

LAW ENFORCEMENT MANAGEMENT INSTITUTE

TOTAL QUALITY MANAGEMENT:

**A MANAGEMENT PHILOSOPHY FOR
COMMUNITY ORIENTED POLICE SERVICES**

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I.

INTRODUCTION

Police Administrators, over the last two decades, have woven a traditional policing cocoon around their organizations. Some threads of this cocoon are Management By Objective, reactionary services, and centralized command structures. These threads have been woven so tight traditional policing organizations face decay through cynicism, isolation, and the proliferation of poor ethical environments. Most experts in the field of policing realize that a community oriented organization is the only creature that can crack this cocoon of decay. The problem faced by the police executive is discovering how to best lead their organizations through this metamorphosis of change.

The focus of this paper is to discuss how Total Quality Management (TQM) can facilitate an organization's transition to community policing and thereby improve the quality of service it provides to the community. Many of TQM's key components (e.g., problem solving, team work, and a customer orientation) are analogous to the concepts of community policing. Much has been written about community policing and the need for a change in police organizations. There has, however, been a lack of literature regarding specific methodologies for police executives to utilize to make these changes.

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This paper will discuss TQM as an operational philosophy to direct this transformation. TQM will continue to be effective in an organization committed to community policing, since their value structures are so analogous. A closer look at TQM will reveal how it can assist an organization in establishing an effective partnership with its community.

II.

WHAT IS TOTAL QUALITY MANAGEMENT?

TQM is a management philosophy, developed by W. Edwards Deming, whose focus is the pursuit of quality. The key components in TQM are: a customer orientation, participative management, process problem solving and continuous improvement. The common link between these components is that decisions are based on sound data.

Dr. Deming developed his philosophy while working with Japanese manufacturers during the post World War II era. He realized that the key to quality was to instill Statistical Quality Control commitment at the management level. His teachings so revolutionized Japanese industry that they named their highest achievement award, the Deming Prize, after him, (Walton 1986, 5). The proliferation of Japanese products in America today is a testament to the success of TQM.

In the last decade Ford Motor Company, Xerox, and IBM are just a few of the many American manufacturers who have been applying TQM in revitalizing their sagging industries.

Customer Orientation

TQM's customer orientation defines quality as customer satisfaction. Anticipating and meeting customer perceptions is the goal in process improvement projects. The importance of satisfying the customer cannot be over emphasized. Being close to the customer (underlining mine) has been described as one of the eight attributes of an excellent company, (Peters and Waterman 1982, 13-15).

It is easy enough to recognize those customers who are the end users of a product or service. Organizations learn about external customer expectations from a variety of survey and analysis sources. TQM has taken the concept of satisfying the customer a step further by also concentrating on the internal customers of a product or service. Internal customers are the employees involved in the process producing a product or service. By satisfying these internal customers you improve the process and thereby improve the product or service provided to the external customers. Internal customer data can also be gathered through surveying. However, TQM's participative management component allows for those involved in the process to directly impact its improvement.

Participative Management

This component is the most difficult and the most important concept that an organization has to embrace.

At the foundation of Total Quality Management (TQM) are two concepts: participative management and total involvement. Both principles involve the establishment of a cultural shift within an organization aimed at making the new culture more participative (U. S. Government 1990, iv).

This is because many organizations are operating under a Management By Objective (MBO) model that is highly autocratic.

Although MBO goes under a single label, there are major differences between the ways by which it is prescribed in its ideal form and the ways by which it is practiced. One of the key issues and elements in the management-by-objectives approach is the degree to which subordinates are involved in the process of setting objectives or goals (Hellriegel and Slocum 1976, 413).

Traditional policing's quasi-military structure, characterized by a rigid top-down hierarchy of command and control, utilizes MBO principles under what Hellriegel and Slocum (1976) call the "profit-maximizing managerial value system."

With profit maximizing management, we expect objectives to be established and tightly controlled by each higher level of management for the immediate lower level. This represents one of the key differences often found between the prescribed approach to MBO and the way it may actually be practiced (Hellriegel and Slocum 1976, 414).

Police organizations managed under this type of MBO manage by fear resulting in a decrease in worker satisfaction.

Hellriegel and Slocum (1976, 51) point out that under this

style of MBO "employees are only means, not ends!"¹ It is important for executives to realize that an organization's ethical makeup, those values that employees learn are important, are determined by its management philosophy. The importance of a proper ethical foundation cannot be overemphasized. However, its relevancy in community policing will be discussed later in this paper.

What is important, at this point, is to understand that participative management is crucial to the success of any organization. Commitment to improvement is instilled in employees by directly involving them in the decision making process. Worker satisfaction is increased by their involvement and this translates to increased productivity. In their book, In Search of Excellence, Peters and Waterman (1982) cite employees as "our most important asset." They go on to describe that employee involvement as "the root source of quality and productivity gain." It makes sense to effectively solve problems by directly including those people involved in the process.

¹Future references to the MBO philosophy and its impact in policing are limited to the specific style described in this section.

Process Problem Solving

Employees can increase customer satisfaction by focusing on improving the processes which produce their products or services. To put it another way the processes are the means by which inputs (e.g., demands) are converted to outputs (e.g., services). The importance of focusing on the process is expressed in the saying, if you take care of the means then the ends will take care of themselves (attributed to the 20th Century philosopher Mahatma Gandhi).

In policing this concept is more easily understood when viewed from the systems perspective. The systems perspective views an organization as a group of interrelated parts with a single purpose (Donnelly, Gibson and Ivancevich 1987, 8).

The police department, for example, is a system made up of bureaus, divisions, units, squads, teams and shifts. An action taken by an individual in the system will inevitably result in reactions by other individuals. Systems, therefore, are always changing. The system must be designed to turn actions and reactions into improvements (Sheehan and Cordner 1989, 23).

The systems perspective allows managers to view the organization subsystems and focus on their processes for improvement. The systems model on page 9, figure 1, was presented by Dr. Jim Alexander at the Law Enforcement Management Institute's Module II seminar on 10/23/92. This model illustrates how the components of a system can be broken down for analysis.

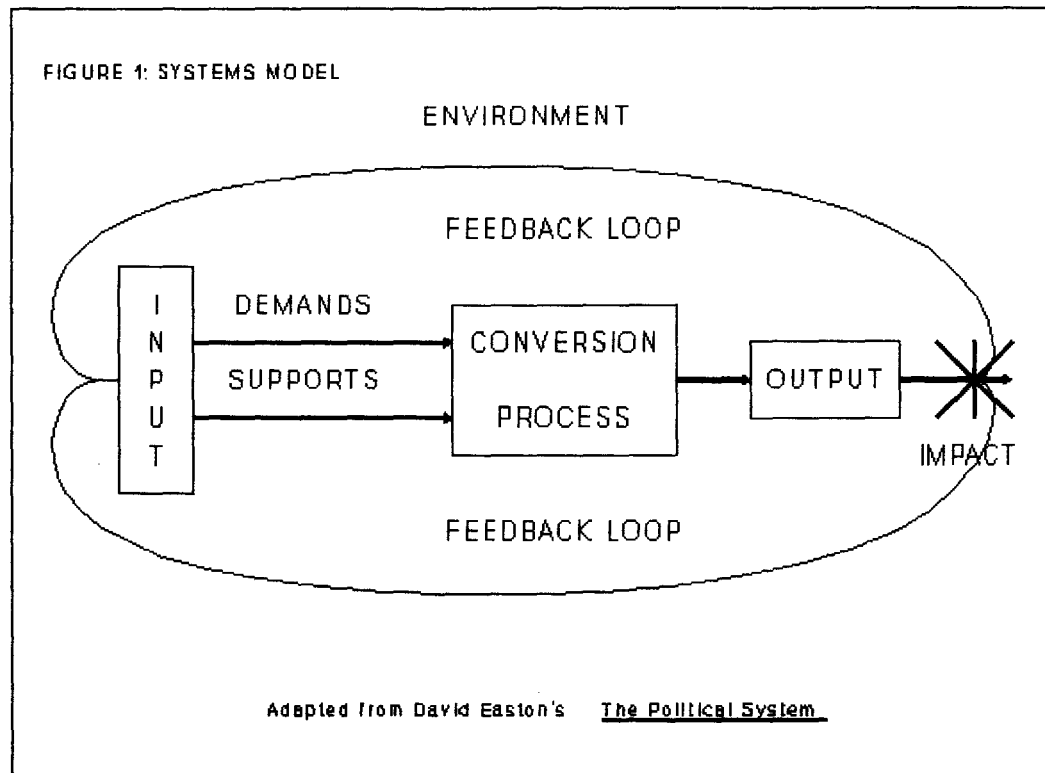


Fig. 1: Systems Model

Many tools of quality are used to dissect these processes in order to identify problems or areas for improvement. The appendix provides a detailed look at these analytical tools. Once a process problem is identified, its improvement is achieved by using Dr. Deming's Plan-Do-Check-Act cycle.

Figure 2 illustrates the improvement steps as applied in this cycle (Ricklefs 1992). This P-D-C-A cycle allows an organization to systematically re-evaluate the effectiveness of one's policies and programs. Dr. Deming's concept of continuous improvement is expressed by the cyclic nature of this approach.

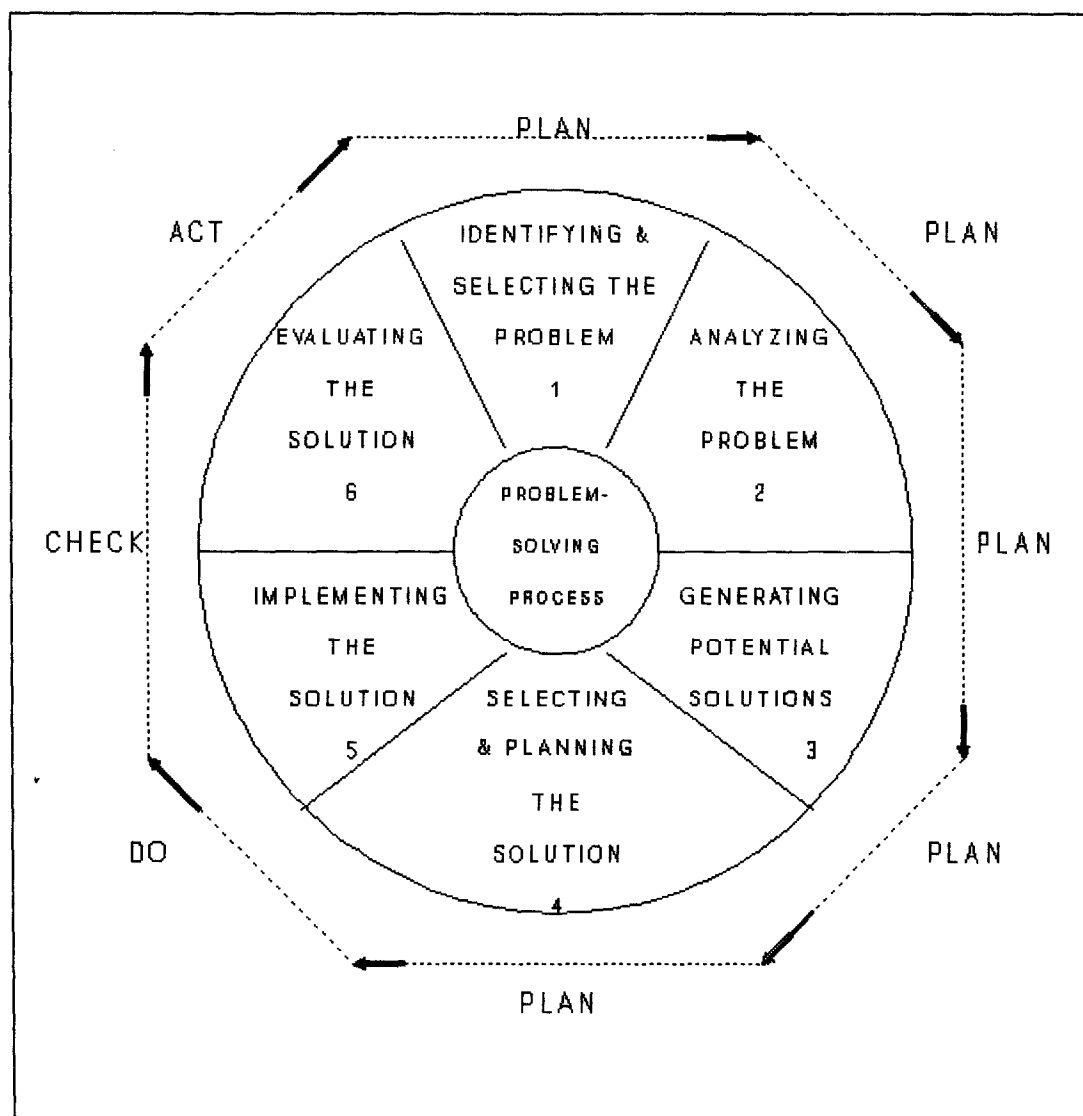


FIG. 2: PROBLEM-SOLVING PROCESS

Continuous Improvement

Continuous improvement is the TQM element which intertwines throughout all the components. It is a commitment by both management and workers to strive for total satisfaction of the customer. This commitment is not entered into lightly. For the organization's executives it is a radical change in the way they learned to conduct business. They must be willing to accept the fact that the status quo does not meet today's market demands. They must create a vision for the future based on quality and the worth of their employees.

For the workers, continuous improvement empowers them to make a difference in the success or failure of the organization. They begin to share the burden of responsibility for the quality of their goods and/or services. Management and workers must work together to determine organizational goals. They must develop values which promote innovativeness and commitment to pride of craftsmanship. A commitment to continuous improvement through employee involvement is the key to a successful "quality turnaround" (Sippola 1991, 44).

III.

APPLYING TQM IN THE PUBLIC SECTOR

The importance of an organization's vision and its explicit values cannot be underscored. This is the first step in the transformation for public service organizations if they are to be successful. Current recessionary economic conditions have forced budget constraints while social pressures for more services have grown. TQM is a philosophy that gives an organization the methodologies for improving the quality of the services they provide to their communities. TQM, through Deming's fourteen points, provides the values public organizations need if they are going to break free from the bureaucratic cocoon of the status quo. Michael E. Milakovich explains how Deming's fourteen points are applied in the public sector (Milakovich 1991, 200-203):

Point 1. Create and publish to all employees a statement of the aims and purposes of the company or organization. Management must demonstrate constantly their commitment to this statement. Every one must clearly understand the mission of the organization and his or her role in achieving it. Governments are not businesses in the profit-making sense, but they are responsible for providing quality service to the taxpayers and productive career opportunities

Point 2. Learn the new philosophy top management and everybody. Continuously improving customer service quality must be top management's focus at all times, and customer satisfaction must again become the primary objectives of all public service organizations. To accomplish this goal, agencies must make greater efforts to evaluate customer needs, streamline internal processes, and

merge customer service data with management control systems designed to continuously monitor and improve quality.

Point 3. Understand the purpose of inspection for improvement of processes and reduction of cost. Require, instead, statistical evidence that quality is built into the process...the goal is to provide a quality service or product in the first place, making inspection and rework to correct mistakes unnecessary.

Point 4. End the practice of awarding business on the basis of price tag alone. Commonly, the emphasis in most governments is on seeking the lowest bidder. Instead, develop and depend on meaningful measures of value, along with price.

Point 5. Improve constantly and forever the system of production and service. Public officials often think of "programs" as an organized sequence of tasks having a beginning, a middle, and an end. TQM must be thought of as a continuous activity with "breakthroughs" to higher levels of goal-attainment resulting after processes become visible and stable and are under control.

Point 6. Institute training. Internal customers (employees) must be provided with the proper training, tools, and methods to implement continuous quality improvement.

Point 7. Teach and institute leadership. Learning new behavioral techniques and statistical management practices is required to transform public and nonprofit organizational cultures. Supervisors must coach, rather than control, their subordinates

Point 8. Drive out fear. Create a climate for innovation. Management by objectives (MBO), management by numbers, and management by results can all be reduced to their common denominator: management by fear.

Point 9. Optimize toward the aims and purposes of the company, the efforts of the team, and staff areas. Break down barriers between departments. Everyone must work together to address the special causes of problems, take steps to eliminate

destructive interdepartmental competition, and replace it with cooperation, trust, and teamwork.

Point 10. eliminate exhortations and slogans for the workforce. Emphasis must be placed on providing the means to achieve customer satisfaction

Point 11a. Eliminate numerical quotas for production. Instead, learn and institute methods for improvements. **11b. Eliminate MBO. Instead, learn the capabilities of processes and how to improve them.** Stress quality of service, rather than numbers. Allow properly trained and motivated employees to provide quality service, free from the fear generated by morale-destroying effects of individual punishment-reward control systems, management by objectives, incentive pay, and so-called merit systems.

Point 12. Remove barriers that rob people of pride of workmanship. Take positive actions to properly train and equip the workforce and to instill "intrinsic" motivation to do a better job without external control or coercion.

Point 13. Encourage education and self-improvement for everyone. Both management and the workforce must learn how to transform their organizations. teaching internal customers with the skills and knowledge to provide quality service is an essential, yet often overlooked, phase of any TQM strategy. For top management to make the necessary adjustments to processes, advanced training in statistical control techniques may be provided as necessary, especially at the supervisory and mid-management levels.

Point 14. Take actions to accomplish the transformation. Leaders must create a visible structure as well as a future vision and positive work environment to promote quality improvement on a daily basis. senior managers must "walk where they talk," leading by active participation and personal example to achieve transformation.

Organizations can establish an ethical work environment by embracing these values. However, Dr. Deming points out that embracing these values is not enough, for there are seven deadly diseases that stand in the way of transformation (Deming 1986, 97-98). Dr. Deming (1986, 97-98) explains that these diseases must be cured if an organization is to be successful:

1. Lack of constancy of purpose. Lack of long term planning.
2. Emphasis on short-term profits: short-term thinking.
3. Evaluation of performance, merit rating, or annual review.
4. Mobility of management; job hopping.
5. Management by use only of visible figures, with little or no consideration of figures that are unknown or unknowable. Failure to break the numbers treadmill.
6. Excessive medical costs.
7. Excessive costs of liability, swelled by lawyers that work on contingency fees.

The cure, Deming adds, will require radical changes in management styles (Deming 1986, 97). To better understand the need for change, in policing, we need to understand where policing is today and how we got there.

IV.

THE EVOLUTION OF POLICING IN AMERICA

The history of policing in the United States is usually divided into the following eras: the political era, the reform era and the community oriented era.

These eras are distinguished from each other by the apparent dominance of a particular strategy of policing. The political era, so named because of the close ties between police and politics, dated from the introduction of police to municipalities during the 1840's, continued through the Progressive period, and ended during the early 1900's. The reform era developed in reaction to the political. It took hold during the 1930's, thrived during the 1950's and 1960's, began to erode during the late 1970's. The reform era now seems to be giving away to an era emphasizing community problem solving (Kelling and Moore 1988, 2).

Transition to the community oriented era is far from complete. The predominant strategy today is still the "professional crime fighting strategy" of the reform era (Moore and Trojanowicz 1988, 4).

The professional crime fighting strategy places the responsibility for controlling crime squarely on the shoulders on the police. The public is seen mainly as a source of information with little impact on, or responsibility for, the crime in their community. The public also has little or no input into the policies and goals of the police organization. An organization operating under this strategy is characterized by a centralized top-down command structure, random patrol that

responds to calls for service, and specialized units trained to deal with investigations and/or specific types of crimes. This type of strategy is called traditional policing in most community oriented literature.

The Ineffectiveness of Traditional Policing

The ineffectiveness of traditional police practices were first discussed in the Kansas City Preventative Patrol Experiment (Kelling et al. 1974). This study showed that there was little correlation between the solvability of crime and the rapid response of the police. It also pointed out that random patrol produced, at best, random results. Furthermore, it suggested that traditional investigative techniques were limited in their effect on crime. This study inspired some administrators to search for new and innovative ways of providing police services. However, the vast majority of police organizations continue to operate under the traditional policing model of management by objective (MBO). Success under MBO has traditionally been measured in terms of arrest rates, citations issued, clearance rates, and calls for service data. The problem with this approach is that it focuses on the efficiency (i.e. doing things right) of police services instead of their effectiveness (i.e. doing the right things). Dr. Deming (1986, 198) put it this way, "we have forgotten that the function of government is more equity oriented than efficiency oriented." The need for this type of paradigm

shift, in policing, is not a new idea. Herman Goldstein addressed this issue, in 1977, in Policing A Free Society.

In order to make the police function more workable, to reduce the conflicting pressures on the police, and to assure that future investments in police improvements will bring a greater return, we must go back to the fundamentals. We must rethink widely held assumptions regarding the police function; recognize the discretion inherent in police work; and establish the values basic to policing. To reduce present pressures on the police, we must better align public expectations with an accurate assessment of what the police can do; increase the capacity of the police to carry out their responsibilities more effectively; and improve related systems upon which the police depend. And, finally, we must continually bear in mind that the objective of all police reform is not simply to create a perfected police establishment, but to improve the quality of police service (Goldstein 1977, 11).

No public organization is more steeped in tradition, status quo and ethical decay than police departments managing under traditional policing values. The need for these organizations to involve themselves in serious self-assessment is paramount. If executives are to transform their departments to community oriented organizations they must create a workplace culture that is conducive to quality.

V.

TQM'S IMPACT ON THE ROLE OF ETHICS IN POLICING

An organization's ethical makeup is determined by the values upon which its employees base their actions and decisions. The importance of ethics in police organizations have been eloquently addressed by Dr. Sam Souryal. He describes their role as the "little batteries that make the watch run" (Souryal 1992). Total Quality Management's values are embodied in Deming's Fourteen Points (Milakovich 1991, 200-203). Since public service organizations are open systems they are constantly under pressure from their environment. This pressure can be reduced by obtaining feedback from the public. TQM's customer orientation gathers feedback through surveys and by including the community in the policy development process. When viewed from a systems perspective provides TQM can obtain feedback through statistical analysis. This point can be illustrated by re-examining the systems model in Figure 1 on page 8. The output of this process impacts the environment. Mathematical modeling allows one to manipulate the variables in the process resulting in different impacts. TQM utilizes feedback from these different sources to close the loop in these open systems. This is an important point since the interaction between the organization and the public is an integral part of the service.

Customer perception disparities will cause variances in the quality of service provided by the organization.

The problem is not simply one of complexity, but of coping with the fact that public services, in particular, involve value choices. The question of quality in public service is not in meeting service specifications, but of dealing with the shifting value structure of society (Walsh 1991, 513-514).

Law enforcement executives can more effectively deal with these "shifting value structures" (Walsh 1991, 513-514) by using TQM methodologies to analyze them. By analyzing demographic and survey data executives can learn more about the community's explicit values. Customer disparity variances can then be reduced by aligning the organization's implicit values with the explicit values of the community.

Executive commitment to TQM values alone cannot transform an organization. Executives must make sure that managers are not only preaching TQM values, but are practicing them as well. These values must be embraced by the entire organization to have an effect on its culture. Figure 3, on page 21, illustrates how values impact an organization (Peters and Waterman, Jr. 1982, 7).

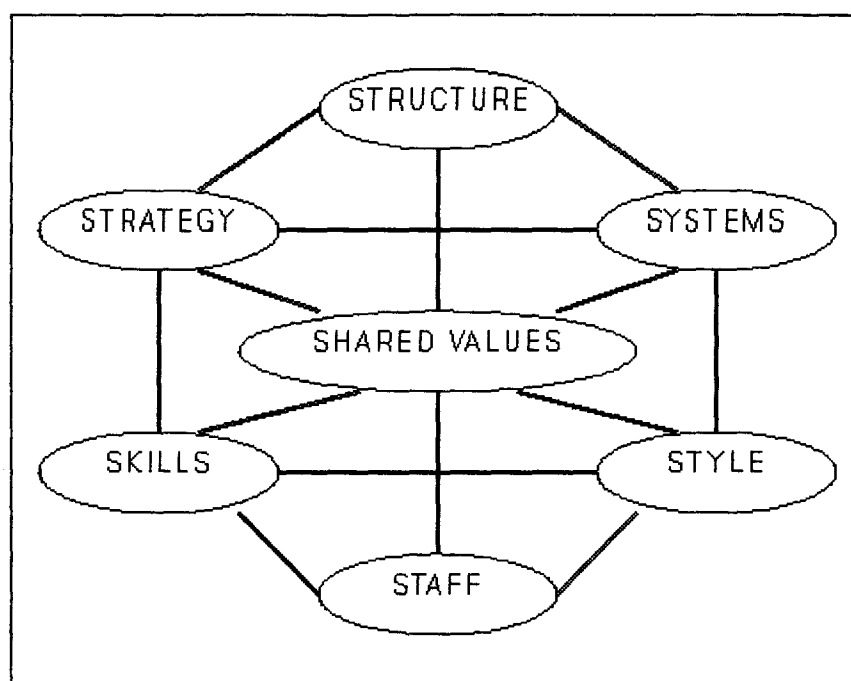


FIG. 3: MCKINSEY 7-S MATRIX

It is generally acknowledged that a primary determinant of police officer behavior is the culture within which officers find themselves. Often, management's attempt to manage culture through command and control merely fosters suspicion, isolation, insularity, demeaning perception of citizens, grumpiness, the "blue curtain," and cynicism (Kelling, Wasserman, and Williams 1988, 3).

Organizational cultures characterized by favoritism and the proliferation of the good old boy syndrome also have a negative impact on employees. Organizations with these types of ethical sub-cultures will suppress innovation and foster worker dissatisfaction. Workers, not in the "good old boy" clique, are not motivated to do a good job because

they feel it is not what you do, but who you know that leads to advancement. The ethical makeup of an organization is what truly guides an organization. These implicit values make up the body of knowledge that lets a worker know what is right and wrong to do.

The model of a police agency that has emerged in this country has been a neutral, sterile kind of organization, devoid of a clear commitment to any values other than operating efficiency. It lacks specific standards by which the quality of its end product can be accurately assessed. Absent an effort to build a set of values in policing those that prevail are the values of the police subculture (Goldstein 1977, 12).

The values exhibited by this type of management by objective model have a "selfish outlook" (Hellriegel and Slocum 1976, 51).

The decisions and actions toward customers are likely to reflect the value of caveat emptor ("let the buyer beware"). Within the organization, employees would probably be considered little more than another resource needed to create the firm's goods and services. These human resources should be fired, demoted, and promoted only on the basis of what is considered best by the managers... (Hellriegel and Slocum 1976, 51).

Many police departments are still managing by traditional policing values through centralized chain-of-command hierarchies. Unfortunately, this managerial style may no longer be appropriate for dealing with the complexities of current social conditions.

This type of management system [chain-of-command hierarchy] was based on religious doctrine and developed at the beginning of the Industrial Revolution to discipline and control an illiterate workforce (Milakovich 1991, 203).

Police executives must lead by example if they are to create a work culture based on TQM values. They have the "Nobless Oblige" (noble obligation) to provide an ethical workplace (Souryal 1992). They must be seen by the workforce using the tools and methodologies of TQM. Workers will be stimulated to accept the new values once executives begin creating project teams and empower workers to develop innovative solutions through problem solving approaches. The breaking down of barriers between departments should increase communication and teamwork leading to improvement of services. Executives who exemplify these values and make sure that their managers propagate them through their actions, will begin to open the "umbrella of civility in the workplace" (Souryal 1992). Once a solid foundation of TQM values is instilled in the police organization, then the work of forging an effective partnership with the community can begin.

VI.

COMMUNITY ORIENTED POLICE SERVICES AND TQM

The homologous nature of Community Oriented Police Services (COPS) and Total Quality Management (TQM) is best described by comparing their key components:

COPS	TQM

Partnership with the community	Customer orientation
Participatory management	Participatory management
Problem solving	Problem solving
Visionary leadership	Management commitment

These philosophies evolved in different professional disciplines but were subjected to the same environmental pressures of the last two decades. Therefore, when you discuss the application of TQM in law enforcement you are also discussing the viability of COPS. The remainder of this paper will utilize the term COPS/TQM to refer to this homologous relationship. The focus will be on how a police department can successfully transform itself into an organization providing community oriented police services. COPS/TQM will enable a police department to improve services at little or no cost, because it is not a new program or unit needing funding. It is a new philosophy which

redirects existing resources and enables us to provide more to the citizen/customers with what we already have.

For this new philosophy to take hold an organization must have visionary leadership. Management must be committed if the organization is to survive the changes that will be forthcoming. Executives should introduce this philosophy and begin the transformation through training at all levels of the department. Management must be careful to monitor the relationship between the quantity of activity and the quality of activity. "For government, efficiency must be subsumed to equity. If we do not keep equity in the forefront of the public sector, we will destroy our society" (Deming 1986, 199). Problem solving skills must be stressed and innovative ideas should be rewarded. A COPS/TQM infrastructure must be developed involving employees at all levels of the organization. It should be separate from, but working with, the organizational hierarchy. Figure 4, on page 26, is a modification of Robert K. Zentmyer and James A. Zimble's (1991, 61) illustration of this type of infrastructure.

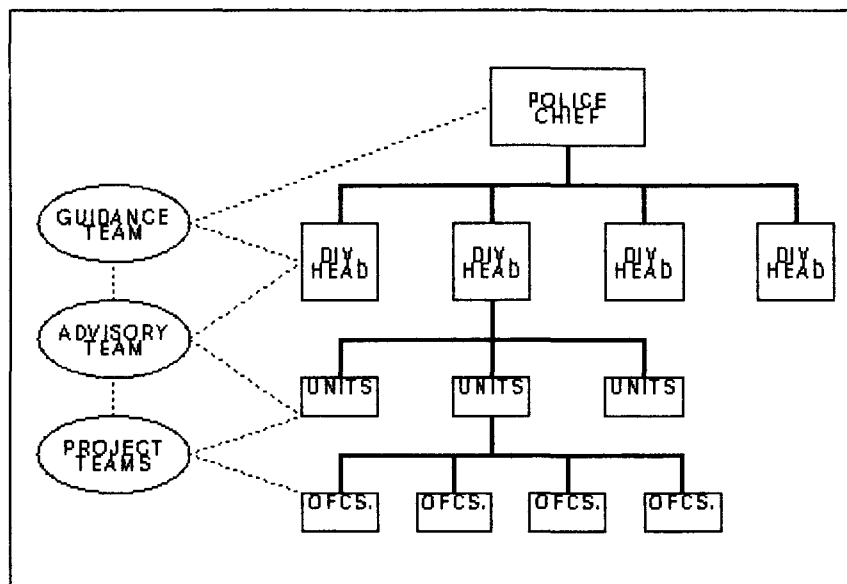


FIG. 4: COPS/TQM INFRASTRUCTURE

The guidance team should begin with a serious self-assessment of the organization and the development of an implementation plan. The advisory teams would be responsible for identifying problem areas and forming project teams to address them. The project teams collect and analyze data relating to the problem and develop solutions to improve it. This infrastructure will undoubtedly result in changes in the organizational hierarchy as improvements are implemented. This will be the most difficult part for some managers to accept. Visionary leaders who embark on a COPS/TQM transformation must have patience with, and pay particular attention to, those who will try to hold on to the status quo.

Other changes will occur when a department begins its transformation. These changes will occur both structurally and in resource allocations (Tapscott 1992, 10).

Resources, under COPS/TQM, should be geographically and program based. This includes manpower as well as material resources. Budgets, submitted by managers, should be programmatic in nature and should clearly show how these programs will further the organizational goals within the community. Resource decision making should be determined by sound crime analysis data which is also broken down geographically. Patrol and investigative assignments should also be geographically based.

While individual officers would be responsible for particular neighborhoods, investigators would be assigned cases for larger geographic blocks made up of those individual neighborhoods. The patrol officers would serve as a facilitator for their neighborhood. They would help citizens/customers with problem solving and bring together those resources within the police department needed to address the problem. The officer/facilitator would also be the liaison with other departments within the city.

Investigators should work with the neighborhood officers in analyzing crime patterns and developing appropriate responses for their areas. Supervisors should assert the values and goals of the organization rather than preach rules and regulations. Supervisors should view their role as a resource provider and coach for the patrol officers. In Corporate Strategies for Policing, Moore and Trojanowicz explain that these changes are necessary to encourage the

initiative of the officers and the creation of a working partnership with the community:

Overall, under the community policing concept, the ends, means, administrative style and relationship with the community all change. The ends expand beyond crime fighting to include fear reduction, order maintenance, and some kinds of emergency social and medical services. The means incorporate all of the wisdom developed in problem-solving approaches to situations that stimulate calls to the police. The administrative style shifts from centralized and specialized to decentralized and generalized. The role of the community is not merely to alert the police to crimes and other problems, but to help control crime and keep communities secure (Moore and Trojanowicz 1988, 10).

Implementing COPS and TQM

Once an organization implements COPS/TQM they will increase their accountability to the community. Another bonus, in implementing COPS/TQM, is that these changes can be accomplished without large increases in manpower.

Many police executives believe that entering this community oriented era of policing will require vast increases in manpower to do the community oriented tasks. However, this is not so because COPS/TQM is a change in operational philosophy rather than simply starting a new unit. COPS/TQM redirects existing resources and teaches employees new approaches to their current assignments.

It may be true that implementation, from a resource perspective, is easier in large organizations because there are more employees available to reassign. However, smaller departments have an advantage in transforming the culture of

the organization. While smaller departments may not have the manpower to assign an officer to each neighborhood many COPS/TQM opportunities are still available.

Most small departments operate several shifts to insure continuous availability. Jurisdictions are usually broken down into patrol districts or sectors with an officer assigned to each area. Investigative functions are usually handled by a smaller number of officers whose case load is assigned either sequentially, by occurrence, or by type of crime committed. Crime prevention and community relations tasks may be handled by a small unit or by investigator(s) specialized in these areas. The following section is an example of how COPS/TQM could be implemented in this type of organization.

Sample Implementation Plan

PHASE I:

1. Intensive training at all levels of the organization regarding the COPS/TQM philosophy and the specific tools of TQM. Increase training in crime prevention across the patrol division.
2. Create guidance team to develop department's vision statement, mission statement and organizational goals.
3. Create advisory team to begin organization's self-assessment.

Phase II:

1. Begin a public relations campaign to let the community know the organization's goals and its desire to forge a partnership. Begin to collect data relating to the public's experiences, perceptions, and expectations of the department. Seek the community's input through town meetings, task forces, etc.

2. Redefine patrol districts along natural geographic/neighborhood boundaries. Permanently assign officers, of each shift, to specific districts during their shift tour. This aspect is crucial for officer and the community to be able to form a relationship. It is also advisable to stop the practice of rotating shift hours.

3. Each officer will still patrol his or her assigned district during his shift and a neighborhood within that district will become their responsibility. During an officer's tour he or she can utilize their free time with community oriented activities within their assigned neighborhoods.

a.) The Kansas City (Kelling et al. 1974, 4) study showed "about 60 percent of a police officer's time is typically noncommitted (available for calls)." The self-assessment step in phase 1 should provide the applicable percentages for the organization.

b.) Officers should initially begin by introducing themselves with their neighborhood via a letter of introduction or through door to door contacts. They can begin to survey their neighborhood to collect data (e.g. fear surveys, etc.) to guide later activities. Officers should act as the facilitator in forming neighborhood watch groups and assist them with their programs. These can all be accomplished without taking away from delivering services to the larger districts. Should an officer be busy, non-emergency calls can be held (it is important for operators/dispatchers to explain the reason for the delay). Conversely, in an emergency situation, citizens will certainly understand an officer's hasty departure.

4. Assign investigative case loads based on the patrol districts. This will allow investigators and patrol officers to work as a team in approaching crime in the community.

5. Create project teams to improve processes within the organization as well as address problems within the community.

PHASE III:

Develop a quality assurance plan whereby all facets of the organization are continuously evaluated. Continuous improvement in the quality of service provided to the customers/citizens of their community is the focus of each member in the organization.

This example of implementing COPS/TQM within an organization represents this author's views. The bonus of utilizing Total Quality Management techniques in an organization's transformation, is that the teamwork aspect will produce even better results. It is a new application of the old adage of two heads being better than one. However, in this case the collection and analysis of sound data will insure effective decision making.

VII.

CONCLUSION

Recent recessionary economic conditions have forced many police executives to search for new ways to provide services to their communities. Furthermore, most experts in the field of policing realize that traditional police approaches have been ineffective in reducing crime or the public's fear of crime. What is needed is a holistic approach, if the social ills caused by criminal activity are to be cured.

Community Oriented Police Services (COPS) is an approach that is having a positive impact in recent years. Communities across the country have forged partnerships with their police in efforts to reclaim their neighborhoods and rid themselves of the diseases connected with crime. While COPS cannot claim to be the cure, it is most certainly a potent antibiotic. Communities such as: Madison, Wisconsin; Aurora, Colorado; and Rockville, Maryland are but a few of the many success stories of how COPS has improved the quality of life for their citizens. There has, however, been a lack of literature regarding specific methodologies for executives to use in implementing COPS.

Total Quality Management (TQM) is an operational philosophy which provides police executives with the tools and methodologies to successfully lead an organization through its transformation. The homologous nature of TQM

and COPS insures that the endeavor will be successful. COPS/TQM focuses on understanding the perceptions and expectations of the community. Then the organization uses the tools of COPS/TQM to improve the processes which create its goods and services. COPS/TQM organizations base their decisions on fact rather than assumption. COPS/TQM will enable a police organization to begin forming an effective partnership with its community and improve the quality of life to its citizens.

APPENDIX

Permission for the use of this appendix was granted by Dale Ricklefs, Quality Advisor for the City of Round Rock. While it does not contain specific law enforcement examples, its purpose is to demonstrate TQM tools.

APPENDIX A: ANALYTICAL TOOLS

There are a few basic tools commonly used in the TQM approach that are useful in defining improvements to a specific process or resolution of a specific problem. The tools are applied in the following sequence:

1. **Flow Charts** - To define the process being evaluated.
2. **Brainstorming** - To develop all possible causes.
3. **Cause and Effect Diagrams** - To categorize the possible causes.
4. **Pareto Charts** - To determine the most significant of the causes.
5. **Determining Root Cause** - To ascertain what factors underlie the apparent causes.

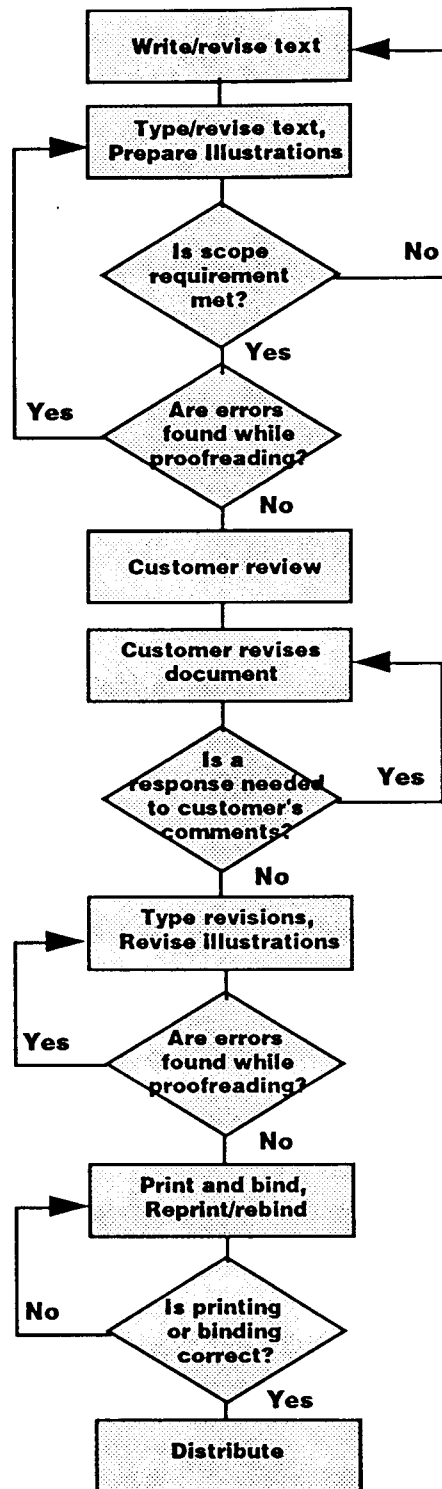
Flow Charts

A flow diagram of a process is very useful in identifying all the steps involved and in visualizing the process. No matter how simple the process might seem, the different people involved may have different concepts of the steps involved. It is essential to have several people involved in a process independently develop flow diagrams. More than likely, you'll get back a wide variety of ideas of the steps in the process and their interrelationship. A flow diagram gives you an overview of the steps involved, their sequence, what decisions are made, and how they effect the flow. As an example, let's take the reasonably simple task of producing a written report for a customer. We'll start at the point that the project work has been done and the task is to convert the work into a final, printed document for the customer. Figure 7 illustrates how you might prepare a flow chart for the process. The diamond-shaped boxes are decision points, while the rectangular boxes are steps that explain a part of the process.

The chart can then be used to facilitate discussion about what might be done to improve the process. It might go something like:

Our reports have been going out with some typographical errors, even in the cover letters. We need to spend more effort on proofreading. Who is doing it now? Who should be doing it? Are we allowing enough time in the process for proofreading? After all, a poorly prepared report gives the customer a poor impression of our quality. Some of our reports are hard to understand. Should we add a technical editing step before it is proofread? We need someone other than the author to check the draft. We haven't been allowing enough time in our schedules for customer review and we need to adjust future project schedules to do so. We've had some reports go out with pages missing or inserted upside-down, so we need to make some changes in the final production step. We need to be sure to allow

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FIGURE 7
FLOW CHART

enough time to have someone (and let's decide who) go through each copy to be sure it is assembled properly. We've had some last-minute confusion on who is to receive copies. We need to send the customer a draft distribution list along with the draft report.

Brainstorming

The process of brainstorming involves generating a large number of ideas on a specific problem, solution, opportunity, or process from a group of people. A key is to get the right representation on the team. The team should be a vertical slice through the project or organization involved. For example, if the problem involves production of plans and specifications, the team should include engineers, drafters, clerks, secretaries, CAD operators, the office manager, and project managers. A homogeneous, horizontal slice of only engineers would result in a narrow viewpoint on the problem. Quality improvements come from involving everyone in the process, as discussed earlier.

Brainstorming occurs in a free-thinking, safe environment in which ideas are generated and recorded without any judgments or censorship. A "wild" idea by one person can stimulate an idea critical to solving the problem from another. Ridicule or harsh judgement will ruin the creativity of the session. Generally, one person acts as the session facilitator and one as the recorder (see the *Team Handbook*). The facilitator has the job of keeping a freewheeling and open environment, stopping all judgements and discussions of ideas until the brainstorming process is complete. The recorder's job is to quickly and accurately write each idea down as it is generated. Using large flip charts allows the ideas to be seen by all and the sheets serve as a group memory. The session should continue until no new ideas are presented.

To illustrate the concept, Figure 8 is a list of ideas generated by a team working on the problem of limited sharing of work between departments of a city, even when some departments were overloaded and others weren't. Brainstorming can be a fun, energizing exercise for the team and a very productive source of solutions.

Cause and Effect Diagrams

Brainstorming can generate a lot of ideas - even an overwhelming amount of information. Cause and effect diagrams, also referred to as fishbone or Ishikawa diagrams, are often used to categorize and organize the information. The method of constructing a diagram (see Figure 9 for a sample based on the brainstorming shown in Figure 8) is:

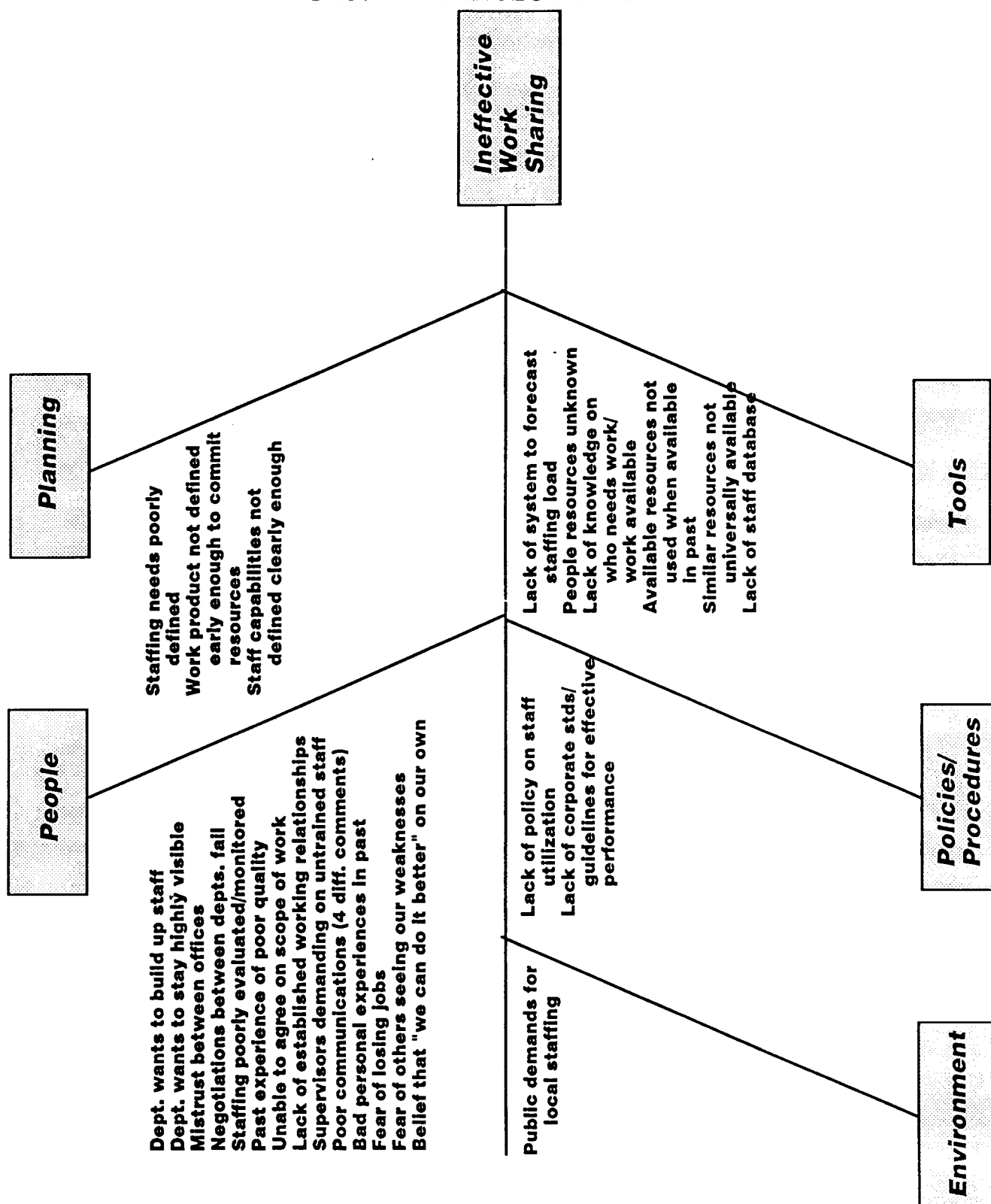
- Determine the effect. This is the problem the team is addressing.
- Put the effect in a box on the right-hand side of the paper.

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**FIGURE 8
SAMPLE BRAINSTORMING OUTPUT**

PROBLEM: Ineffective Work Sharing Between Departments
<p>Department wants to build up staff.</p> <p>Division level staffing needs are poorly defined</p> <p>Departmental need/drive for high visibility.</p> <p>Mistrust between offices.</p> <p>Negotiations fall between departments on sharing resources to do a job.</p> <p>Lack of system to forecast staffing requirements.</p> <p>People resources unknown.</p> <p>Staffing in work area is poorly evaluated/monitored.</p> <p>Public demand for local staffing.</p> <p>Past poor experience with quality.</p> <p>Centralized knowledge of who's available, who needs work.</p> <p>Inability of supervisors and department heads to reach agreement on scope of work.</p> <p>Work product not defined early enough to commit resources.</p> <p>Capabilities of staff are not equivalent within departments.</p> <p>Lack of established one-on-one working relationships between staff in different departments.</p> <p>Available resources not previously used when they were available, causes ill feelings.</p> <p>Similar resources not universally available.</p> <p>No clear-cut policy on decision making for staff utilization-- or enforcement.</p> <p>Supervisors too demanding on staff which may be inadequately trained/knowledgeable.</p> <p>Lack of readily-available, up-to-date staff resource data base.</p> <p>Lack of clear, bi-directional communication.</p> <p>Poor communication between department managers.</p> <p>Poor communication between supervisors within a department.</p> <p>Non-existent communication between supervisors across departments.</p> <p>Bad personal experiences in the past between key players .</p> <p>Lack of corporate standards and guidelines for effective performance.</p> <p>Fear of losing job.</p> <p>Fear of others seeing our weaknesses.</p> <p>Belief that "we can do it better" on our own.</p>

FIGURE 9
CAUSE AND EFFECT DIAGRAM



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- Draw an arrow from left to right pointing to the effect.
- Using the ideas generated in the brainstorming sessions, group the ideas into categories of causes. In the case of our example, the causes were people, environment, planning, policy/procedures, and tools.
- Put the categories into boxes above and below the main arrow and direct a branch arrow to the main arrow.
- Put the ideas into their proper category.

Once the ideas are grouped by category, the list of possible causes isn't as overwhelming. Each category can be studied to find the most probable causes. The cause and effect diagram promotes group discussions of problems and displays information. It provides a summary with much greater clarity and eye appeal than the flip charts of ideas produced by brainstorming. There will be additional ideas when the group focuses attention on the diagram. By categorizing the ideas, it becomes easier to do the next step - determine which ideas are most significant.

Pareto Analysis

Vilfredo Pareto, a nineteenth-century Italian economist noted that the most significant items in a group are usually represented by a relatively small portion of all of the items in the group. The purpose of this step is to separate the important few elements from the trivial many by constructing Pareto charts. These charts simply arrange the data in a manner which clarifies the important elements and may suggest something which otherwise might go unnoticed. The chart focuses everyone's attention on the few aspects that may pay the largest returns.

Construction of a Pareto chart is relatively straight forward, especially if the issues being addressed can be defined by real measurements. For example, let's assume the issue under consideration is the causes of change orders on projects. To construct the chart, use the following steps:

1. Identify the feature or issue you are studying, such as the cause of change orders in this example.
2. List the categories that contribute to that feature. For this example, we list the various causes such as owner changed the requirements, site conditions changed, specifications or plans were in error, etc.
3. Tabulate the frequency for each category. List the categories in descending order of frequency.
4. Construct the Pareto chart with the frequencies plotted in descending order.

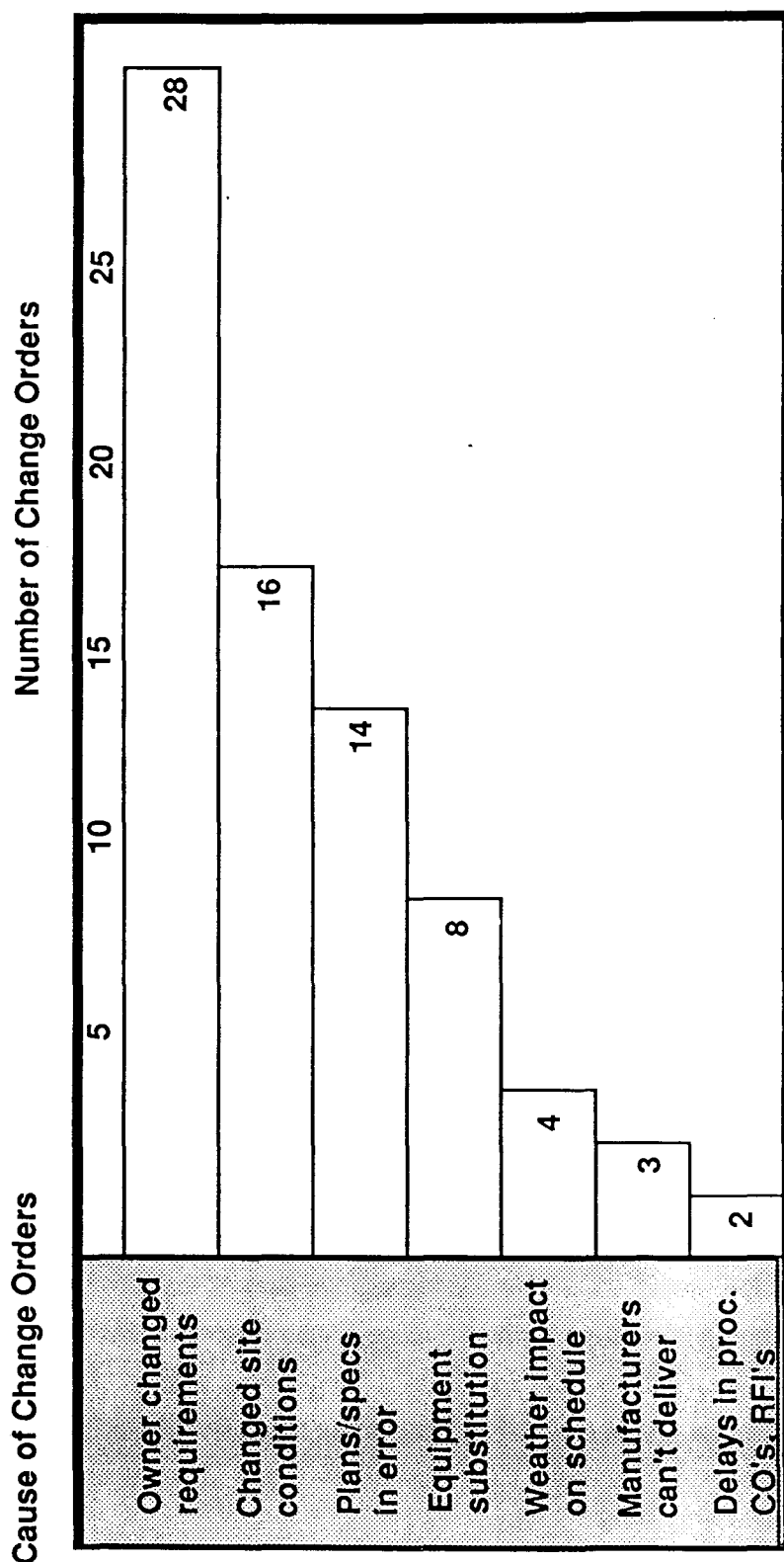
Several completed projects in an architectural firm have been analyzed to determine the cause of the change orders with the following results:

Causes	Number of Change Orders
Owner changed requirements	28
Changed site conditions	16
Specifications or plans in error	14
Equipment substitution proposed by Contractor	8
Weather impacts on schedule	4
Manufacturer unable to deliver specified equipment	3
Delays due to change orders, requests for information, drawings	2

A sample Pareto chart is shown in Figure 10.

The Pareto method can also be very effectively used to determine the most likely causes of a problem for which there are no hard data. Let's return to our example on work sharing between offices. The team that brainstormed and categorized the causes (Figures 8 and 9) was made up of a vertical cross section through a city's organization chart - city manager, department heads, supervisors, and relevant assistants. As discussed earlier, a heterogeneous team composition is important to get several perspectives on the issue. The likely, relative significance of the various causes identified by brainstorming can be quantified by using the "Ten-Four" method. Each person on the team is given a total of ten votes and he/she must cast all ten of the votes, distributed among the identified causes according to that person's perception of the relative importance of each cause. No more than four votes can be given to any one item. If a team member feels there are only three important causes, he/she might cast four votes for the one he/she feels most important and three votes for each of the other two. If the person feels that there are several important causes, their votes may be distributed 3-2-2-1-1-1, for example. The team facilitator calls out each item on the cause and effect diagram. Each team member votes on the item by holding up one to four fingers. The facilitator sums the votes for the item and records the sum on the cause and effect diagram next to the item. This technique develops a group opinion on the important few causes as opposed to the trivial many causes. The results of the "Ten-four" voting for the work sharing example is shown in Figure 11. Of the 23 items on the original brainstorming chart, five items have now been identified which represent about 60 percent of the team members votes as the most important causes.

FIGURE 10
PARETO DIAGRAM



Determining Root Causes

Once the most apparent causes have been identified, further digging may uncover the root cause underlying the apparent cause. A technique used for this purpose consist of asking "why" about the apparent cause at least five times. For example, let's use the "poor communication" cause from Figure 11:

Poor Communication (Apparent Cause)

- Why: Department Manager doesn't advise other department of needs.
- Why: Not sensitive to the benefits of work sharing.
- Why: City position and policy on work sharing not clear.
- Why: City position and policy not disseminated or explained.
- Why: City position and policy doesn't exist (root cause).

DEFINING AND SELECTING MEASUREMENTS

To determine the effectiveness of changes implemented in a system, it is essential that you measure the starting point and any changes. You can't apply statistical techniques until you have measurement data!

Designing Experiments

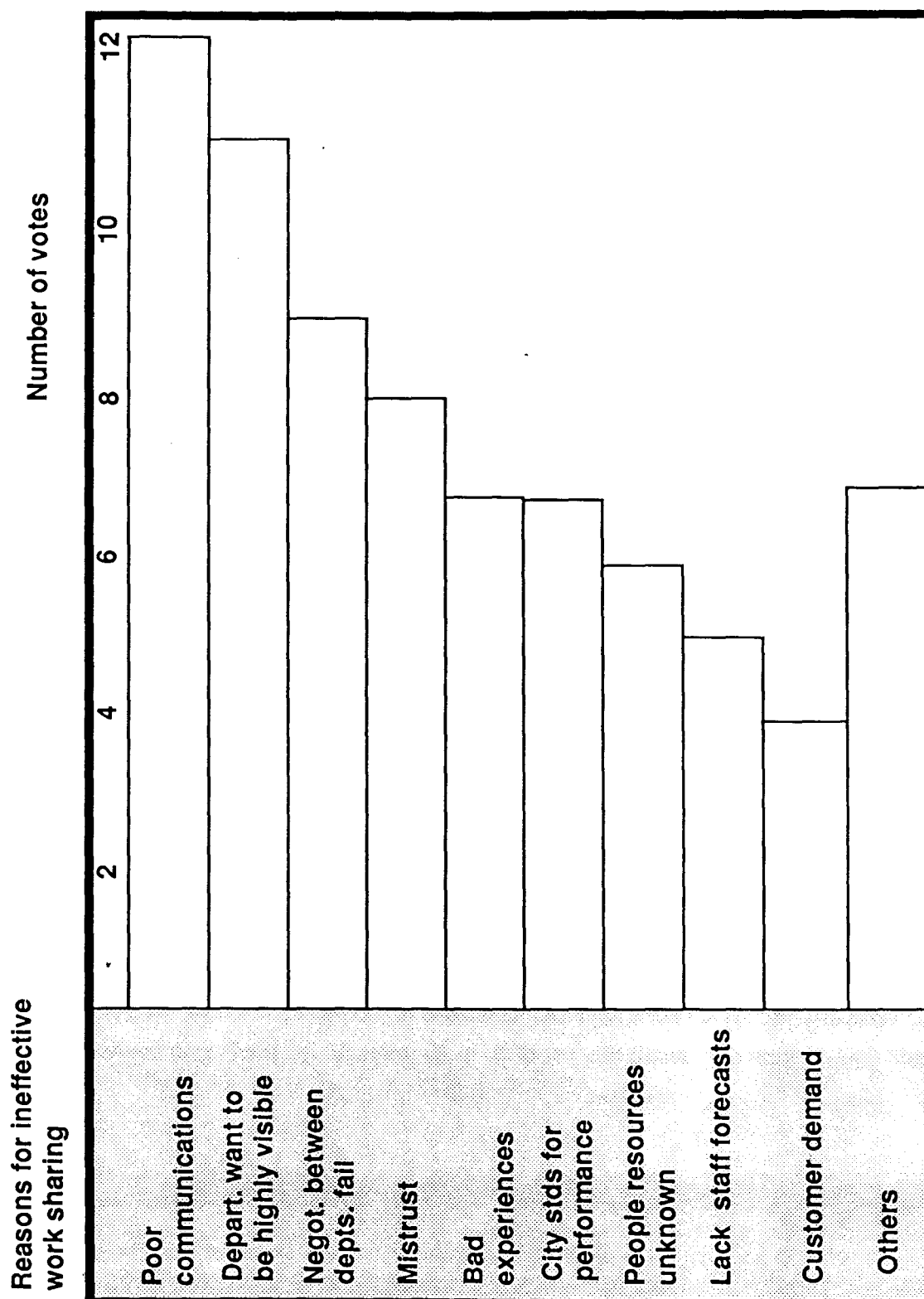
One of the first steps after identifying the issues is to define the basic question: "Will the process (or product) improve as a result of my formulating and carrying out a particular strategy?" You will need to choose certain factors for study, vary these factors in a controlled fashion, observe the effects of your actions, and make a decision based upon the results.

Choosing the factors to be studied is an important step. Often, experiments are based on two or three factors selected by technical personnel. The risk is that they may overlook other important factors or the interrelationships between the selected factors and other variables. Again, use the vertically-integrated team approach described earlier. Brainstorming the potential variables with this type of team may result in a list of 20 to 30 items. Using the Pareto method, a consensus can be reached on the most important variables to be measured.

Key Measures

Important criteria for measuring the key variables are that they should: 1) be directly related to meeting a customer's needs, i.e., driven by the needs of the downstream customer; 2) are

FIGURE 11
PARETO DIAGRAM



measures of quality; and 3) be part of a regular, systematic feedback system with data to tell you if you're meeting the customer's needs. The measures may well change as we learn more about the process and the customer's needs.

The variables to be measured can be counting or rating variables, or both. A counting variable might be the number of drafting errors per sheet of drawings. A rating variable could be the severity of the error. Rating variables tend to be subjective but can still provide much information. If we find the rating variables to be moving in a positive direction over time, we can conclude that there has been a positive change. For errors on plans and specs, a rating scale could look like:

- 9 - Very serious error creating a hazard to people, a functional failure, or a design that can't be built.
- 7 - Serious error that would probably use a hazard to a person not familiar with the project; likely to cause a functional failure; certain to cause substandard performance, increased maintenance, or undue construction effort.
- 5 - Moderately serious error which could possibly cause functional failure, construction problems, substandard performance, increased maintenance, or extra construction effort.
- 1 - Not a serious error because it causes only minor deficiencies in appearance.

After defining and choosing the variables, a baseline prior to any changes must be established. If historical data are available, they can be used for the baseline. For example, if the number of hours spent on each sheet of plans for initial preparation and rework have been logged over a significant period of time, a baseline can be established from existing data. If data related to our variables are not available, we need to measure them over a specified period of time to establish a baseline before making changes. Changes can then be made and another set of data collected to compare with the baseline to evaluate the effects of the changes.

Operational Definitions

It is important that the variables be defined. This seems obvious, doesn't it? However, a variable as apparently straight forward as "drafting error" needs to be defined. Two people may have different definitions and get a different count of errors on the same sheet. For example, a definition for drafting errors could be: omission of all or part of a detail, incorrect dimension, inconsistent cross-reference, disagreement between drawing dimension and product schedules, or sheet format and standard drafting guidance (i.e., line weights, lettering) violation.

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Example Measurements

Although services such as government may not appear as amenable to measurements as manufacturing, there are several measurements which can, and have, been used in TQM programs. These include:

- Cost of drawing/specification rework after final check.
- Number of inconsistencies between policies and final procedures.
- Cost per drawing by a drafter, circulation to a library patron, resolution of a drug case, child in a recreation program, EMS run.
- Amount of staff overtime.
- Number of citizens requests for information.
- Change orders, expressed as percentage of project construction costs.
- Ratio of final construction cost to estimated construction cost.
- Number of times a document is changed after it is issued.
- Ratio of departmental cost to total city budget.
- Length of time it takes for a staff member or citizen to get an answer to a question or suggestion for an improvement.
- Number of schedule milestones missed.
- Turnover rate of staff.
- Claims, settlement, and litigation expense.
- Success rate on grants submitted.
- Internal and external customer rating of services.

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