

Organizational Renewal— Tearing Down the Functional Silos

AME Study Group on Functional
Organization

Some say that the typical U.S. corporation never was competitive. Tom Peters, co-author of *In Search of Excellence*, says that American dominance of the world's markets during the three decades following WWII was nothing to brag about. He points out that Americans actually dominated through default. There was no real competition as we know it today, and consequently U.S. companies grew fat, happy, and complacent. We thus felt little pain and little compelling need for significant change.

In all too many cases, the organizational problems are still there—still weakening a company's ability to become a world-class competitor. In the February 15, 1988 issue of *Fortune*, Ross Perot stated his perspective of GM's current organizational problems and what he would do to overcome them. He painted GM as a classic victim of its long-standing bureaucracy.

Companies restless about their form of organization are increasingly doing something about it. IBM is reorganizing to take "Big Blue" closer to the customer and to cut product introduction times. Digital Equipment CEO Ken Olson visualizes leaving the environment of management command and control for one of organizational networking. Motorola refers to managing the white spaces in the organization chart. The common factor in these and many other companies is combating "the func-

tional silo syndrome," as AME has chosen to label it.

What is the Functional Silo Syndrome?

The classic functions of a manufacturing company are production, engineering, marketing, accounting, finance, personnel, and perhaps materials. There are many more: R&D, manufacturing engineering, maintenance, traffic, legal, and the like. Divided from each other, these functions become isolated and a tall hierarchy develops in each one. This overall organizational effect was dubbed "the functional silo syndrome" by Phil Ensor (formerly of Goodyear) and the name caught on.

As shown in Fig. 1, functional silos isolate top managers in separate lofty perches at the top. Downward communications are very strong, but bottom-up communications are weak, and much modified by all the information shoveling and problem slinging by the middle levels between. These functional silos have spawned a host of other colorful management phrases: "foxhole management," "towers of Babel," and "hardening of the categories," to name a few. Usually this form of organization is simply described as a bureaucracy.

One set of silos exists at the plant level and another set at corporate headquarters. (There was not enough space to also depict divisional headquarters.) The union represents a silo isolating the workers at a distance greater than that separating most of the other functions.

Why Is the Functional Silo a Serious Problem?

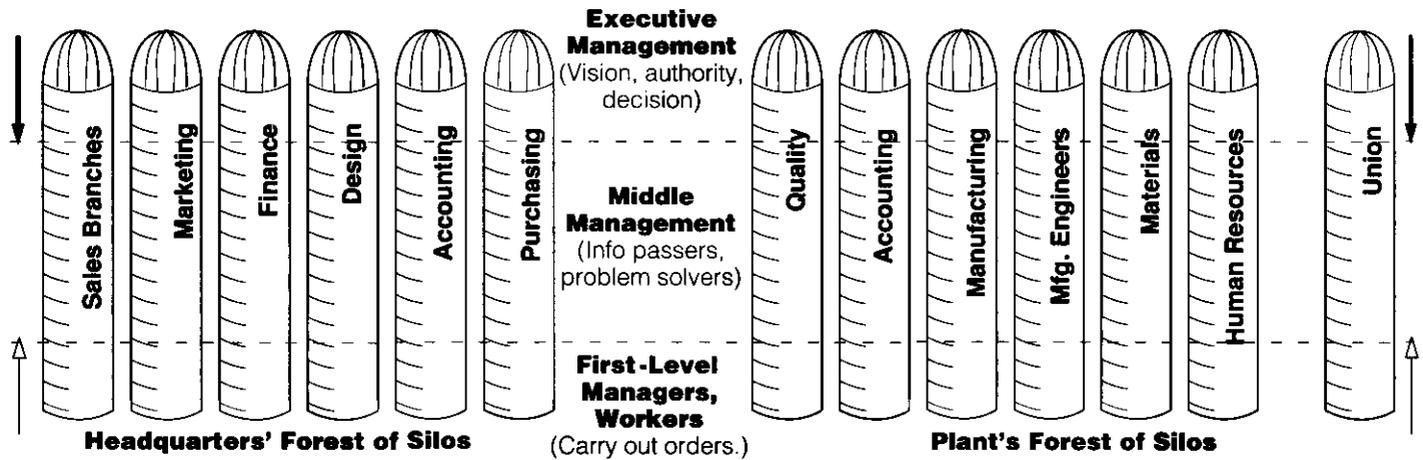
Bureaucracies have been around a long time. Their well-known frustrations have been the subject of several generations of graffiti and workplace cartoons, but work gets done. Life goes on. Why get worked up about it now?

There are good reasons for functional organization. Technical proficiency comes from specialization. That is a major reason for keeping job shops organized by similar-process departments. Expertise for a given set of problems is concentrated in one place, and surely technical problems will be more quickly solved by the proper experts zeroing in on each of them.

Arguments for specialization are powerful. We do not ask tax advice of the plant nurse, nor expect an accountant to repair a robot. Skills can easily be stretched too thin. For instance, the added skill demanded of a machinist changing from operating a single type of machine to working a cell having several types of machines is easily underestimated.

However, the problems of specialization more and more limit our technical and economic progress, and perhaps our development as people. People in large companies often spend a career in one silo—engineering, sales, finance, or whatever. Some careers are even more narrow: collections specialist,

The Functional Silo Syndrome



Note that the paths of energy and activity flow mainly from the top down. There is very little bottom-up feedback (participation) and inter-functional communication is difficult. The union is even further isolated.

Fig. 1.

industrial hygiene director. Only a monstrous revenue generator can afford everything from operations research departments to state legislative affairs assistants. It all adds up to a lot of overhead. Overhead needs to be spread around, so the functional specialist organization demands economy of scale. Bigger is better. That seems to be a strategy harder and harder to carry off.

TQC, JIT, and EI Counteract Functional Silos

Quality starts by studying the customer, and the customer is the next operation. Responsibility at the source limits the responsibility of a staff person. Operations linked in sequence should promote visibility so that communication between the action people is easy. Immediate feedback on quality problems violates the chain of command rules of silo structures. Everyone recognizes the problem of restrictive job descriptions.

Parts of some functions, such as inspection, are no longer needed. Others, such as maintenance, should shift more routine work to equipment operators. Design engineers should work directly with customers and suppliers—and yes, even workers. Workers can begin to react autonomously to problems if they are developed for it, and *permitted* to do so.

These familiar precepts of the new manufacturing bump into trouble with the old bureaucracies. An energetic plant workforce bent on improvement thinks in terms of hours and days to make changes. Their support groups think in terms of weeks, months, or even years.

Decisions-in-Process Inventory

Companies have found that cutting materials and supplier leadtimes demands cutting the leadtimes for communicating and deciding between different functions. For instance, R&D discovers a new idea, marketing determines its feasibility, engineering designs a commercial version, sales begins to promote it (often too soon), purchasing finds suppliers, and so on—much of it done by sequential decision-making by each of the functional silos, which takes time. The concept of simultaneous engineering covers only part of a complex web of activity which should be executed more in parallel than in sequence. Otherwise a competitor is first in the market with a better-integrated total offering.

One problem of deep functional specialties is communicating between them—sharing a common view about the business and its customers. Silos create their own jargon and internal status systems. Decisions between them must be negotiated, and sequential review by specialists adds time.

Reducing work-in-process inventory reduces material's leadtimes. Reducing "decisions-in-process" inventory reduces many other leadtimes. Decision-in-process inventory (DIP) is one of the pungent contributors to the contents of functional silos.¹

Flexibility—speed of response—as well as cost and quality appear to be more and more vital in serving the customer. Product life cycles are decreasing.

An Outsider's View

Suppliers and customers dealing with an organization's forest of silos can become frustrated, referring to their experience by another hackneyed management phrase, "getting the runaround." Purchasing departments regulate the relationship of supplier companies with other departments—or even stifle it. Customers with a quality problem meet with a customer representative, not with someone who designed the product or who made it. They sense that they are dealing with a house divided against itself.

Allegiance to Specialties

Specialization, the beginning of functional silos, seems natural. As a small business grows one person must sell, another build, and someone else buy. Soon, job descriptions and divisions of responsibility (turfs)

The View By Employees Inside Functional Silos

- We are confused about the organization's key priorities. Conflicting forces tug at us so we feel no real sense of direction.
- Very little straightforward business information is shared. We do not know the real problems. Thus we just do not know what we should work on.
- We do not have a common set of goals everyone understands and supports.
- We are "so distant" from the executives who make the operating decisions about our jobs that we have no feelings of trust or influence.
- We seldom interact with anyone from another function. We do not really know what they do. We just try to stay out of trouble with our own bosses.
- All the big bosses really care about is numbers.
- Our jobs are so narrow, repetitive, and boring that most days it takes a major mental effort just to go to work.
- There are so many levels (false layering) and job classifications that it's a full-time task to sort out all the status symbols.
- We never seem to take time to find the real causes of problems. We just error-detect, error-correct.
- We rely on legalistic rules rather than a set of broad operating principles everyone should live up to.
- We need leaders who teach, care, and set good examples. *What we have* is authority-oriented bosses throwing their weight around.
- We continually hear about problems our customers have. Why can't we meet with them ourselves to learn what we are doing wrong?

Everyone has seen the trite signs at work stations: "Don't ask me; I just work here." "You want it when?" What messages do the signs in *your* plants and offices convey?

Fig. 2. "Us-versus-them" feelings among silo-dwellers.

seem the only way to avoid confusion. After a time these specialties become deep and technical. They become professions.

All of us in the study group regard ourselves as professional. AME has appealed to the spirit of professionalism in *Target* and elsewhere. Unfortunately, middle-level personnel may have more allegiance to a profession than to the company. The profession seems more secure, and perhaps a nobler cause.

Among blue collar workers — another set of silos — professions are more likely called crafts, some made more distinctive by allegiance to a special union. If one cannot become a craftsman or technician, there is at least status and security in a job description. Many managers and staff members find this situation all too familiar. The blue collar-white collar distinction is only one of the

sharpest of a host of great US-THEM relationships which exacerbate the communications problems. However, the differences between marketing and production could be as strong as those between blue collar and white collar employees. From these differences comes a profound depth of feeling about responsibility and control — turf wars at the extreme. Fig. 2 summarizes many of the feelings.

Because of their narrow perspective from inside their own silo, many people cannot genuinely comprehend the ideas of JIT/TQC. Others comprehend in general, but not that their specific silo — and they personally — must relinquish control of precious turf.

Resistance to Change

The organizational consequences of the new manufacturing are easily regarded as heresy. Precepts of professional pride shatter in every silo. Production controllers lose con-

trol of production. Quality controllers lose "control" of quality. Accountants no longer "control" costs either, but must restudy new processes to set up new, simple cost systems for them. Shattered with all this are the performance measures used to determine status inside silos, and used as weaponry in the inter-functional fratricide between them.

Giving up control is not easy. Some resistance to change can be attributable to personal "power lust," but much more to fear of losing position or to fear of the chaos that could ensue. For instance, no controller wants to lose the basis for cost reporting; it is even possible to go to jail as a result. The momentum of the existing system largely continues through customs, measurements, penalties, rewards, and status — the trappings of the corporate culture.

And it is comfortable. As long as incumbents feel that five-percent-per annum improvement in existing methods will preserve competitive position, there is no need to undergo the pain of cultural upheaval. Order-of-magnitude performance goals demand change-of-order corporate organizational revolutions.

In this situation, managers of inspection or inventory control are not going to be comforted by having their function described as not adding value. Their situation is even more grim with two children in college, a hefty mortgage, and a compensation package that depends on how many people and dollars one manages.

The Problem

That there is a severe problem is apparent to almost all companies making a serious effort with JIT, TQC, Employee Involvement, and other integrative change — by whatever labels these corporate thrusts are named. Just flattening the organization charts is insufficient. Attitudes must be changed. New behaviors learned. Personal capacity and responsibility expanded. Teamwork genuinely developed.

The existence of the problem can no longer be denied. The lead-

ing Japanese companies have made little secret that their methods depend more on "peopleware" than on hardware or software. Proponents of CIM are recognizing that the issues are not ones of creating a technical nirvana, but basic ones of management values and human behavior.

All recent AME workshops have dealt with employee involvement. Most concentrate on the necessary management changes. Sooner or later the problem of functional organization manifests itself in some form. It is a huge boulder in our river. We have enough experience to be certain of it.

Many of the reasons and ramifications are apparent in previous *Target* articles. Some of these are listed in the annotated bibliography of Fig. 3, which includes only AME literature. The problem is not new, and many, many other people are working on it.

There are two somewhat different definitions of functional silos. One is derived more from the technical perspective—that everyone cannot do everything, but that specialization carried to excess stumbles carrying its own bureaucratic weight. That view is expressed by Scott Myers' definition in Fig. 4.

The other view, also in Fig. 4, is that much of the motivation for structure and silos is managerial urge to exercise control. That school of thought is summarized by Phil Ensor.

We Encourage Your Progress Reports

AME has established a study group on functional organization. We have discovered that we share similar feelings on the subject; some of the members have the same ugly scars of experience. We know very little—enough to suggest direction, but not enough to pose as the fount of knowledge on the subject—and that despite many decades of manufacturing and human relations experience among us.

We would like you, our Target readers and fellow AME members, to write us on this subject. We have enough stories about the evils of the functional silo syndrome. We need

The Functional Silo Syndrome—

Annotated Bibliography of References from AME Sources

1. "The Functional Silo Syndrome," Phil S. Ensor, *Target*, Spring 1988 (one page overview)
2. "In the Process of the Challenge," Kiyoshi Suzuki, *Target*, Spring 1988. ("If a small number of people monopolize skills, knowledge, and authority, we have underutilized peoples' potential capability.")
3. "President's Message," Ken Stork, *Target*, Winter 1987, Spring 1988, and Summer 1988.
4. "JIT Purchasing at Xerox," Pierre Landry and Larry Connorton, *Target*, Winter 1987. (Cross functional commodity teams were largely enabled by the Leadership Through Quality process, briefly described.)
5. "Developing Flexibility for Excellence in Manufacturing," Robert Hall and Jinichiro Nakane, *Supplement to the Proceedings, 1987 AME Annual Conference*, PP. 30-50. (See also the article in this issue of *Target*. One major conclusion is that to promote flexibility, that is, short leadtimes in all activities, two organization requirements are: 1) A strong corporate culture, and 2) A fluid organization structure.)
6. "Creating a World Class Workforce," Phil S. Ensor, *Target*, Fall 1987. (The story of converting from a six-level hierarchy to area management teams in the Lawton, OK Goodyear plant.)
7. "Every Employee a JIT Manager," M. Scott Myers, *Target*, Spring 1987. (Creating factory jobs with responsibility for as many phases of the business as possible at the workstation level, doing away with narrow job descriptions and childish relationships.)

These articles touch on the subject most directly. In addition, most of AME's workshop reports for the previous two years have featured the broadening of worker responsibility and management perspective as a key factor in a plant's evolution toward JIT/TQC.

However, insights on this subject did not begin with AME's interest in it. An enormous body of behavioral literature touches on the subject under such names as "socio technical systems" (STS), a popular name for it in Europe.

References are in the management literature of every country from Finland to Australia.

Fig. 3.

your stories relating how to overcome it—corporate sagas or small incidents. The contribution will be appreciated. We believe that simple awareness of the problem in somewhat uniform terminology and common perspective will do a great deal to stir the creative juices. Please send your letters to the Target editor.

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What To Do About It—Silo Smashing

The first step is recognition of the genuine scope and depth of the overall problem. It involves technology, strategy, and human values. Without this critical insight, the reader is unlikely to grasp why solutions

The Functional Silo Syndrome: Two Definitions

M. Scott Myers

1. *Separate identities* for separate functional specialties. Loyalty to function first; company second.
2. *Closed cultures* for each silo. Internally used "buzzwords" make it difficult for outsiders to comprehend silo activities.
3. *Competitors* are viewed as other silos almost as much as other companies. At worst, it results in blame passing and negative politics by ladder climbers.
4. *Stymied learning* results from siloists dissociating themselves from problems to avoid blame. As an organization, the forest of silos has a learning dysfunction.
5. *Protected sovereignty* has become a silo's way of life. Internal measurements and rewards perpetuate it. Horizontal integration is seen as a threat—unless another function is absorbed.

Phil S. Ensor¹

1. *Organizational structure* deeply layered on both the horizontal and vertical planes.
2. *Management style*, top-down and authoritarian. Obtaining and exercising control is a prime managerial motivation.
3. *Subordinate jobs designed* to be narrow, repetitive, easy to control — and boring. People as interchangeable parts.
4. *Management-employee relationships* that are contractual, legalistic, distant, non-trusting and often adversarial.
5. *Performance expectations* imposed by top management, questioned by middle management, resented (or considered silly) by workers and contested by unions.

¹Phil Ensor adapted this framework from Prof. Richard E. Walton of the Harvard Business School.

Fig. 4.

are so long term and difficult. There are no pat formulas or quick fixes for *changing us*.

Neither the problem nor any solutions can be described as superficial. Organizations must dig deep — clear down to bedrock values that underpin operating philosophies and corporate cultures. Those fundamental values must be placed under sincere, careful scrutiny to judge their capability to fuel the engines of change into world class manufacturing. Countless roadblocks, including deeply-rooted personal biases and well-established corporate norms (sacred cows), lie in wait to derail any superficial approach. Some of

these barriers will not be anticipated. This is no pastime for the uncommitted!

Cultural changes are painful. Few organizations plunge into them without seeing that the pain of change is less than the pain of not changing. Example: Organizational extinction is a clear possibility.

The study group could only agree on three broad general features of a profound change in corporate cultures:

1. *Establish a vision* of a radically different future. This must be clearly stated in terms of an overall organization, so every "function" can contribute. One way to do it is by setting some "stretching goals," a few examples of which are shown in Fig. 5. These

kinds of goals are familiar to JIT/TQC (Just-In-Time/Total Quality Control) converts at the plant level. Goals such as zero warranty returns apply to more than a plant, and are better overall goals. **TOP MANAGEMENT MUST LEAD THE EFFORT TO ASSEMBLE A VISION.** Otherwise each function establishes its own, and they will not agree.

2. *Mobilize all the workforce* to accept this vision and develop change strategies to work toward it. That is, management at any level cannot change another person for them. They must change themselves. However, along the way, the management must clarify what a new organization should look like. One year from now a business team will be working with some of our suppliers; in two years, business teams will work with all of them. In six months, we will have plant operators visiting customers. In a year, all of our new product teams will be multifunctional. In 18 months, all employees should be able to define the needs of their internal customers in practical terms. Without some kind of *specifics*, everything turns into idealizing without any results. But the people — employees at every level — must take ownership in the new culture if it is to work. Like jazz, you have to feel it to play it.

MANAGEMENT MUST "ROLE MODEL" THE NEW BEHAVIOR, or else it all turns into a fad. It is a strange paradox of having to exercise strong leadership, the end result of which is a more autonomous workforce in all stations, a combination top-down, bottom-up process. A well-developed transition strategy is critical. The nature of the strategy depends on where each organization has come from as well as where it is going.

3. *Institutionalize the results* by a variety of means. Performance measures are important to change. They remind us of the old way of life, but it is a mistake

to think that people change attitudes just by instituting new performance measures and reward structures. Change to team goals first. Institutionalizing the new value system is most important.

Institutionalizing involves changing the details of systems that affect the roles and attitudes of people. The top-down, narrow performance measures must go; they perpetuate "silo-vision," which inhibits cross-functional vision. For instance, change the functional-based performance measures (like efficiency and engineered labor standards for manufacturing, or price standards for purchasing.) Part of the problem is that the bosses control top-down with these measures, and part of it is that everyone from workers upward is denied breadth of vision.

Training is essential. It is especially effective if the trainees learn to do some of the training, but this approach is frequently overlooked as too expensive. Changing the selection process for new employees is another approach. Breaking up the old hierarchy structures is a third. Create business teams, area teams, development teams, or whatever is appropriate in their stead.

Troubleshooting the transition process is also vital. Determine which parts of the culture (as it then exists) are not fulfilling the new objectives. Repair the damage and continue. (In the early, shaky stage, one sour inci-

"Stretching Goals" Examples

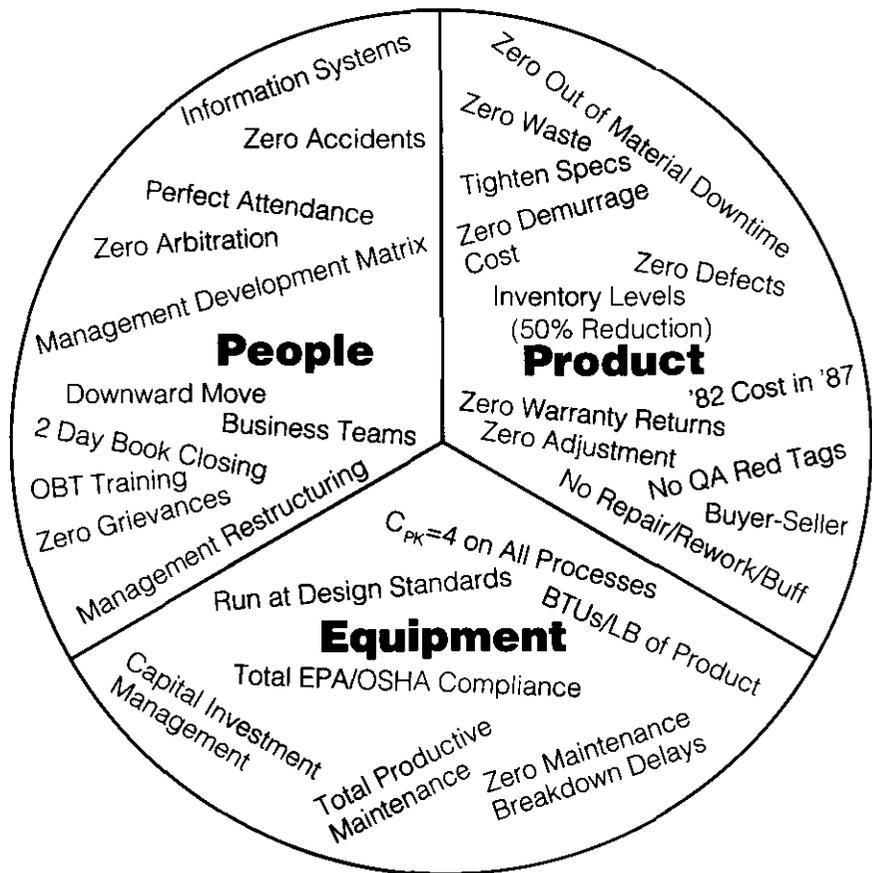


Fig. 5. Total system approach.

dent with a technocratic manager reverting to type and several months' trust-building efforts are undone. Later the organization will not only withstand this, but take corrective action with the manager.)

Beyond this point, the study group could not agree on many gen-

eralities of the process, and there is considerable difference in the emphasis on various ways to effect such a momentous revolution. We can only recreate a couple of examples, parts of which have been seen in previous *Target* articles, but this time focusing on them from a different vantage.

THE GOODYEAR MODEL (Start at the plants)

By the mid-1970s, the U.S. tire industry was confronted by the European introduction of the radial tire, the beginnings of the global market, the entry of a number of excellent off-shore competitors, and a long industry-wide strike by the URW. "The handwriting was on the wall," so to speak. Goodyear executives realized that their number one status in the global tire market could easily

slip away. The giant old bureaucracy had to literally reinvent itself.

Throughout the corporation, the "inverted U" functional relationship displayed in Fig. 6 was destroying the potential to jointly innovate and solve problems. Where to begin? Since manufacturing cost and quality were the biggest problems, Goodyear began the revolution in plant operations.

With over 100 manufacturing plants throughout the free world, management realized that:

- A corporate strategy had to create

the needed vision and consistency for the overall effort.

- Grass-roots (plant-level) success stories had to first emerge as models for the rest of the corporation to learn from and emulate.

The Corporate Perfection Strategy

The goal was to "overhaul" virtually every aspect of ongoing plant operations. World-class products could only be manufactured in a

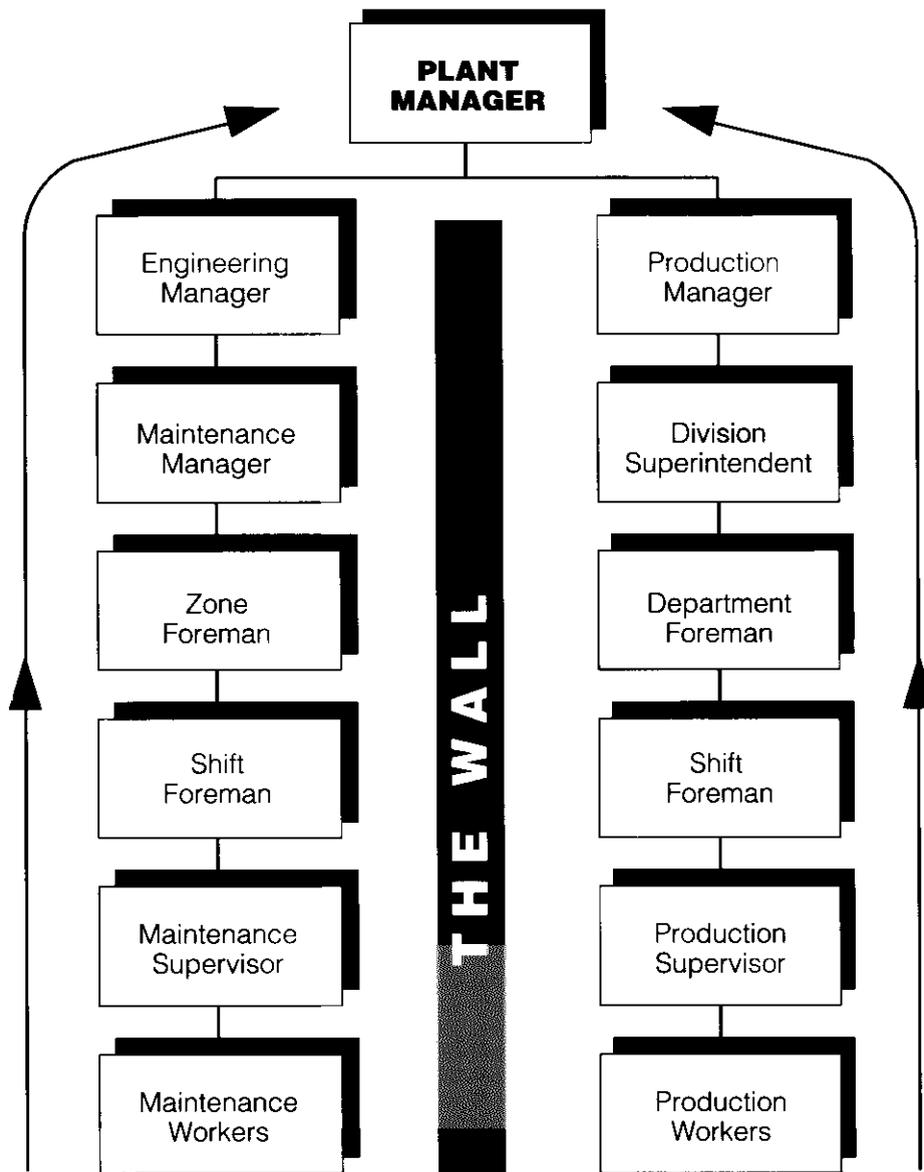


Fig. 6. Engineering and production functions isolated in their own separate functional silos.

total world-class environment. World class was defined as the best quality in the world, profitably marketed at a highly competitive price. It was thus determined to establish "perfection standards" for the people, the product, and the technology. This total-systems approach which underpinned Goodyear's Corporate Perfection Strategy is very similar to the "stretching goals" shown in Fig. 5.

Goodyear used its Lawton, OK plant, opened in 1978, as the laboratory for building a perfecting organization, a model for the rest of the company. Much of the Lawton story

has already been described in the Fall 1987 *Target*.

Vertical and Horizontal Integration

An early step taken at Lawton (and subsequently applied at other locations) was to overcome the counter-productive functional separation between the engineering and production groups on the factory floor.

The solution, diagrammed in Fig. 7, involved integration on both the vertical and horizontal planes. A new job was created. The new *Area Manager* job combines the Shift Manager and the Supervisor on the vertical plane, and combines the Production and Maintenance functions on the horizontal plane. This complex undertaking required exten-

sive planning, multi-level involvement and training. However, the results were worth it. People commenced behaving like allies rather than adversaries.

Enter The Business Team

Problems were still being solved and decisions made at too high a level in the organization. The various functions were still behaving like "they" were Goodyear!

The response to this key shortfall was an important piece of the Corporate Perfection Strategy. Corporate planners laid out the vision of another step toward the creation of a unified organization—The Produc-

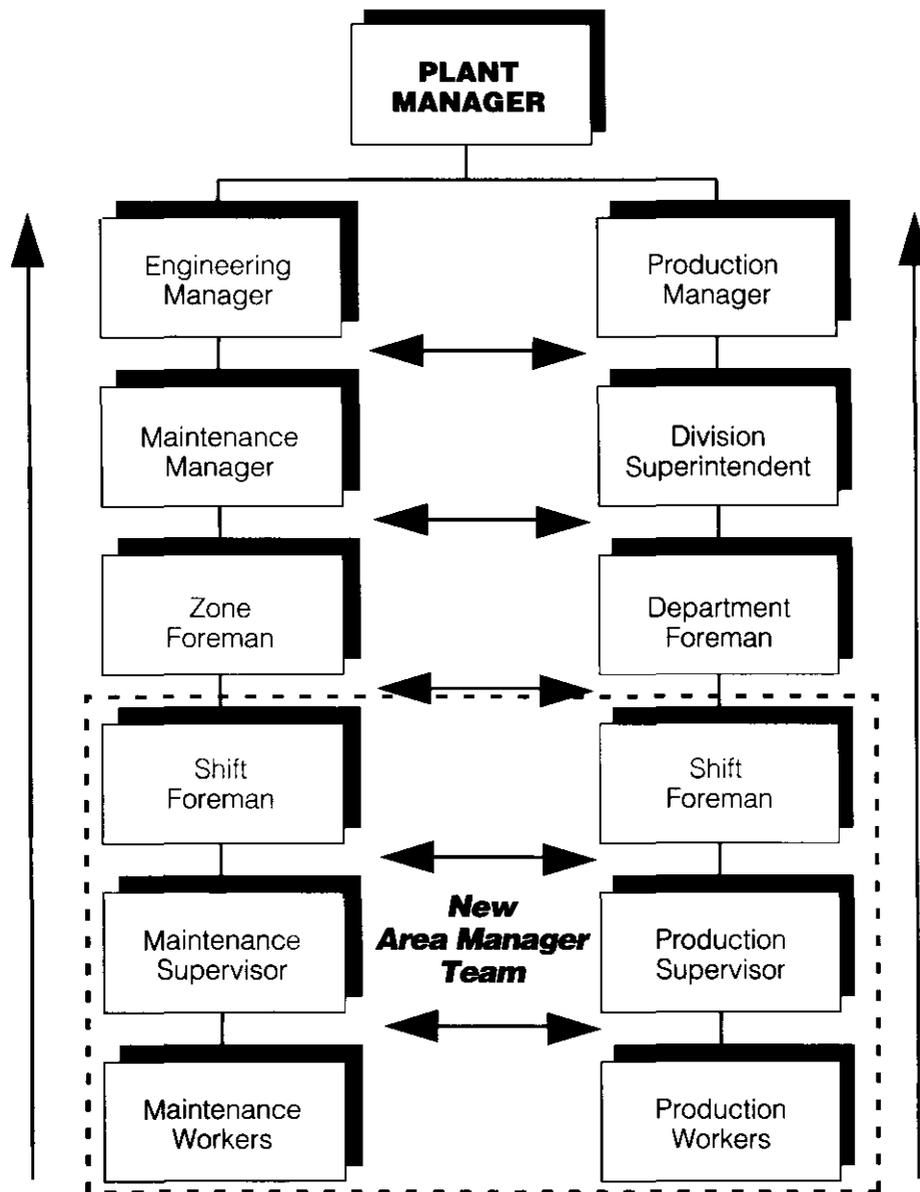


Fig. 7. Engineering and production functions that are in a mutual support mode.

tion Business Center. Note in Fig. 8 how this innovation linked the entire organization and focused on the productive effort. Matrix management complexity was not added to an already deep functional organization. The business teams created a new set of organizational relationships and integrative behavior. Over time, six levels of rigid management should reduce to three in a very fluid form.

The Production Business Center Teams set objectives, make business plans, and allocate resources as a team, and higher level management holds the team responsible. The teams "sell" their plans to

the plant managers and functional staff managers. No longer do functional differences build up into major campaigns for allocation of the same resources.

The advantages of the Production Business Center have made themselves felt in some powerful ways. The plant's functional chiefs are quick to say that never before have they been so completely involved in "the guts" of what is going on—their staff people report on a dual basis to both their functional head and the Production Business Center Manager. The Business Center Teams construct their own business plans and are held accountable for the outcomes. They create their own requests for resources and

take them "as a team" to the Plant Manager's Staff Group for support. The Area Manager teams have a close up team model to learn from. The Plant Manager Staff Group has a model to learn from. In this environment, the old "we-they" relationships don't "cut it" anymore!

What next? Much more needs to be done creating and tying in staff support teams. Also, production people need to be made more knowledgeable, confident, and comfortable with the technology. People must literally be placed in charge of technology. In the meantime, you can bet, Goodyear is working on it!

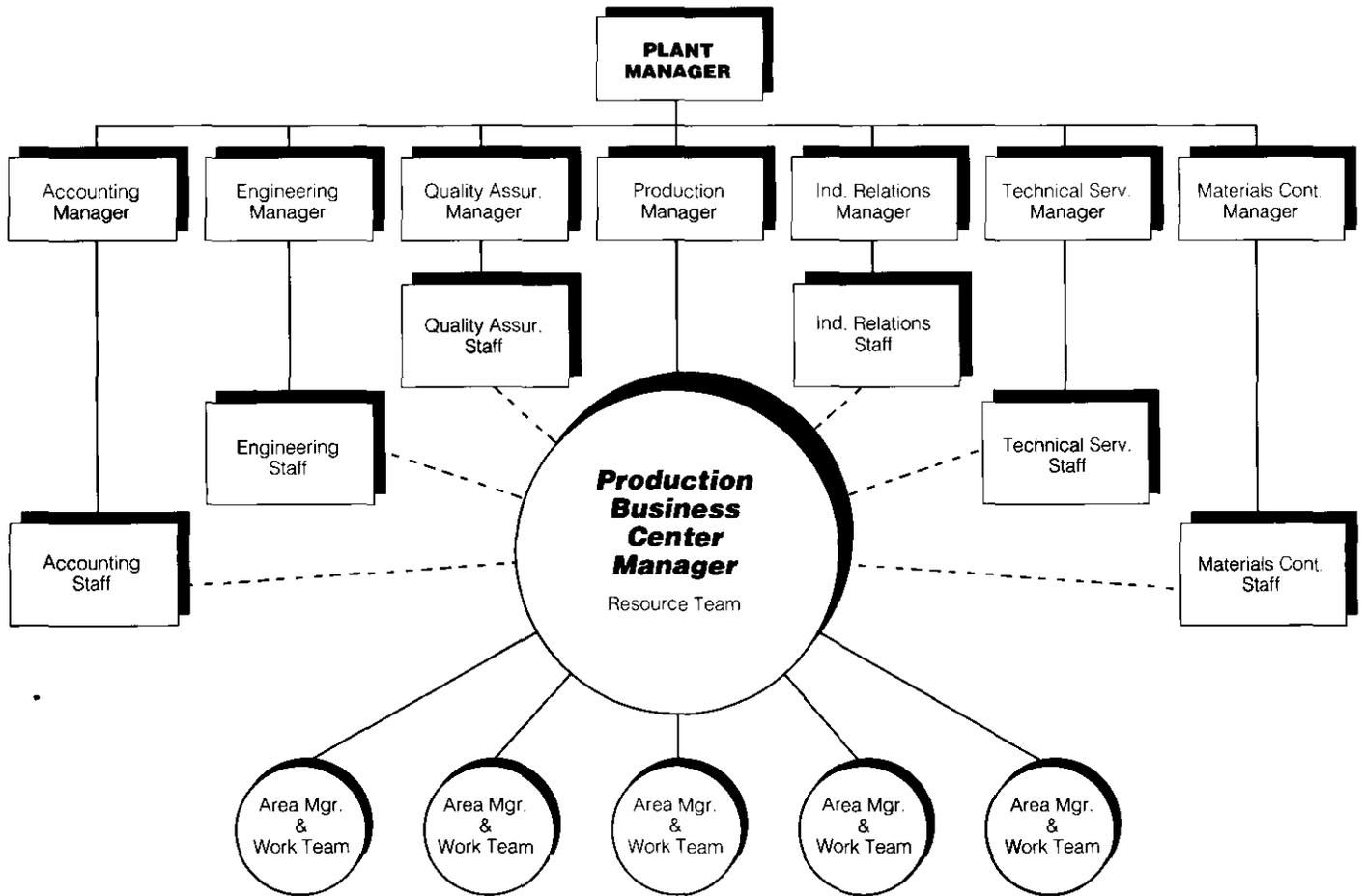


Fig. 8. Illustration of how production business center and area manager teams work with four vertical levels and promote valuable horizontal integration.

**THE XEROX MODEL
(Start at Corporate)**

While Goodyear initially focused its renewal effort within its own factories, Xerox had to obtain results from suppliers without delay, and suppliers scattered throughout the world were managed from corporate. Eighty percent of Xerox's cost of goods sold is purchased material, whereas Goodyear basically builds a tire from raw material. The Xerox purchasing story is in Winter 1987 Target.

Xerox developed the goals and motivations for its Materials Management Strategy through competitive benchmarking, discovering the performance measures and methods of the best companies in the world with operations relevant to Xerox. Then the operating goals for Xerox and its suppliers became simple: See what others have done and be the best you can be.

Inside Xerox, the change is powered by "Leadership Through Quality." It began with David Kearns, the CEO, and moved top-down to break up the functional barriers between corporate groups.

The premise of Leadership Through Quality is that all parts of the Xerox organization should concentrate on the external customer. Customer satisfaction is the number one business priority. Everyone should concentrate on the goal of establishing customer satisfaction with all new Xerox products. (Copiers are short life-cycle products.) This is a three-part goal:

1. *Introduce quality products with the world's best support system.*
2. *Improve the quality of the product fleet.*
3. *Foster lasting business relationships with customers.*

The purpose of the new Xerox organization is to focus the entire organization on keeping the external customer satisfied. The traditional

pyramid diverted too much energy to keeping the separate hierarchies of vertical managers satisfied. Daily customer contact starts with the branch sales and service offices. Each District Business Manager has authority and accountability for all business practices — sales, service,

Xerox Organizational Focus on External Customers

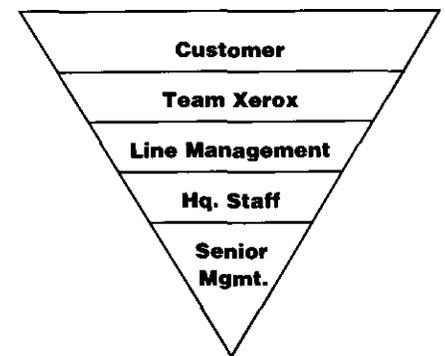


Fig. 9.

Xerox Customer-oriented Quality Improvement Process

Diagram of general Quality Improvement Process:

Example: Xerox's rollout of TQC to Suppliers

1. Identify output.	Supplier development to world-class performance by defining and implementing TQC programs
2. Identify customer.	Xerox Commodity Team Managers (Primary) Supplier Management (Secondary)
3. Define customer requirements.	Commodity Team: Suppliers should achieve quality, cost, and delivery benchmarks. The supplier's CEO should <i>commit</i> to implement TQC. (Not a program dictated by Xerox.) Applicable to different kinds of suppliers Suppliers: Universally applicable to the supplier's total business. Flexibility: Acknowledgement of supplier's prior training Minimum disruption Minimum cost Xerox to provide technical support
4. Translate requirements into customer specifications.	<i>Specs:</i> At least three days' training. One day per week — three weeks. Elicit commitment from CEO. Develop and certify resources (trainers) inside suppliers. Training should roll out to <i>all</i> employees.
5. Identify steps in work process.	PERT-style flowchart. Define curriculum content. Prep material. Define a rollout strategy. Identify and secure a consultant. Prepare a business proposal; get funding approval.
6. Select measurements.	Milestone checkpoints (Each of four phases). CEO's checklists on change in organizational behavior. Supplier progress toward benchmarks.
7. Determine process capability.	Pilot project: Review and revise. Review after each supplier rollout.
8. Evaluate results.	Three days was too short. More time needed for problem solving module. More time needed for supplier implementation training.
9. Provide output.	Revise TQC strategy. Do again. —

This example comes from Xerox's rollout of TQC to suppliers.

Xerox Commodity Teams are charged with developing Xerox's worldwide suppliers into a world-class manufacturing base. The program development team had to create a "total package" to cultivate TQC in supplier companies. Their approach has four phases.

- I. Orientation of the supplier's CEO and top executives.
- II. Training of CEO and top management on the supplier's site.
- III. CEO and top managers prepare their company's environment — 25 steps or exercises, such as:
 1. Develop a company vision.
 2. Company definition of quality.
 3. Define company goals.
 4. Devise a strategy on reward/recognition.
 5. Devise a supplier company rollout strategy.
 - ...
 25. CEO presents the TQC implementation plan to the Xerox Commodity Team.
- IV. Supplier company rolls out its own TQC training to its own company using its own people.

Fig. 10.

Xerox Leadership Through Quality Strategy for Transition to a New Culture

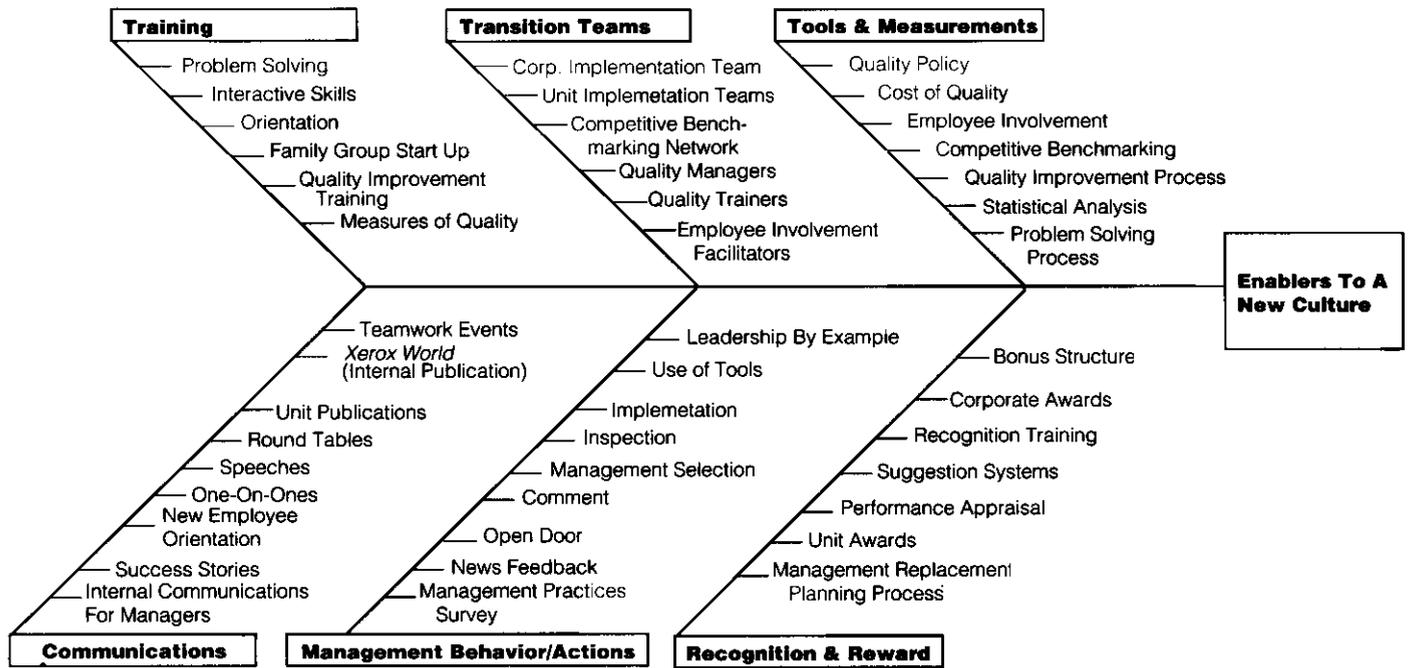


Fig. 11.

and administrative procedures related to *their customers*. The new policies presume that all employees will be obsessed with assuring customer satisfaction.

The basic concept of this is shown in Fig. 9. *Team Xerox*, not a collection of squabbling functions, deals with external customers and is charged with daily interpreting their needs. The longer-term, formal system to do it consists of direct contact, survey feedback, and letters from customers. In developing new products, people other than those in the branch offices talk with customers to get ideas.

Customer needs should be relayed through the organization. Thus began the idea of everyone also seeking their internal customers and defining their needs, translating the findings into specifications which can—and will—be delivered. The process for improving customer quality is diagrammed in Fig. 10. The same basic process used to identify and serve external customer needs is also used inside Xerox by staff and line management to identify and serve internal customers. The example outlined is from com-

modity (supplier) management, not the marketing side of Xerox.

In this way, Xerox promotes lateral communication within the organization. The functional hierarchies at corporate have been broken into commodity (supplier) management teams, product development teams, and customer service teams. The teams spread the voice of the customer even to the suppliers.

Xerox is far from finished with this upheaval in their corporate culture, for that is what Leadership Through Quality has thrust upon them. When culture changes, everything changes, down to the last detail of corporate life. Those who have not yet changed should. The fishbone diagram in Fig. 11 illustrates the factors Xerox internally identified early as "enablers" of the new culture. It is not a complete diagram—merely suggestive.

Some of the changes the LTQ revolution is still trying to make:

- From incomplete, ambiguous understanding of both external and internal customer requirements, to wide application of systematic methods
- From concentration on short-term, fragmented performance measures, to long-term goals attained

by attention to successive short-term objectives

- From error-detect, error-correct, to doing it right the first time
- From unstructured, individualistic problem-solving and decision-making, to more disciplined, participative approaches
- From a management style that instills fear of failure, to an open style with clear objectives and group solutions.

Four years into LTQ, progress is good, but far from complete, if such a state were possible. It is a slow, painful process that continuously needs reinforcement by senior management. However, Xerox has started. It is important that everyone else start if they intend to compete in perfect-quality, quick-response, short-product-life cycle manufacturing.

"Decisions-in-process" is a phrase borrowed from Dr. Charles M. Savage in "Preparing for the Factory of the Future," *Modern Machine Shop*, October 1983.

