and tools that we are free to use as we see fit in the every day conduct of our business.

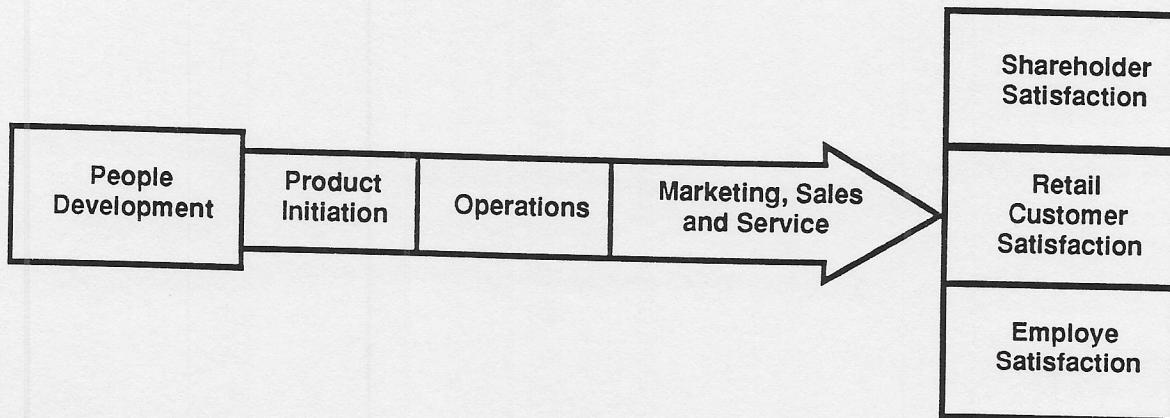
The Quality Network is developing a growing number of people who are resources for continual improvement. They should be able to *provide consulting* services to all of General Motors, our supply base, and our dealer network. The people who provide these consulting services should come from every part of General Motors: every function, every type of employee (hourly or salaried), every location. These people should be able to coach and counsel as well as judge.

The Quality Network should also be the source of people to *Review Group Business Plans* for their steps to lead the world in Quality. Here again there must be balance between, Quality, Cost, Fast, and Great vehicles all from the perspectives of our customers. I think that the team of people who review the Business Plans should be senior corporate level employees that have backgrounds from all functional areas in the business. This is the only way that they will also be able to *Assess the Adequacy of the Process to Meet the Business Plan*. Process includes the people, materials, methods, equipment, and environment necessary to carry out the plan. In addition to these Business Plan review functions, I see a strong need for the Corporate Quality Organization to review and assist every product program, as well as systems and components, in Phase 0. Once out of Phase 0, it is difficult and expensive to try to affect the quality of the vehicle. There of course should be an overall balance of effort in all 4 phases with corporate leadership focus on Phase 0.

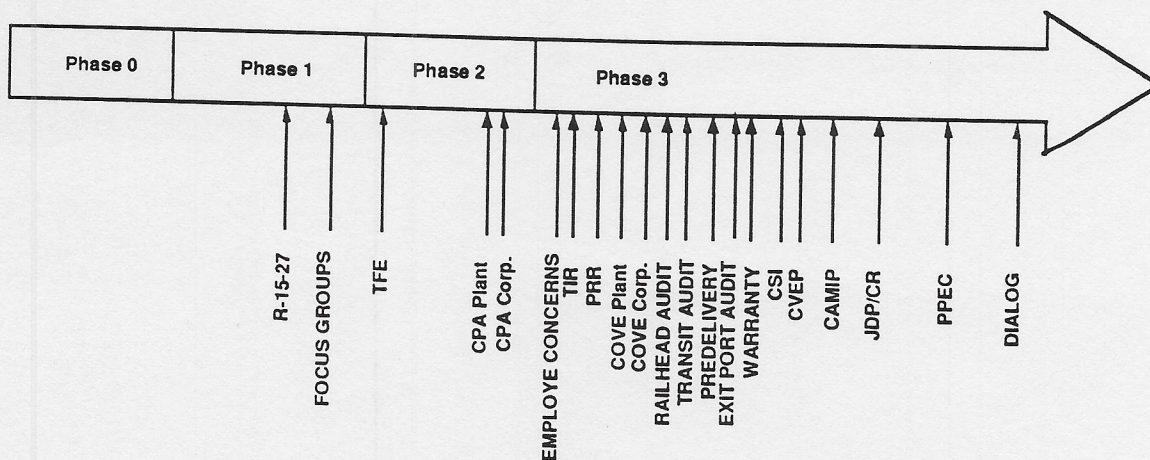
Our Beliefs and Values imply specific measurements. There should be measures of Customer Satisfaction, People, Teamwork, and Continual Improvement. The measures should be interdependent because the values are interdependent. The Performance Measurement and Feedback System focuses on a set of 58 measures that should help guide the actions of our people. We must *Insure Uniform Product Quality Measurements* as a part of the set of 58.



# Performance Measurement and Feedback System Mo



The five remaining functions of the Corporate Quality and Reliability organization are a subset of *Insure Uniform Product Quality Measurements*. There must be a *Corporate Quality Information System* although it should be a part of the overall PMFS which includes internal as well as external customers. The Q&R organization must *Coordinate Standards for Quality*, including CAMIP, Dialog, Warranty, R-15-27, and COVE/CPA. The existing measures are not all inclusive. There should be more emphasis on Phase 0 and Phase 1 measures and a reduction of Phase 3 measures to more balance our efforts to improve quality. Everything that we have learned at NUMMI and through DFM and Synchronous says that quality is best affected in the design phase. And yet, that is not where our current emphasis is.



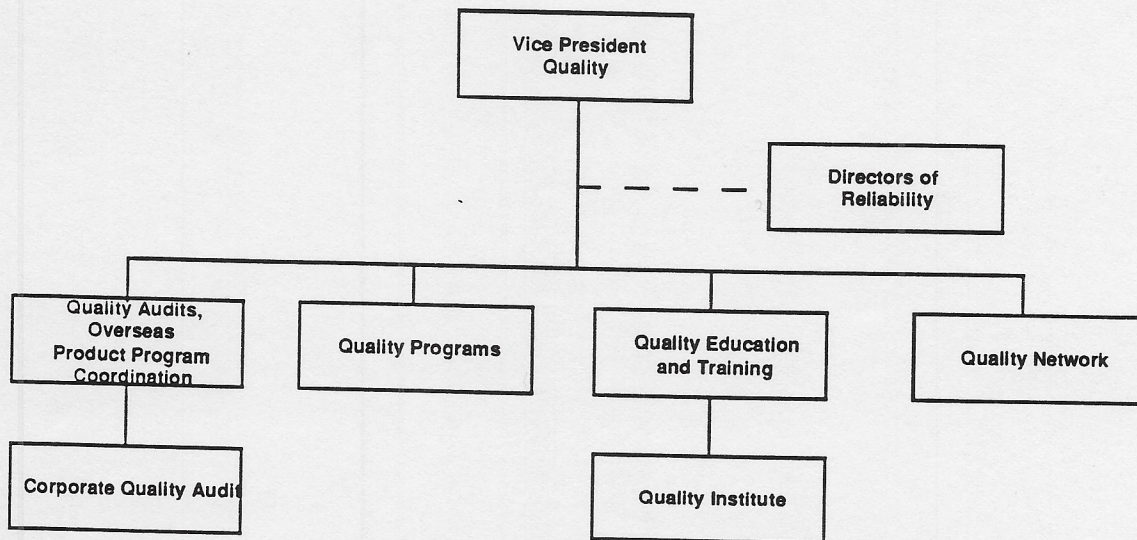
There might be other *Audits* of General Motors' products and processes as well as *Competitive Analysis* of other's products and processes. The audits however, must be structured to help the organization to improve both their processes as well as their view of their customers.



## Plan for Change

The Change Methodology provides the framework for this Plan. There are key questions in each of the five steps. Right now I will only give my opinion on what to do in Step 1-- Identify the Opportunity. But for this to work, we need more people to answer the questions asked in the other steps of the Change Methodology. I recommend that a team consisting of Gary Cowger, Ed Czapor, Cardy Davis, Jim Fitzpatrick, Arv Mueller, Daniel Sallee, and I meet to finalize the specifics for the plan to agree upon and implement these improvements of the Corporate Quality organization. Dr. Wendy Coles could facilitate the group and provide an OD perspective on the Vision and the process to get there.

Step 1: Identify the opportunity for change. Where are we now? Where do we wish to be? What is the gap?

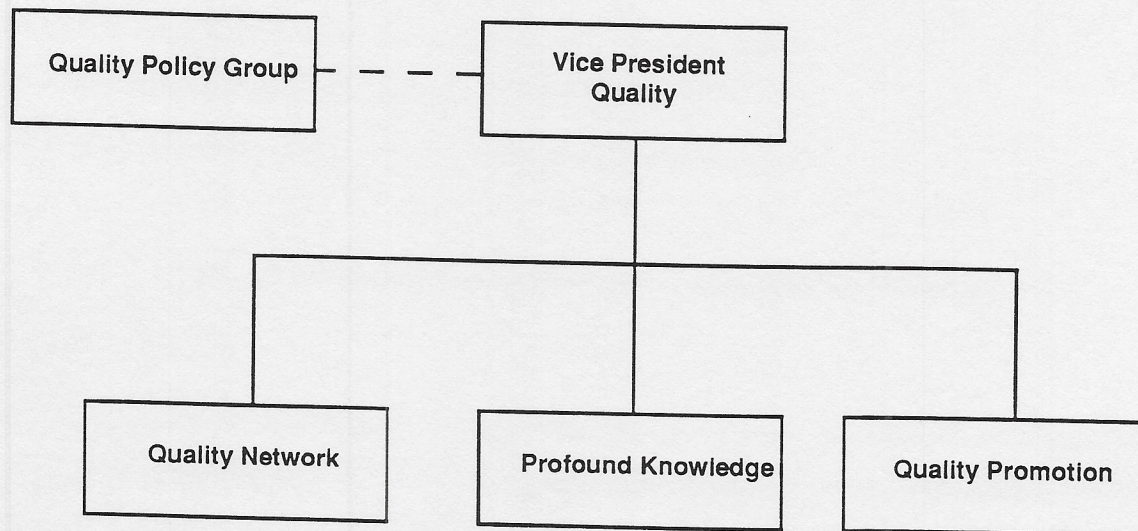


**Current Corporate Quality Organization**

*Where are we now?* On the physical level, how is quality organized? Does form follow function or lead it? The current organization is dominated by the vehicle and part auditing function. This has been the mainstay of the quality profession for decades. It certainly has a place in the future, but not a large one. The current organization is also not complete. Other organizations control key measurement systems. The Quality Network is a very good addition. In fact, with some modification, I think it could be the nucleus for the future Quality Office. My intent here is to build on the good accomplishments and processes that the current organization has established. There are however, major areas that must be improved. My suggestions here are in the spirit of our Beliefs and Values that everything can and must be improved.



*Where do we wish to be?* My vision for the Corporate Quality Organization closely follows the functions of the organization and incorporates the major activities of change: Physical, Logical, and Emotional.



### Future Corporate Quality Organization

The **Vice President for Quality** should be the Chairman's and the Management Committee's chief advisor for Quality in everything that we do. He or she should be recognizably proficient in the profession of Quality. This means that he or she should be well balanced in the reduction of variation, the optimization of processes, the advancement of knowledge, and the improvement of people and teams. He or she would be a peer of the Company's other chief advisors for Cost, Fast, and Great. The Vice President for Quality should have a strong dotted line relationship to the rest of the organizations that administer the policy. This can be accomplished in two ways.

First, the traditional link with the managers in the Quality discipline (i.e. the old "Directors of Reliability" and the managers reporting to them) should be strengthened by having the Vice President for Quality give input to their Personal Development Plan evaluation as to their professional development and performance. In addition, the Vice President for Quality should coordinate the placement of all managers in the Quality discipline. This would be similar to the coordination that occurs in the Finance or Engineering or Personnel communities.

Second, there should be a **Quality Policy Group** consisting of the Vice President for Quality, the Vice President for Technical Staffs (representing design and engineering), the Vice President for Communications and Marketing, the Vice President for Finance, the Vice President for Materials Management, the President of GM Europe, and the Group Vice Presidents from BOC, CPC, T&B, and ACG. The disciplined execution will come in part from the involvement of these key leaders in the making of Quality



Policy. They will have more ownership in the Policy, and should execute accordingly. This approach is not entirely consistent with Mr. Sloan's separation of policy from administration, but we have learned much since then about how to get buy-in and commitment. I think that Mr. Sloan's plan and the rationale that created the Policy Groups in the first place was a good one. We must be careful not to add more meetings without looking to what could be eliminated. In this regard, perhaps a reconstituted General Managers' Meeting or Corporate Quality Council would be the appropriate vehicle.

The **Quality Network** should provide the guidance that consistently links customer feedback with internal process measurements. The Quality Network, through its Synchronous and QFD Action Strategies, and using the Systems Engineering Center, should have strong ties to product planning, market research, and design and engineering. The old quality audit function should be reduced and reassigned to the Quality Network. A small cadre of people then will "calibrate local eyeballs" to get the consistency that we need worldwide. Their primary customers will not be top management, but the Phase 0 and 1 product teams. The Quality Network should also coordinate for consistency the Quality portions of the other 26 NAO Strategies which provide a good balance of all four phases of product development.

The Quality Network should provide the necessary education and training, and consulting and assistance to General Motors, our supply base and our dealer network. All Education and Training should be reviewed to reflect the Quality, Cost, Fast, and Great framework. The primary quality E & T experience should be in mainstream courses and the everyday conduct of business. These experiences would be augmented with quality specific courses. But the Quality Network is more than an education and training organization. The people that develop and deliver the education and training must practice what they preach. They must consult and assist others in the improvement of their customer's processes and products.

The responsibilities of the old Directors of Reliability should be combined with the salaried Group Representatives to the Quality Network Steering Committee. CPC combines these positions now; the other Groups should do the same. (I also think that the Group synchronous coordinators should be combined into the position.) They should manage the "local eyeballs" that need calibration. They should manage the quality professionals that are an integral part of the product teams. They should be their Group's or Division's lead quality professional who champions quality in every decision and action.

The Leader of **Profound Knowledge** should be responsible for the development and improvement of the theories and methodologies that will guide the advancement of Quality at General Motors. This means that, like the Vice President for Quality, he or she should be well balanced in the reduction of variation, the optimization of processes, the advancement of knowl-



edge, and the improvement of people and teams. This organization must continually push the state of the art of the Quality profession through internal research and external search.

The **Quality Promotion** organization is responsible for internal and external communication of General Motors' quality message. Organizational Development, Public Relations and Marketing professionals would be the core of this organization. The aim of the organization would be to manage the differences between the "perception" and "reality" of Quality both inside and outside the Company.

*What is the gap?* I think the gap between where we are and where we wish to be is fairly obvious. After some years of good improvement, a number of carlines are now at a stable level of quality or are at a stable level of improvement that will not be world class in the current business planning window. Our quality processes have delivered just about all of what they can deliver. The process of improvement of quality must itself be improved if we are to make the necessary improvements in the quality of our products and services. We can no longer afford for everyone to keep doing what he is doing. If people are auditing, or inspecting, or report-carding in Phase 3, they cannot be designing or engineering in Phase 0 and Phase 1.

Steps 2 through 5 (Analyze, Plan, Implement, and Evaluate) of the Change Methodology should be developed by the team of Gary Cowger, Ed Czapor, Cardy Davis, Jim Fitzpatrick, Arv Mueller, Daniel Sallee, and Bill Scherkenbach. This is an opportunity to build on the accomplishments of Ed Czapor and set the stage for further improvements after he retires.