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An Application of Performance Analysis in a Food Cooperative

Ione Milani
Western Michigan University

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A performance systems analysis was applied in a small business to diagnose problems and direct decisions in order to solve performance deficiencies of that organization. A "performance audit," as the approach is called, consists of analyzing an operating system from the most general to the most specific levels of vantage (i.e., levels at which a system operates). The levels of vantage for any system are: philosophical, cultural, policy, strategic, tactical, and logistic. At each level the actual performance was compared to predetermined standards called "exemplary performance." This comparison facilitated the diagnosis of the organization's deficiencies.

The study attempted to design an ideal model for the system, a health food cooperative, a nontraditional enterprise based on volunteer work from college students and community people. This model was based on the ultimate goals of the organization, which were to improve physical health and human interaction. Some indicators showed that the deficiencies could be attributed to a poor recruitment system as well as the lack of systematic contingencies for improving performance. Recommendations were given in terms of
designing a training system for managers, staff, and board of directors as well as assigning responsibilities to members of the cooperative after ensuring that they have had proper guidance, clear directions, feedback systems, and training programs.
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AN APPLICATION OF PERFORMANCE ANALYSIS IN A FOOD COOPERATIVE

Western Michigan University

Ph.D. 1983

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ACKNOWLEDGEMENTS

I wish to thank Drs. Dale Brethower, J. M. Keenan, and Jack Michael, members of the doctoral committee, for their support and assistance. In particular, I wish to acknowledge the exemplary performance engineer and member of my doctoral committee, Dr. Norman Peterson, for his invaluable assistance, guidance, and feedback in designing this study, as well as for his encouragement from the philosophical to the logistic level of my Ph.D. performance. A special note of gratitude goes to the Board of Directors and staff members of the food co-op, whose cooperation was essential for this study and whose attitude toward improving the co-op made this experience a pleasure. I would like to express my sincere appreciation for the financial support provided by CAPES (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior) from the Ministry of Educação in Brazil. I would like to thank my sister, Sr. Elvira, for her encouragement in completing this study.

Ione Milani
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CHAPTER I

INTRODUCTION

Human competence—engineering human performance to achieve maximum development of human potential—has been the ultimate goal of personnel in charge of human development in large and small organizations. Gilbert (1978) suggested that engineering competent performance should be based on a simple, useful, and coherent system that leads the engineer "to convert human potential into human capital" (p. 12). Gilbert developed a system for improving performance based on an objective analysis of the sources of incompetence. Rummler (1972) and Feeney (1972) also pointed out that failure to analyze problems in performance was a source of failure to solve such problems. Thus, performance should be analyzed as the first step in attempting to improve it.

Performance Audit

According to Gilbert (1978) the best way to find significant causes of deficiencies in performance is to start with general measures by analyzing the performance of the whole system, which provides a context for interpreting the performance of people. Such an analysis is called "performance audit" by Feeney (1972) and Gilbert (1978) and consists of identifying the expected accomplishments in a

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measurable way for the whole organization as well as for each member of the organization.

In order to know how to start, how to proceed, and what decisions must be made in a performance audit, Gilbert (1978) suggested a 6 by 3 table containing the 18 steps (6 levels of vantage and 3 stages of analysis). Levels of vantage are the different levels at which a system operates from the very general to the very specific. Table 1 is a performance matrix that summarizes a performance analysis, which is "the most general and valuable method of troubleshooting existing performance systems" (Gilbert, 1978, p. 110). It is a way to organize a point of view so that the highest goals and the lowest subgoals of a given system are described, analyzed, correlated, and the inconsistencies among them are detected. Such inconsistencies are the sources of incompetence.

At each level of vantage the analysis includes three stages whereby the following are identified for a given system or organization: (a) the models of accomplishments, (b) the measures of opportunity, and (c) the methods of improvements.

Models of Accomplishments

A performance system analysis or performance audit based on Gilbert's approach focuses on accomplishments instead of behaviors. Accomplishments can be defined as the results or outputs produced by the system or the performers. Behaviors or activities enacted in order to achieve the results are means, not ends. Performance should
Table 1. Performance Matrix

<table>
<thead>
<tr>
<th>STAGES</th>
<th>A MODELS OF ACCOMPLISHMENTS</th>
<th>B MEASURES OF OPPORTUNITY</th>
<th>C METHODS OF IMPROVEMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 PHILosophical (Human Identity)</td>
<td>Ideals - Ends</td>
<td>Integrity</td>
<td>Commitment to reach the standards set for the accomplishments</td>
</tr>
<tr>
<td></td>
<td>. Philosophy of Life</td>
<td>. How well performance is reaching the ideals</td>
<td></td>
</tr>
<tr>
<td></td>
<td>. Raison d'être of a system</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>. General accomplishments related to the quality of life</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>. Transcend culture</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 CULTURAL (Culture, The State)</td>
<td>Goals</td>
<td>Conformity</td>
<td>Policy</td>
</tr>
<tr>
<td></td>
<td>. Cultural values</td>
<td>. How well performance conforms to the goals</td>
<td>. Set of laws, procedures or rules for running an organized community</td>
</tr>
<tr>
<td></td>
<td>. General values related to a certain culture</td>
<td>. The degree of adherence to the model of values</td>
<td></td>
</tr>
<tr>
<td></td>
<td>. Fulfillment of ideals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 POLICY (Institutional Systems)</td>
<td>Missions</td>
<td>Worth</td>
<td>Programs</td>
</tr>
<tr>
<td></td>
<td>. Organization models</td>
<td>. Stake analysis</td>
<td>. Environmental programs (data/tools/incentives)</td>
</tr>
<tr>
<td></td>
<td>1. Cultural goal of the organization</td>
<td>1. Performance measures</td>
<td>People programs (knowledge/selection/recruiting)</td>
</tr>
<tr>
<td></td>
<td>2. Major missions</td>
<td>2. PIPs</td>
<td>Management programs (organization/resources/standards)</td>
</tr>
<tr>
<td></td>
<td>3. Requirements and units</td>
<td>3. Stakes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>. ACCENT test</td>
<td>. Worth - how much greater are the returns than the costs?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>. Overall accomplishments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 STRATEGIC (Job Systems)</td>
<td>Responsibilities</td>
<td>Value</td>
<td>Strategies</td>
</tr>
<tr>
<td></td>
<td>2. Major responsibilities</td>
<td>2. PIPs</td>
<td>2. Training designs</td>
</tr>
<tr>
<td></td>
<td>3. Requirements and units</td>
<td>3. Critical responsibilities</td>
<td>3. Incentives schedules</td>
</tr>
<tr>
<td></td>
<td>. Roles of the members of an institution</td>
<td></td>
<td>5. Selection systems</td>
</tr>
<tr>
<td></td>
<td>. Completion of missions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 TACTICAL (Task Systems)</td>
<td>Duties</td>
<td>Cost</td>
<td>Tools</td>
</tr>
<tr>
<td></td>
<td>. Task Models</td>
<td>. Task analysis</td>
<td>. Tactical instruments</td>
</tr>
<tr>
<td></td>
<td>1. Responsibilities of tasks</td>
<td>1. Performance measures or observations</td>
<td>1. Feedback</td>
</tr>
<tr>
<td></td>
<td>2. Major duties</td>
<td>2. PIPs</td>
<td>2. Guidance</td>
</tr>
<tr>
<td></td>
<td>. Discharge of responsibilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>. Knowledges maps</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 LOGISTIC (Implementation)</td>
<td>Schedules</td>
<td>Material needs</td>
<td>Supplies</td>
</tr>
<tr>
<td></td>
<td>. Resources needed to execute the tasks:</td>
<td>. Inventory of the material needs</td>
<td>. System to supply the needs</td>
</tr>
<tr>
<td></td>
<td>1. People</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Materials</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Facilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Expenditures</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Schedules</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>. Execution of duties</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
not be confused with behavior; instead it is defined as the whole transaction, that is, behavior and its results that may be seen as valuable accomplishments.

As opposed to accomplishment, behavior is often more difficult to measure satisfactorily because much of it is covert and not easily observed. Moreover, it is hard to specify exactly what behaviors are required for good performers since they may behave in many different ways in order to achieve the final product of a given job.

There are other reasons why the ideal model for a system or job should be described in terms of accomplishments rather than behaviors. Accomplishments may be related directly to the organization's goals; they can be translated into value for the organization; they can readily be agreed upon by a number of managers; and they adequately describe a wide range of seemingly different jobs.

The accomplishments or descriptions of the outputs expected of a given system or a given job are measured and evaluated in terms of quality, productivity, and cost required for worthy performance. Such measures translate the accomplishments into economic terms, and their true value is defined. Quality may be measured in terms of accuracy, class, or novelty; productivity may be measured in terms of rate, timeliness, or volume; material, labor, or management expenses are the cost requirements.

The level expected for worthy performance is called the standard or "exemplary performance" against which the current performance is compared. The exemplary system or performer is the best system or
the best worker—the one achieving the highest level of performance. Thus, the standards are not set arbitrarily too high to be achieved or according to the average so that mediocrity is reinforced.

**Philosophical Level**

The highest level is the most general and refers to the philosophical goals to be reached by the system, that is, the accomplishments related to the quality of life which is the raison d'être of the system. Such ideals common to more than one culture are the philosophical base from which the system operates. Also at this level the analysis includes the system's commitment to a set of principles and beliefs compatible with the models of accomplishments.

**Cultural Level**

The next level refers to the goals of the particular culture in which the system operates, that is, the general values related to a certain culture. Realization of these goals brings fulfillment of the goals proposed at the philosophical level. "We can view human accomplishments at several levels of generality, and the values we assign to these accomplishments at each level will be derived from the level just above them" (Gilbert, 1978, p. 112).

The accomplishments related to the overall system are also measured in a general way, showing the deficiency in the culture in which the performance occurs (i.e., how well performance conforms to
the goal). Such deficiencies are to be corrected by the methods of improvement, which consist of a set of laws, procedures, and rules for running an organization with the purpose of meeting the cultural goals.

Policy Level

The goals at this level refer to the missions of a specific organization that lead to the attainment of specific cultural goals. Those missions define the basic purpose of an institution or subculture. The performance deficiencies at this level are more specific than those at the previous level, showing how effectively an institution performs by comparing the models of accomplishments of an ideal system with the actual performance of the organization being analyzed. The difference between both measures shows the impact of the organization's deficiencies and the economic value to be gained by improvement. The methods of improvement at this level include programs and policies of that organization.

When describing the missions of an organization, Gilbert (1978) suggested the use of the ACORN test, which consists of five qualifications of a good description of the mission of an institution. ACORN is an acronym for those criteria: A stands for Accomplishment, C for Control, O for Overall objective, R for Reconciled, and N for Number. In other words, each letter represents one question to be answered ("yes" or "no") to find out whether the stated missions are the true goals of the institution being analyzed. Therefore, accord-
ing to this test a correct statement of a mission should describe not just activities or behaviors but accomplishments (A) for which those who are responsible have more control (C) than anyone else, a true overall objective (O) reconciled (R) with other goals of the institution, and finally, accomplishments which can be measured and expressed in numbers (N). The ACORN test is said to be a procedure to determine whether the right accomplishments have been identified and formulated in a proper way so they can be easily understood.

**Strategic Level**

The accomplishments at this level are descriptions of the responsibilities and roles of the members of the institution. The purpose is the completion of the missions stated at the policy level through strategies and planning. The measures of the deficiencies are specifically related to the responsibilities of the key jobs or critical roles in the organization. The programs for improvement involve the design of job strategies such as data systems, training design, incentives, and so on.

**Tactical Level**

This level refers to the accomplishments and duties required to discharge any given responsibility of a role or job set up at the strategic level. The concern here is the execution of duties, the methods of implementation, or the actions which should be taken in order to achieve the accomplishments formulated at the strategic
level. At this level Gilbert (1978) suggested the use of the "knowledge map" when training is necessary in order to assess what knowledge individuals need to learn to perform their job well. The cost of the program is estimated, and tactical instruments for improving performance are programmed, such as feedback, guidance, training, and reinforcement.

**Logistic Level**

The accomplishments at this level deal with implementation of methods from the tactical level and the resources needed to execute the tasks, that is, the schedules of people, materials, facilities, and expenditures. In other words, an inventory of the material must be provided for the system to achieve the goals.

**Measures of Opportunity**

**Potential for Improving Performance**

Actual performance is measured at this stage, and the potential for improving performance (PIP) is quantified for each performer or for the whole system.

The PIP is the ratio of exemplary performance or the established standard to the average or typical performance. PIP is then the measure of opportunity, so the higher the PIP the higher the potential for improving since poor performers usually have great potential, which is the critical PIP.
Stakes

The measure of PIP is translated into "stakes" or the value of correcting. Table 2 may be used to calculate the stakes (Column 9) by multiplying the value of total performance (Column 7) by the equation (PIP - 1) for value-related measures. For cost-related measures, the stakes are calculated by multiplying the cost of performance (Column 7) by the equation (1 - 1/PIP). Column 7 is the result of multiplying Column 4 by Column 5 and by Column 6 (Gilbert, 1978).

Reducing the variations in performance shown by PIP and the economic impact involved represents an opportunity for improvement for the organization or the performer. The PIP shows the potential for improvement, and the stakes show how significant the improvements are for the organization. The stakes also can help to set priorities in dealing with problems.

Methods of Improvement: Behavior Engineering Model

At this stage, for each level, there are specific methods of improving performance although in general, the focus is on environmental methods, people programs, and management actions. A useful tool designed by Gilbert (1978) is the Behavior Engineering Model (BEM), which may be used as an aid to designing and troubleshooting performance systems.
Table 2. Performance Table

<table>
<thead>
<tr>
<th>Standards</th>
<th>Actual Value or Cost of Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2) Typical Requirements</td>
</tr>
<tr>
<td></td>
<td>(3) Exemplary Accomplishments</td>
</tr>
<tr>
<td></td>
<td>(4) Typical Performance</td>
</tr>
<tr>
<td></td>
<td>(5) Exemplary Performance</td>
</tr>
<tr>
<td></td>
<td>(6) Typical #People or Transactions</td>
</tr>
<tr>
<td></td>
<td>(7) Exemplary Transactions</td>
</tr>
<tr>
<td></td>
<td>(8) Exemplary Total PIP Stakes</td>
</tr>
<tr>
<td></td>
<td>(9) Exemplary PIP Stakes</td>
</tr>
</tbody>
</table>

Table 3. Behavior Engineering Model

<table>
<thead>
<tr>
<th>Information</th>
<th>Instrumentation</th>
<th>Motivation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>s^D</strong></td>
<td><strong>R</strong></td>
<td><strong>s^E</strong></td>
</tr>
<tr>
<td>ENVIRONMENTAL SUPPORTS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data</td>
<td>Instruments</td>
<td>Incentives</td>
</tr>
<tr>
<td>Specification Feedback</td>
<td>Tools</td>
<td>Monetary and Nonmonetary incentives</td>
</tr>
<tr>
<td>Directions</td>
<td>Equipment</td>
<td></td>
</tr>
<tr>
<td>Guidance</td>
<td>Resources</td>
<td></td>
</tr>
</tbody>
</table>

'PERFORMER'S REPERTORY OF BEHAVIOR

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Response</th>
<th>Motives</th>
</tr>
</thead>
<tbody>
<tr>
<td>(4)</td>
<td>(5)</td>
<td>(6)</td>
</tr>
<tr>
<td>Training</td>
<td>Capacity</td>
<td>Capabilities</td>
</tr>
<tr>
<td>Skills</td>
<td>Selection</td>
<td>to be reinforced</td>
</tr>
<tr>
<td>design</td>
<td>Adaptation</td>
<td></td>
</tr>
</tbody>
</table>

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Gilbert (1978) called the Behavior Engineering Model a system whereby human competence is created or improved through increasing efficient behavior, which is defined as a product of a person's repertory and the supporting environment. As Table 3 shows, the model has six elements or components of behavior that are described in terms of stimuli ($S$) evoking a response ($R$). The stimuli, however, do not just evoke a response. They have a second function, which is, the reinforcing aspect of a stimulus showing whether the individual responded correctly or not. This function is symbolized with "$S^r\$", meaning reinforcing stimulus. The evoking function also has a symbol "$S^D\$", meaning discriminative stimulus (the stimulus functions as an occasion for a response). Thus, individuals must identify the event; otherwise they are not able to recognize the event occasioning the response. Therefore, behavior is described in three aspects: An individual responds ($R$) to information telling what to do ($S^D$) and is reinforced for the action ($S^r\$). Next, each of these three aspects is analyzed in terms of the performer's repertory and the supporting environment. Thus, each cell of Table 3 is analyzed.

**Data**

The supporting environment should provide the individual with information needed to know "what to do." Information is said to be the discriminative function of a stimulus (Parsons, 1974). A stimulus has two information functions: direction (telling what to
do next) and confirmation (ratifying the correctness of the action) (Gilbert, 1978).

An information system is well established when it specifies all of the performance requirements for the job in terms of the expected accomplishments (missions, responsibilities, and duties), which are measured in terms of quality, quantity, and cost and compared against established exemplary standards. Furthermore, such information is also given to individuals in the form of directions, guidance, and evaluation of how well they are performing.

Directions and guidance are called performance aids by Gilbert (1978) because they help to improve human competence by facilitating the necessary discriminations and generalizations to accomplish a given job. Moreover, the advantages of such aids are that they can reduce the costs of delivering training by reducing the need for instructors although they cannot be seen as a substitute for training.

The information required for competent performance is also provided in the form of feedback or confirmation regarding the quality, quantity, or the nature of the outputs of the performance (Nadler, Mirvis, & Cammann, 1976). In behavioral terms, feedback is a stimulus systematically related to how well an individual achieves a standard criterion required to accomplish a given task. Such criteria are quality, quantity, and cost measures of each accomplishment.
In a review of studies on feedback, Bilodeau and Bilodeau (1961) concluded that knowledge of results is "the strongest and most appropriate variable controlling performance and learning" (p. 250). The information given in a feedback system should lead the employee to identify instances of appropriate and inappropriate goal-directed behavior (Prue & Fairbank, 1981). Feedback may have a positive effect on the performance of individuals, groups, and organizations by being an error-correction device, a tool to identify and solve problems, and by serving also to clarify goals (Nadler et al., 1976; Nadler, 1977, 1979). Gilbert (1978) asserted that the lack of feedback is one of the "largest contributors to incompetence in the world of work" (p. 91). (See also Gooding, 1980.) Parsons (1974) reviewing the Hawthorne studies demonstrated that the workers in the experimental room received feedback information frequently and systematically by having a counter cumulatively recording the total number of completed relays for each operator. This variable was not taken into consideration by the experimenters although it had an effect on productivity. Ammons (1956) stated that "when knowledge of performance is decreased, performance drops" (p. 290). This finding has been confirmed by recent studies (Brown, Malott, Dillon, & Keeps, 1980).

An effective feedback system has specific characteristics which make the system work. Timing is a controversial issue in feedback delivery. According to some authors, feedback should be delivered immediately, contingent upon performance (Robinson & Robinson, 1978),
with little delay between the performance error and the delivery of feedback concerning it (Rummaler, 1972). Delay in feedback reduces the corrective effect of information since the performer may have difficulty understanding what was wrong and how to correct it. Moreover, immediate feedback leads to acceptance by the employee who favorably reacts to it (Feeney, 1972). Ammons (1956), reviewing 56 studies about feedback, concluded that "the longer the delay in giving knowledge of performance, the less the effect the given information has" (p. 287). Further, Ammons listed a series of studies showing how immediate information led to a better performance than delayed information. Recent studies have shown the importance of immediacy in delivering feedback to improve performance (Cooper, Thompson, & Baer, 1970; Cossairt, Hall, & Hopkins, 1973).

Frequency is another characteristic of an effective feedback system. Generally speaking, feedback is most effective when it is delivered frequently (Rummaler, 1972; At Emery Air Freight, 1973; Nadler et al., 1976; Robinson & Robinson, 1978). Ilgen, Fisher, and Taylor (1979) suggested that the frequency of delivering feedback increases the accuracy and timeliness of the information received.

Feedback should be specifically related to the pre-established standards of performance. Ammons (1956) stated that "the more specific the knowledge of performance, the more rapid the improvement, and the higher the level of performance" (p. 287). Feedback should be accurate and based on specific areas of performance (Robinson & Robinson, 1978).
When human factors aspects are considered in the design of equipment they serve to control more adequately the environment where men work and live (McCormick, 1970). According to Gilbert (1978) tools and equipment of work should be designed scientifically to match human factors; otherwise the environment will not provide favorable conditions for performance. Instruments should be easy to handle, fitting human capabilities and facilitating the user to be an exemplary performer. By sharpening a saw, for instance, performance may be improved without direct manipulation of a performer's behavior. Gilbert's viewpoint is that when the best instruments are available to performers, many problems may be avoided or easily solved. Even training investment may be decreased when the supporting environment provides the necessary and well-designed instrumentation.

The characteristics of equipment influence how people operate, and when they match the capabilities and limitations of people, the operation is more efficient (Meister, 1971). Meister explained that it is cheaper and easier to adapt equipment to human capabilities than it is to modify people to equipment requirements. Moreover, man and machine are interdependent, and any characteristic of the instrumentation that makes job operation difficult reduces efficiency. Therefore, when developing a system it is important to prevent the design of equipment with characteristics predisposed to errors.
According to Meister the design of instrumentation should be from the
operator's standpoint so that the efficiency in using it will be at
its greatest.

Tools and equipment can also be improved by systematic consider-
ation of human factors involved in their use. Such improvements in-
clude reduction of stress and increased convenience, safety, health,
and comfort (McCormick, 1970).

Incentives

Gilbert's approach views motivation as the third component of
BEM designed to troubleshoot behavior problems. In this context,
motivation has two equally important aspects dealing with performance
deficiencies: an environment of incentives and the repertory of
motives. Incentives are the environmental supports for performance.
Examples of incentives are money, recognition, promotion, awards,
and opportunities for career development. According to Skinner's
reinforcement model, those are the positive consequences following
behaviors, and they must be available and contingent upon performance
to assure competence.

Knowledge

The performer's repertory, the second element of an information
system, deals with the individual's ability to discriminate the
information provided by the environment and skill to accomplish the
tasks. Therefore, another important condition for the behavior to
occur refers to the necessary knowledge and skills displayed in the performer's repertory. This condition may be achieved by training the individual. Knowledge and skills are therefore the subject matter for a training program that should be designed in a scientific way to match the requirements of exemplary performance (Gilbert, 1978).

Training is a powerful strategy for improving performance, but since it is often very expensive, it should be designed carefully based on the required accomplishments and limited to a practical program of instruction (Gilbert, 1967). The goal of a training system is to prepare people to perform their work "at standard" by changing behavior. Thus, the required behavior must be determined, and the changes must be measured in terms of the established standards which must be very specific (Warren, 1979).

Gilbert (1967) suggested some rules to follow when assessing training needs and designing a training program to cover the performer's deficiencies, avoiding unnecessary expenses and promoting greater performance. One rule is summarized in the formula \( D = M - I \) where deficiency \( (D) \) is equal to the mastery \( (M) \) of the list of behaviors assumed to be necessary for mastering a subject matter, minus the initial repertory \( (I) \) or the behaviors one already has when the training begins. Therefore, the worker's deficiency in actual performance should be the data necessary for establishing objectives for training, which means the difference between the established per-
formance (prescribed mastery) and the initial repertory of the worker.

A second rule for assessing training needs refers to the necessity of distinguishing between the worker's acquirement and the accomplishments. The worker's acquirement refers to what has to be learned or the achievement produced by learning, while accomplishment refers to the value given to what was learned. The deficiencies in acquirements make a difference in the accomplishments, and a small change in acquirement may produce a large change in accomplishment. For the purpose of assessing training needs, the acquirements must be measured, not the accomplishments. Therefore, a list of the worker's deficiencies in terms of behaviors (acquirements) is the data to be collected for establishing training needs.

Response Capacity

The person's repertory of behavior also should match the physical and perceptual requirements necessary to accomplish the job. When selection takes place, the response capacity or the sensory-motor predictors should be tested and measured through specific tests directly related to each accomplishment entailed in specific jobs. Otherwise, the selection could include individuals with intrinsic difficulty in performing certain tasks, for example, those physically incapable of accomplishing the tasks they were hired to perform. For some tasks, however, prosthetic devices can be provided to shape the performer's ability to use the instrumentation.
Motives

Motives are related to the performer's repertory to be reinforced by the available incentives. Performer's attitude toward work also is included here. The incentives should match the motives; that is, not only must the rewards be available to the performer, but also the individual must be willing to work for the available incentives that are contingent on the required performance.

Diagnosing the causes of performance deficiencies, one may follow a sequence suggested by Gilbert (1978) as shown in Table 3. The information in Table 4 also facilitates troubleshooting performance deficiencies. Gilbert stated that the direct manipulation of people's motives is not the best or the most worthy way to improve performance. One reason is that the cost is too high compared to the changes produced. Besides, "when we give people better information about their successes, we may have also improved their incentives to perform well" (p. 94). While each component of BEM is presumed equivalent, the effects seem to be greater when, for instance, an attempt is made to correct failures in the information system rather than in motivation. Therefore, first of all, the deficiencies in the environmental components such as information and instrumentation systems should be corrected, which may produce improvement in motives—the last component to be dealt with when one wants to correct workers' deficiencies. In other words, before looking at the
<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>CAUSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHAT?</td>
<td>If you get a &quot;NO&quot; answer to any of the questions below, then corrective action is required.</td>
</tr>
<tr>
<td></td>
<td>1. Performance Specification</td>
</tr>
<tr>
<td></td>
<td>a. Are standards valid for all aspects of performance?</td>
</tr>
<tr>
<td></td>
<td>b. Are standards known to the performer?</td>
</tr>
<tr>
<td></td>
<td>c. Are standards open to reasonable and meaningful by the performer?</td>
</tr>
<tr>
<td></td>
<td>d. Have the standards ever been used?</td>
</tr>
<tr>
<td></td>
<td>e. Are the standards administered consistently?</td>
</tr>
<tr>
<td>WHERE?</td>
<td>Feedback</td>
</tr>
<tr>
<td></td>
<td>a. Does the performer receive, on a regular and consistent basis, information about their performance?</td>
</tr>
<tr>
<td></td>
<td>b. Measurement:</td>
</tr>
<tr>
<td></td>
<td>i. Are all relevant elements being measured?</td>
</tr>
<tr>
<td></td>
<td>ii. Are performance standards meaningful to the performer?</td>
</tr>
<tr>
<td>WHEN?</td>
<td>i. Are the units of measurement meaningful to the performer?</td>
</tr>
<tr>
<td>WHO?</td>
<td>Consequences</td>
</tr>
<tr>
<td></td>
<td>a. Do the existing consequences support the desired performance?</td>
</tr>
<tr>
<td></td>
<td>b. Do the existing consequences inhibit the undesired performance?</td>
</tr>
<tr>
<td></td>
<td>Desired Performance</td>
</tr>
<tr>
<td></td>
<td>Undesired Performance</td>
</tr>
<tr>
<td>IX. TASK INTERFERENCE</td>
<td>a. Can the performer easily recognize when the stimulus for action is passed?</td>
</tr>
<tr>
<td></td>
<td>b. Does the performer have only one task to perform at a time?</td>
</tr>
<tr>
<td></td>
<td>c. Are adequate resources available?</td>
</tr>
<tr>
<td></td>
<td>i. Time?</td>
</tr>
<tr>
<td></td>
<td>ii. Tools or support equipment?</td>
</tr>
<tr>
<td></td>
<td>iii. Information/Data?</td>
</tr>
<tr>
<td></td>
<td>iv. Personnel?</td>
</tr>
<tr>
<td></td>
<td>v. Money?</td>
</tr>
<tr>
<td></td>
<td>4. Are the job procedures adequate and correct?</td>
</tr>
<tr>
<td>X. KNOWLEDGE</td>
<td>a. Does the performer know how to perform the desired action?</td>
</tr>
</tbody>
</table>

(Reprinted from Praxis Corporation unpublished module)
worker's motives, one should make sure that all other components have been improved.

Purpose of Study

The purpose of this study is an attempt to apply the performance audit approach developed by Gilbert (1978) in a small business in order to show the feasibility of this application. Although an application of this approach in a business including a description of the methodology, has been provided by Gilbert (1978), the procedures were not described clearly enough to be followed when an organization is being analyzed as a whole system. The present study is an application of the performance engineering dealing with system's performance as well as with specific performer's deficiencies.
CHAPTER II

METHOD

Setting

The research was conducted in a small storefront food cooperative. Its operation was based on the principles of consumers' cooperation and was motivated by ecological and social values. The food co-op was situated on a 38-square-meter lot owned by a Midwestern university and located on its campus. The food co-op was open Monday through Saturday from 10:00 a.m. until 7:00 p.m. The member-owned cooperative was created in 1975 and was managed primarily by students, although people from the local community were allowed and encouraged to shop and to become members of the organization. At the time of this research there were approximately 184 members.

The food co-op was a nonprofit organization, and its main purpose was to sell inexpensive natural food to the members although nonmembers generated approximately 26% of the sales in recent years. Dependent on the university student population, the food co-op had a high membership turnover. Requirements to join the cooperative as stated in the by-laws included attendance at an educational seminar and payment of a membership fee and a loan in form of a buying deposit (i.e., members loaned money—the amount being established in the by-laws—to the co-op when they joined, and it was returned when they left the co-op).
Procedure

The performance audit approach described above was used to analyze the food co-op. The analysis involved the 18 steps summarized in the performance matrix shown in Table 1, which is a guide to help performance engineers identify the decisions to be made and the sequence to be followed in a performance system audit (Gilbert, 1978). I was the performance engineer for this audit and carried out all tasks described in this section, unless otherwise specified.

Being familiar with the system after observing the food co-op's operation for approximately 3 months, I presented a draft of a model for the organization (following the 18 steps shown in Table 1) to the board of directors, staff members (i.e., manager, assistant manager, work coordinator), and the workers according to the level of analysis. In other words, at philosophical and cultural levels the directors were asked to participate in the analysis, while at the policy level the staff members were also asked to give suggestions. At lower levels (strategic, tactical and logistic) the workers were asked to participate by giving suggestions.

Philosophical Level

Models

By observing the food co-op's operations for approximately 3 months and interviewing members of the board of directors, the goals at the philosophical level became apparently identifiable. Based in
those facts a draft of the ultimate goals for the food co-op was proposed to the meeting of the board of directors. After discussing whether or not to approve the proposed philosophical goals, they decided to ask members for suggestions. This action was based on the belief that the major decisions in a cooperative system should be made with the participation of the member-owners: Suggestions should be made, considered, and discussed until a consensus is reached. Thus, the ultimate goals of the organization were discussed in a general membership meeting. The chairperson of the board of directors asked the members to define the ultimate goals of the food co-op without knowing the goals proposed in the draft. Following a short explanation of the purpose of the issue, the chairperson collected the suggestions and listed them on a paper board so that everybody could read and discuss them. Later, the list was refined by the board of directors and compared with the proposed draft those goals matching the list were accepted.

**Measures and Methods**

These stages consisted of a discussion with the board of directors regarding the measures of opportunity or the deficiencies related to the philosophical goals. A draft including the measures of deficiencies and the methods of improvement was presented to the board of directors, who gave suggestions.
Cultural Level

Models

At this stage the analysis consisted of identifying the cultural values by which the system operated and the specific deficiencies in these values. The cultural goals were formulated from the model proposed at the philosophical level. A draft including the cultural goals was presented to the board of directors. Following a discussion of the subject matter, suggestions were collected and inserted in the analysis.

Measures and Methods

An outline with the measures of deficiency and the methods of improvement related to the cultural level was proposed to the board of directors. Suggestions were given and considered in the process of identifying the measures of opportunity (i.e., the level of conformity with the model of values, stated and the methods to be applied to improve the assessed deficiencies, identified at stage B.

Policy Level

Models

The specific purpose or the mission of the food co-op was derived from the previously established goals and formulated into a model of accomplishments created for the co-op. The same co-op
members--board of directors--who were interviewed to formulate the cultural goals were asked to participate in the identification of the missions or the major accomplishments of the system as a whole. They discussed the proposed model, describing the specific purpose to be accomplished by the organization. Accordingly, the ACORN test was applied for the missions of the food co-op. See the section on policy level in the introduction for more details on this procedure.

Once the missions were identified and properly described, the requirements, units of measurement, and standards were also identified as follows: Requirements and units of measurements were identified by looking at previous studies on food co-ops. Thus, a literature review was conducted to formulate the requirements and to identify the indicators that were used as units of measurements. Establishing the indicators was made possible through information provided by a survey among storefront food cooperatives by the North Country Development Fund (Markham, 1981). The data collected in this survey also provided exemplary performance for some indicators. Another source of data providing the indicators of an outstanding cooperative was The Cooperative Audit by Thompson (1982). In addition, interviews were held with a consultant for cooperatives from the Michigan Federation of Food Cooperatives, and a manager of a storefront food co-op. This food co-op was appointed as an outstanding or exemplary performer by the members of the Michigan Federation of Food Cooperatives.
Measures

The stakes analysis was then conducted, including measurement of the system's actual performance, the PIP, and the economic impact of such changes. (The procedure followed for the stakes analysis is explained in the section on policy level in the introduction.) The system's actual performance was measured by collecting data corresponding to the requirements from official documents such as financial statements and previously recorded financial data. In addition, information was provided by data recorded in membership files and minutes from meetings. PIPs related to cost measures were computed by dividing the score established for exemplary performance by the actual performance and vice-versa when PIPs were related to value-measures.

Methods

The BEM was applied for those PIPs for which the changes could have great impact on the organization. In order to determine which changes would produce the greatest impact on the organization, the directors were asked about those PIPs showing the greatest discrepancy between the exemplary and the actual performance. Higher PIPs often (but not necessarily) show great impact when performance is improved. Impact is also determined by analyzing the changes on the organization when a program for improvement is implemented.
Strategic Level

Models

The strategies for executing the missions established at the policy level were designed at this stage. The job systems or the roles and responsibilities of the members of the food co-op were analyzed. A work-information flow was designed to aid in the development of a function model whereby the food co-op's accomplishments as well as the performers' accomplishments were listed. Therefore, the performers' jobs were described in terms of an ideal model (how it should be) rather than an actual description (how it is being done). For this function model, information was collected concerning all tasks and responsibilities involved in each job. This information was provided by interviewing the same personnel as listed above, plus two cashiers and two worker members. Information was also gathered through previously written job descriptions and actual observation of the workers performing the tasks.

The next step was to identify the relevant accomplishments for each job by separating them from duties. Thus, the list of accomplishments was refined by grouping items into related categories and generating a general statement for each group. After that, the measures for each accomplishment were determined by identifying the requirements and standards in terms of quality, productivity, and expenses. The incumbent of each job was interviewed to obtain the information on requirements. Thus, each accomplishment was examined
to find the relevant dimensions required to execute it. In order to
determine the exemplary performance for each accomplishment the
workers were observed for approximately two months. Also, the board
of directors was asked to describe the historically best performer.

Measures

The assessment of the actual performance was made through
observation of each worker's performance and by collecting data from
official documents such as financial books and the written data
already recorded. The PIP was computed in the same way as described
for the policy level. After that, the economic potential and the
impact of the PIP for the food co-op were also analyzed with the
participation of the board of directors. They were asked which
changes in the organization would have major impact considering the
higher PIPs.

Methods

Using the BEM (see Table 4), the variables affecting poor
performance were analyzed including the balance of the consequences
for each performer's behavior. Thus the existing consequences for
the performer's behavior were analyzed. This analysis consisted of
identifying the kind of consequences (positive or negative) following
actual performance. Consequently, the analysis focused on whether or
not positive consequences followed desirable performance. At this
stage strategies or specified solutions for improvement were recommended in concordance with the major causes of deficiencies.

**Tactical Level**

**Models**

The tasks systems were analyzed by identifying the major duties via a breakdown of each accomplishment formulated at the strategic level. Accordingly, the same procedure as for the previous level was followed here. For each duty the relevant dimensions or requirements, units of measurements, and exemplary performance were determined. At this level the worker coordinator and the workers were asked to participate by giving suggestions for a proposed model to determine the requirements and the units of measurements. In order to establish the exemplary performance, the workers were observed for approximately 2 months. The data collected were analyzed, and the data from the best performer were used to establish the exemplary performance.

**Measures**

The data for the actual performance were collected through daily observation of the outcome of the execution of the duties (e.g., checking to see that the store was properly cleaned). After approximately 2 months of collecting data an average was calculated and used to compute the PIPs. The economic potential of improving
the deficiencies at this level was analyzed (i.e., duties that had been overlooked were analyzed in terms of the potential for change).

Methods

The BEM was used at this level in order to assess the major causes of deficiencies. Thus, for each deficient duty the worksheet displayed in Table 4 was applied to find out which variables were controlling the worker’s performance. The balance of consequences (i.e., the existing positive or negative consequences following each duty) was analyzed to detect the controlling variables.

For each deficiency in performance methods of improvement were suggested. The tools or tactical instruments were recommended in accordance with the controlling variables discussed above.

Logistic Level

Models

The logistic level consisted of designing a system of support services to supply everything needed for the implementation of the tactics from the previous level. The analysis was conducted with the participation of the staff members. A draft of a model system of support services was presented to the staff, and they were asked to give suggestions on the resources needed to execute the duties formulated at the tactical level. Resources included materials, facilities, expenditures, and schedules. The analysis consisted of
listing what needed to be accomplished in order to implement the
tasks previously planned at the tactical level. Thus, a model of
accomplishments was developed for each duty for which deficiency was
related to lack of material needs. Accordingly, for each listed
accomplishment, the requirements and the exemplary performance were
formulated. In order to obtain this information workers were
observed and interviewed.

Measures and Methods

Data for the actual performance was gathered from observations
of the members' performance, that is, those members whose
responsibilities were related to the accomplishments listed at the
logistic level. Also at this level the analysis included the
assessment of the causes of deficiencies in performance (i.e., the
discrepancies between exemplary and actual performance). Methods of
improvement were then recommended according to the cause of
deficiencies.

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CHAPTER III

RESULTS AND DISCUSSION

Philosophical Level

Models

The proposed draft of the ultimate goals for the food co-op was discussed by the board of directors and its approval was made dependent on member's participation. At a General Membership Meeting the members generated a list of possible ultimate goals for the food co-op. The list included the following goals:

1. Work toward an alternative more humane social system.
2. Sell organically grown food.
3. Sell fresh produce.
4. Support local producers.
5. Sell unprocessed and whole grain food.
7. Be a nonprofit organization.

The list was examined and compared with the draft presented. The goals proposed in the draft matching the list presented by the members and the goals from the list were sorted into two categories: physical health and human interaction. The goals proposed in the draft different from the list presented by the members were discarded. Thus, the philosophical goals were synthesized as improving physical health and human interaction in order to improve quality of life. This conclusion, however, was not easily accepted.

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by all the members. All members agreed that the food co-op should be committed to the goal of improving human interaction. Improving physical health as a goal was approved by approximately 75% of the members. A lack of concordance regarding the definition of nutritious, healthful food contributed to the lower percentage regarding the goal of improving physical health. Another problem in reaching an agreement on this goal was that some members placed greater emphasis than did others on cooperation. For example, members debated the issue of the extent to which a cooperative enterprise should struggle for democratic management by letting members participate in the decision-making process—including decisions that could change the nature of the cooperative (e.g., from a health food store to a party store selling alcohol and cigarettes), and they debated the issue of whether the cooperative should support nonprofit and unexploitative organizations. In summary, about 25% of the members gave their opinions on philosophical values that they felt more important than other values such as physical health.

Although both goals—physical health and human interaction—are philosophically related and both pertain to the same organization, they were given separate treatment for the purposes of this study in order to reflect accurately the dual nature of the organization's goals. This differentiation was maintained throughout this study: When the goal of improving physical health was discussed, the organization was referred to as "the health food store"; when the goal of improving human interaction was discussed, the organization
was referred to as "the co-op." (When the organization in general was discussed, it was referred to as "the food co-op."

Table 5 shows the models of accomplishments at the philosophical level. Two ideals were identified for the food co-op: human interaction and physical health improved.

Measures

The measures of deficiency seen in Table 5 were based on the beliefs of the members that: (a) people have been exploited by economic systems that place a far greater value on profit than on human interaction and (b) many health problems are caused by poor nutrition. These two goals are related, and this relationship may be explained by their belief that the food system costs Americans about $15 billion in overcharges each year because of the concentration of economic power involved in food production and distribution. Thus, it is not surprising that many poor Americans are not able to maintain a healthy diet.

Methods

In order to improve these deficiencies, the food co-op's commitment was to support a nonprofit, cooperative environment providing high quality food (i.e., health food—e.g., food that is fresh, is organically rather than chemically fertilized, lacks preservatives or additives, contains a high nutrition level).
<table>
<thead>
<tr>
<th>A. MODELS</th>
<th>B. MEASURES</th>
<th>C. METHODS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ideals</td>
<td>Integrity</td>
<td>Commitment</td>
</tr>
<tr>
<td>1. Human interaction</td>
<td>1. People being exploited</td>
<td>1. Providing a cooperative</td>
</tr>
<tr>
<td>improved</td>
<td>by economic systems</td>
<td>environment</td>
</tr>
<tr>
<td></td>
<td>2. Health problems caused</td>
<td>2. Providing nutritious food</td>
</tr>
<tr>
<td></td>
<td>by poor nutrition</td>
<td></td>
</tr>
</tbody>
</table>

Table 5. Philosophical Level Analysis
Cultural Level

Models

As shown in Tables 6, two accomplishments were identified at this level, whereby the goals established at the philosophical level would be implemented. One accomplishment was defined as providing a cooperative environment that facilitates the development of consumer-owned, consumer-controlled, nonprofit businesses. The other accomplishment was related to increase the amount of nutritious food (health food) eaten by the population in order to improve physical health.

Measures and Methods

The measures of deficiency and the methods of improvement at this level are related to the issues discussed above. A health food store could increase the percentage of nutritious food eaten by the population, and an organization based on the principles of cooperation could provide an environment where people work not only for individual benefits but for cultural values as well.
Table 6: Cultural Level Analysis

<table>
<thead>
<tr>
<th>A. MODELS</th>
<th>B. MEASURES</th>
<th>C. METHODS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goals</td>
<td>Conformity</td>
<td>Policy</td>
</tr>
<tr>
<td>1. Cooperative work implemented</td>
<td>1. People working for individual benefits only rather than for cultural values</td>
<td>1. Establishing a cooperative institution</td>
</tr>
<tr>
<td>2. Nutritious food provided</td>
<td>2. Poor diets are the major cause of health problems</td>
<td>2. Establishing a health food store</td>
</tr>
</tbody>
</table>
Policy Level

Models

As a first step, the ACORN test was applied for the stated missions in order to determine whether the missions were accurately stated and were the true goals the organization had decided to achieve. Table 7 summarizes the results of this test for the stated

Figure 1. Organization Chart: Cooperative Structure
Table 7. ACORN Test

<table>
<thead>
<tr>
<th>Questions</th>
<th>Healthy Food Fold</th>
<th>Membership Enrolled and Actively Involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;yes.&quot;</td>
<td>It is a permanent product, that can be seen through financial statements and by contacting customers.</td>
<td>&quot;yes.&quot; It can be observed through official documents and work done by the members.</td>
</tr>
<tr>
<td>&quot;yes.&quot;</td>
<td>They have more control than anyone else by running the store.</td>
<td>&quot;yes.&quot; The control is shown by keeping an active membership.</td>
</tr>
<tr>
<td>&quot;yes.&quot;</td>
<td>It is the overriding objective because nothing else can be expected.</td>
<td>&quot;yes.&quot; The food co-op's performance would be perfect if this accomplishment is achieved.</td>
</tr>
<tr>
<td>&quot;yes.&quot;</td>
<td>Members have an agreement to sell healthy food.</td>
<td>&quot;yes.&quot; It can be observed and measured through official documents.</td>
</tr>
</tbody>
</table>

"q" Is it a true overall objective and not just a by-product? | "q" Can this mission be quantified and expressed in numbers? | "q" Can this mission be reconciled with other goals? | "q" Is it an accomplishment or not? | "q" Do the members have primary control over it?
mission: (a) to sell healthful food and (b) to have an enrolled and actively involved membership.

An organization chart was developed so that the cooperative business structure could be designed and the levels of management established. Figure 1 shows the line-management structure corresponding to the levels in the performance matrix, Table 1. The first tier of management—tactical level—is responsible for the execution of operational tasks; the second—strategic level—is responsible for planning, organizing, and coordinating the store operations; the third—policy level—is responsible for policy decisions (i.e., setting the organizational goals and making the major decisions).

Also at this stage, specific requirements, units of measurement, and exemplary performance were formulated for each of the two missions. Table 8, a performance table for the food store, summarizes the first stage of the analysis—the models—stating the missions the store had decided to accomplish, that is, "health food sold." Next, the standards are listed, including requirements and exemplary performance for the stated accomplishment. The listed requirements refer to the quality, quantity, and labor costs, which are measured in terms of the indicators. For instance, the percentage of items meeting high-nutrition criteria is a quality (class) requirement for the food to be healthful. Quantity (volume and productivity) is measured through financial indicators and is listed among the standards.
<table>
<thead>
<tr>
<th>Accomplishments</th>
<th>Requirements</th>
<th>Exemplary Performance</th>
<th>Actual Value or Cost of Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health food sold</td>
<td>Class: % items meeting high-nutrition criteria</td>
<td>100% 90%</td>
<td>- -</td>
</tr>
<tr>
<td></td>
<td>Volume: sales/square foot/week</td>
<td>$6 $5</td>
<td>- -</td>
</tr>
<tr>
<td></td>
<td>total hours/week store open</td>
<td>60 54</td>
<td>- -</td>
</tr>
<tr>
<td></td>
<td>inventory turnover</td>
<td>25x 20x</td>
<td>- -</td>
</tr>
<tr>
<td></td>
<td>sales/person-hour</td>
<td>$66 $21</td>
<td>- -</td>
</tr>
<tr>
<td></td>
<td>average purchase/month/member</td>
<td>$40 $17 12 months 184 members</td>
<td>- -</td>
</tr>
<tr>
<td></td>
<td>% members purchasing/month</td>
<td>70% 70%</td>
<td>- -</td>
</tr>
</tbody>
</table>

**Productivity:**
- sales/total assets: 13x 10x | - - | - 1.3 - |
- slippage: .8% .8% | - - | - - |
- net margin: 1% -1% | - - | - 2.0 Survival |

**Labor costs:**
- payroll: 10% 17% 98,000 1 | 16,660 1.7 6,830 |
- total labor: 13% 20% 98,000 1 | 19,600 1.5 6,468 |
Table 9 also summarizes the data obtained from the performance audit for the food store. The first column, stage A—the models of accomplishments—lists only those indicators for which the PIF is higher than 1.3. Indicators for which the PIP is 1.3 or lower were not considered for the analysis since they suggest that the actual performance is very close to the level for the exemplary performance.

Table 10, a performance table for the cooperative, summarizes the data obtained by the performance audit at the policy level. The table summarizes the first stage of analysis, which is the models of accomplishments the cooperative is committed to achieve (the stated mission of keeping a membership enrolled and actively involved). As requirements, quantity (volume) and quality (class) were measured for this mission. The table also shows the levels achieved by the exemplary performance. Table 11 is a summary of the system performance analysis at the policy level. The first column—stage A—shows the models for the mission the co-op is committed to accomplish.

Measures

The actual value or cost of performance for the food store is shown in Table 8. This includes the data obtained for the actual (typical) performance, the unit value or cost, and the number of people or transactions involved. The next column shows the PIPs computed for each indicator. The first high impact was found in the area with measures relating to volume of food sold. The highest PIP
### Table 9. A Policy-Level Analysis of the Health Food Store

<table>
<thead>
<tr>
<th>A. MODELS</th>
<th>B. MEASURES</th>
<th>C. METHODS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health food sold:</td>
<td>Impact of PIP:</td>
<td>Programs:</td>
</tr>
<tr>
<td>1. Sales/person-hour</td>
<td>1. PIP = 3.1 = potential for saving by decreasing labor costs</td>
<td>1. Management training in skills: defining and assigning responsibilities, planning, and delegating</td>
</tr>
<tr>
<td>2. Average purchase/month</td>
<td>2. PIP = 2.3 = potential for increasing sales</td>
<td>2. Improve relationship with customers Control the inventory</td>
</tr>
<tr>
<td>3. Net margin</td>
<td>3. PIP = 2.0 = potential for increasing sales/reducing expenses</td>
<td>3. Revising pricing policies</td>
</tr>
<tr>
<td>4. Labor costs: payroll</td>
<td>4. PIP = 1.7 = potential for saving by decreasing labor costs</td>
<td>4. Revising salary system focusing on accomplished tasks rather than hourly based More volunteers</td>
</tr>
<tr>
<td>5. Total labor costs</td>
<td>5. PIP = 1.5 = potential for saving by decreasing labor costs</td>
<td>5. Revising discount system</td>
</tr>
<tr>
<td>Standards</td>
<td>Actual Value or Cost of Performance</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------------------------</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Exemplary Performance</td>
<td>Typical Performance</td>
</tr>
<tr>
<td>Membership enrolled and actively involved</td>
<td>Volume: % members/1000 target population</td>
<td>15%</td>
</tr>
<tr>
<td>new members/month</td>
<td>15%</td>
<td>1%</td>
</tr>
<tr>
<td>% member turnover</td>
<td>30</td>
<td>13</td>
</tr>
<tr>
<td>Class: average candidates/board positions</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>% members attending meetings</td>
<td>20%</td>
<td>10%</td>
</tr>
<tr>
<td># members on committees</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>% members working at store (volunteer)</td>
<td>75%</td>
<td>17%</td>
</tr>
</tbody>
</table>

Table 10. Performance Table for the Cooperative.
Membership enrolled and actively involved:

1. Membership base
   - PIP = 15 = potential for increasing sales and capital
   - Programs: 1. Activate recruitment system
                 2. Revising pricing policy

2. Membership turnover
   - PIP = 2.0 = potential for improving community involvement
   - Programs: 2. Recruitment system focusing in the local community

3. Candidates for board of directors positions
   - PIP = 2.0 = potential for increasing democratic involvement
   - Programs: 3. Design short and efficient meetings

4. Attendance at meetings
   - PIP = 2.0 = potential for increasing involvement
   - Programs: 4. Same as 3

5. Members on committees
   - PIP = 1.6 = potential for increasing cooperation
   - Programs: 5. Design contingencies
                 Information system
                 Feedback system

6. Volunteerism
   - PIP = 4.4 = potential for increasing participation
   - Programs: 6. Revising pricing policy
                 Assigning different tasks according to personal skills

Table 11: A Policy-level Analysis of the Cooperative
is related to the sales per person-hour ratio for which the PIP is 3.1. The low ratio is probably caused by the limited space of the store which requires extra labor for frequent restocking of shelves and bins. The high impact, however, is related to the average monthly purchase per member for which the PIP is 2.3. Significant stakes were found for this measure. Increasing the average monthly purchase per member from the typical level of $17 to the exemplary level of $40 would result in an annual increase in sales of $48,796. In the area of labor costs stakes were not found to be significant. For instance, decreasing the amount spent in payroll from the typical level of 17% to the exemplary level of 10% would result in an annual saving of $6,830. Approximately the same amount would result by decreasing the total labor costs from the typical level of 20% to the exemplary level of 13%.

The second column in Table 9 summarizes the impact of each PIP (listed in Table 8) at the policy level for the food store.

A similar analysis for the co-op is summarized in Table 10. The first high impact was found in the area with measures relating to volume of membership base. A PIP of 15 was found for the percentage of members per 1,000 target population belonging to the co-op. Also, the stakes were found significant for this area. Increasing the percentage of members in the population area served by the co-op from the current level of 1% to the exemplary level of 15% would result in an annual increase in sales of $535,504, even if the average monthly purchase remained at $17.
Some PIPs do not indicate great impact on the organization even though they are relatively high. For instance, increasing the percentage of members working at the store has a relatively high PIP (4.4). But changing this PIP would not necessarily have a direct significant economic impact on the organization; that is, increasing the percentage of members working at the food co-op would not necessarily result in an increase in sales. However, it could have an impact on human interaction by increasing members' participation. Furthermore, this change could give the current staff more time to spend on attempting to increase sales, which could have an indirect, moderately significant impact on the organization's sales. Improving the quality (class) of the membership base by increasing the average number of candidates per board position (from one to two per position), the percentage of members attending meetings (from 10 to 20%), and the number of members on committees (from three to five) also could have an impact on human interaction by increasing members' involvement in the co-op's operations.

Methods

The checklist in Table 4 was used for troubleshooting the causes of the PIPs that had great impact for the organization's success, for example, those PIPs indicating great returns through a potential increase in sales. Table 12 shows an analysis at this stage. Other BEM worksheets may be seen in the appendix.
Table 12. BEM Worksheet: Policy Level

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>WHERE</th>
<th>WHEN</th>
<th>WHO</th>
<th>REWARD</th>
<th>REINFORCEMENT</th>
<th>CONSEQUENCES</th>
<th>FEEDBACK</th>
<th>CAUSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low volunteer work</td>
<td>at food store</td>
<td>Daily</td>
<td>Retirement members</td>
<td>work at store</td>
<td>Increase performance</td>
<td>Fire, immediate support</td>
<td>1. Lack of performance feedback system</td>
<td>1. Performance intervention.</td>
</tr>
</tbody>
</table>

4. Members work not actualized.
In Table 9 the third column lists the methods or programs to be utilized to correct the deficiencies in the food store. Those recommendations were given according to the major causes of deficiencies. They may be summarized as follows:

1. A training program in management skills should be developed for the board of directors and for the staff. The needed skills are: defining and assigning responsibilities, designing contingencies, planning efficient and short meetings, and finances control. This program should be designed according to Gilbert's formula \( D = M - I \) for assessing training needs: The initial repertory \( I \) should be subtracted from the list of behaviors necessary for mastering \( M \) a subject matter; thus, training would be based on the list of behaviors which are deficient \( D \) in the actual performance.

2. Pricing policies should be revised, including the discount system.

3. Relationship with customers should be improved.

4. Salary system also should be revised and should be based on tasks accomplished rather than on an hourly pay rate.

The third column in Table 11 lists the programs suggested to improve the co-op. Those recommendations may be summarized as follows:
1. Activate the recruitment system focusing primarily on the local community rather than emphasizing the student population.

2. Design short and efficient meetings.

3. Design contingencies.

4. Improve information and feedback system.

5. Assign different tasks according to personal skills.

Strategic Level

Models

A model for the organization was developed concerning work flow through the food store (Figure 2) and membership involvement in the co-op (Figure 3). A model for the health food store, Table 13, and a model for the co-op, Table 14, were derived from the flowcharts (Figures 2 and 3), and thus the critical roles for the food co-op were identified. The job function model for the food store presented in Table 13 includes a list of accomplishments at the strategic levels (the store's accomplishments) and the tactical level (the members' accomplishments). Similarly, the job function model for the co-op presented in Table 14 also includes a list of accomplishments at the strategic (the co-op's accomplishments) and tactical levels (The members' duties).
Table 15, a performance table for the food store at the strategic level, summarizes the data obtained by the present analysis. The first two columns—accomplishments and standards—list the food store's accomplishments and standards, which includes the requirements (timeliness, accuracy, and completeness) for those accomplishments and the level achieved for the exemplary performance. Table 16 summarizes the strategic level analysis for the food store.
Figure 3. Flowchart Model for the Cooperative
<table>
<thead>
<tr>
<th>MISSION: HEALTHFUL FOOD SOLD STORE ACCOMPLISHMENTS</th>
<th>MEMBERS ACCOMPLISHMENTS</th>
<th>Supervised by:</th>
<th>Assisted by:</th>
<th>Coordinated by:</th>
<th>Conducted by:</th>
<th>Confirmed by:</th>
<th>Evaluated by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial records maintained</td>
<td>Income statements made</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vouchers posted</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Invoices posted and filled</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Expenses recorded</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Balance sheet made</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finances controlled</td>
<td>Checkbook balanced</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Budget prepared and approved</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cash flow controlled</td>
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</tr>
<tr>
<td></td>
<td>Taxes and HESSIC prepared</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cost analyzed and controlled</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Credit and collection managed</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Breakeven analysis made</td>
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</tr>
<tr>
<td></td>
<td>Profit and loss analyzed</td>
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<tr>
<td></td>
<td>Financial goals set</td>
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<td>Financial analysis performed</td>
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<td>Market research conducted</td>
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<td>Merchandizing planned</td>
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<tr>
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<td>Purchase list completed</td>
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<td>Orders and pre-orders made</td>
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<td>Shipments received</td>
<td>Supplies checked-in</td>
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<td>Pre-orders priced</td>
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</tr>
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<td>Store managed</td>
<td>Operations policies set</td>
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<td>Special events organized</td>
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<td>Job-prepared workers</td>
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<td>Workers' performance evaluated</td>
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<td>Workers' meeting organized</td>
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<td>Manager's report evaluated</td>
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</tr>
<tr>
<td></td>
<td>Staff's report evaluated</td>
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</tbody>
</table>

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Table 14. Model for the Cooperative

<table>
<thead>
<tr>
<th>-board</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MISSION: MEMBERSHIP INVOLVED AND ACTIVELY INVOLVED</strong></td>
</tr>
<tr>
<td>Membership records maintained and actualized</td>
</tr>
<tr>
<td>Meetings and courses developed</td>
</tr>
<tr>
<td>Workshops and courses developed</td>
</tr>
<tr>
<td>Newsletter published</td>
</tr>
<tr>
<td>Recruitment activated</td>
</tr>
<tr>
<td>Committees evaluated</td>
</tr>
<tr>
<td>Board of Directors evaluated</td>
</tr>
<tr>
<td>Specific accomplishments evaluated</td>
</tr>
<tr>
<td>Goals reviewed</td>
</tr>
<tr>
<td>Goals measured</td>
</tr>
<tr>
<td>Performance measured</td>
</tr>
<tr>
<td>Methods of improvement presented</td>
</tr>
<tr>
<td>Bylaws reviewed</td>
</tr>
<tr>
<td>GMM agenda evaluated</td>
</tr>
</tbody>
</table>

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Table 15. Performance Table for the Health Food Store: Strategic Level

<table>
<thead>
<tr>
<th>Standards</th>
<th>Actual Value or Cost of Performance Variations</th>
<th>Typical Unit Value of People or Transactions</th>
<th>Total Variations</th>
<th>FTP Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial</td>
<td>Balance sheet no 10% on 15th last month</td>
<td>100% correct</td>
<td>Not done</td>
<td></td>
</tr>
<tr>
<td>Timeliness unplanned</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Timeliness</td>
<td>Annual plan quarterly</td>
<td>100% correct</td>
<td>Not done</td>
<td></td>
</tr>
<tr>
<td>Timeliness</td>
<td>Plan run short</td>
<td>95%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Timeliness</td>
<td>Store managed</td>
<td>100% correct</td>
<td>Not done</td>
<td></td>
</tr>
<tr>
<td>Timeliness</td>
<td>Supplies stored</td>
<td>100% correct</td>
<td>Not done</td>
<td></td>
</tr>
<tr>
<td>Timeliness</td>
<td>Store cleaned</td>
<td>100% included</td>
<td>20% month</td>
<td></td>
</tr>
<tr>
<td>Timeliness</td>
<td>Work force maintained</td>
<td>100% positions</td>
<td>Not done</td>
<td></td>
</tr>
<tr>
<td>Timeliness</td>
<td>Personal evaluations</td>
<td>Monthly evaluations</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>A. MODELS</th>
<th>B. MEASURES</th>
<th>C. METHODS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responsibilities of workers:</td>
<td>Deficiencies in performance:</td>
<td>Strategies:</td>
</tr>
<tr>
<td>1. Finances controlled</td>
<td>1. Not done:</td>
<td>1. Assign responsibilities,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>given:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>. proper guidance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>. clear directions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>. adequate feedback</td>
</tr>
<tr>
<td></td>
<td></td>
<td>. necessary training</td>
</tr>
<tr>
<td>2. Marketing planned</td>
<td>2. Not done</td>
<td>2. Same as above</td>
</tr>
<tr>
<td></td>
<td></td>
<td>design contingencies</td>
</tr>
<tr>
<td>4. Supplies stored</td>
<td>4. No established standards</td>
<td>4. Guidance and feedback</td>
</tr>
<tr>
<td></td>
<td>No feedback given</td>
<td>systems</td>
</tr>
<tr>
<td>5. Store cleaned</td>
<td>5. Very great. PIP = 5.0</td>
<td>5. Guidance system</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Design contingencies</td>
</tr>
<tr>
<td>7. Personnel developed</td>
<td>7. Not done</td>
<td>7. Same as 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Design contingencies</td>
</tr>
</tbody>
</table>

Table 16: A Strategic-level Analysis of the Health Food Store
The first column—the models—lists the workers' responsibilities for which improvements are needed.

A similar analysis for the co-op is summarized in Tables 17 and 18. The first column in each table refers to the models designed for the co-op's accomplishments. Table 17 also shows the standards, which include the requirements (rate and completeness) and the exemplary level of performance.

**Measures**

The actual value or cost of performance (including the typical level, the unit value or cost, and the number of people or transaction involved) for the store accomplishments is displayed in Table 15. The current performance at this level showed great deficiency because many of the accomplishments had never been done. The highest impact area was found to be the measures of maintaining the work force, for which the PIP is 10.0. Although no economic potential is directly related to this PIP, changing it could have a great impact on human interaction—an expected increase in the degree of members' involvement. With respect to "store cleaned" the PIP also was found to be high (5.0). The stakes analysis here again was found to be significant since improving the store's appearance could result in an increase in customers and consequently an increase in sales. Stakes were not found significant for the measures relating to the storage of supplies. A yearly amount of $648 would be saved by improving the accuracy of weighing and pricing supplies from the.
<table>
<thead>
<tr>
<th>Accomplishments</th>
<th>Standards</th>
<th>Actual Value or Cost of Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Requirements</td>
<td>Exemplary Performance</td>
</tr>
<tr>
<td>Membership records actualised</td>
<td>Completeness, complete</td>
<td>100%</td>
</tr>
<tr>
<td>Workshops and courses developed</td>
<td>Rate</td>
<td>3/year</td>
</tr>
<tr>
<td>Newsletter published</td>
<td>Rate</td>
<td>Monthly</td>
</tr>
<tr>
<td>Recruitment activated</td>
<td>Rate</td>
<td>10 new members/month</td>
</tr>
<tr>
<td>Committee evaluated</td>
<td>Rate</td>
<td>Monthly</td>
</tr>
<tr>
<td>Board of directors evaluated</td>
<td>Rate</td>
<td>Quarterly</td>
</tr>
<tr>
<td>Organization audit conducted</td>
<td>Rate</td>
<td>2/year</td>
</tr>
</tbody>
</table>

Table 17. Performance Table for the Cooperative
<table>
<thead>
<tr>
<th>Responsibilities of members</th>
<th>Deficiencies in performance</th>
<th>Strategies</th>
</tr>
</thead>
</table>
| 1. Membership records actualized | 1. Significant. PIP = 2.0 | 1. Assign responsibilities  
Design contingencies |
| 2. Workshops and courses developed | 2. Not done | 2. Assign responsibilities |
| 4. Recruitment activated | 4. Recruitment not seen as priority | 4. Same as 1 |
| 5. Committees evaluated | 5. Never done | 5. Same as 1 |
| 7. Organization audit conducted | 7. Never done | 7. Same as 1 |

Table 18. A Strategic-Level Analysis of the Cooperative
typical level of 45% to the exemplary level of 100%. For approximately the same amount of money the store could buy a computerized scale which would improve the accuracy. Table 15 summarizes the stages of the analysis for the food store at the strategic level. The second column—the measures—lists the deficiencies in performance at this level.

A similar analysis for the co-op is summarized in Tables 17 and 18. Here also many accomplishments had been done. For those accomplishments that had not been neglected, high impact was found in two areas: measures relating to the newsletter being published, for which the PIP is 2.4, and measures relating to recruitment, for which the PIP is 2.3. Stakes were found significant in these areas.

Increasing the rate of publishing the newsletter from the current level of 5 issues per year to the exemplary level of 12 issues per year could result in an increase in information and consequently increased sales and membership base. Furthermore, if members became better educated about the co-op via the newsletter, they could be more involved in the co-op activities. With respect to recruitment, the stakes were found insignificant considering only the potential increase in capital resulting from the potential increase in buying deposits. More specifically, increasing the rate from the actual level of 13 new members per month to the exemplary level of 30 new members per month would result in yearly capital increase of only $5,070. In addition, sales would also increase.
Methods

Here again the BEM worksheet in Table 4 was used to troubleshoot the causes of those PIPs that would result in improving the system's operations. Table 19 shows an analysis at the strategic level.

In Table 16, the third column lists the strategies suggested in order to improve the deficiencies in performance for the food store. In Table 18, the third column lists the strategies suggested in order to improve the deficiencies in performance for the co-op. Those recommendations for both the food store and the co-op are summarized as follows.

1. For those accomplishments that had never been done (such as "marketing planned") it was suggested that responsibilities be assigned given that the workers receive proper guidance, clear directions, and necessary training before starting their jobs. An additional recommendation was to provide adequate feedback when necessary.

2. A feedback system should be designed for some tasks (e.g., "supplies stored").

3. For some accomplishments (e.g., "store managed") contingencies should be designed (e.g., delivering consequences for desirable performance).

4. Incentive systems should be designed when the contingencies seem to be aversive (e.g., "maintaining the work force").
<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>CAUSE</th>
<th>SUMMARY OF PERFORMANCE DEFICIENCIES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WHAT.</strong></td>
<td>Cleaning rooms</td>
<td>Lack defining and assigning responsibilities</td>
</tr>
<tr>
<td><strong>WHERE</strong></td>
<td>Store</td>
<td>Lack feedback system</td>
</tr>
<tr>
<td><strong>WHEN</strong></td>
<td>daily</td>
<td></td>
</tr>
<tr>
<td><strong>WHO</strong></td>
<td>performer: workers</td>
<td></td>
</tr>
<tr>
<td><strong>DESIRED PERFORMANCE: sweep floor and remove dust</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>UNDERSERVED PERFORMANCE: stand talking</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>WORTH</strong></td>
<td>potential for increase sales</td>
<td></td>
</tr>
<tr>
<td><strong>KNOWLEDGE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>1. PERFORMANCE SPECIFICATION</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Are standards set for all relevant performance elements?</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>3. Are standards clear and unambiguous?</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>4. Are the standards easy to measure?</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>5. Are the standards challenging?</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td><strong>II. FEEDBACK</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Does the performer receive feedback on a regular and consistent basis?</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>2. Is feedback provided on a timely basis?</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>3. Is feedback given in a manner that is helpful and constructive?</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td><strong>III. CONSEQUENCES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Do the existing consequences support the desired performance?</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>2. Do the existing consequences inhibit the undesired performance?</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td><strong>IV. TASK INTERFERENCE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Can the performer easily respond to the stimulus for action?</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>2. Does the performer have only one task to perform at a time?</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td><strong>V. PERSONNEL</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Are adequate resources available?</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>2. Are job procedures adequate and correct?</td>
<td>no</td>
<td></td>
</tr>
</tbody>
</table>
Tactical Level

Models

A performance table for the food store at the tactical level is shown in Table 20. Since some accomplishments at the strategic level had never been done, the respective duties were not analyzed. Also, at the tactical level some duties had never been done and therefore were not analyzed. Table 20 lists the accomplishments and respective duties for the food store, including the requirements for each duty. Table 20 also shows that duties were measured in terms of quality (accuracy and legibility) and quantity (timeliness and completeness). The achieved exemplary level for each requirement is also listed. The first column in Table 21 shows the models—the list of duties that needed improvement.

A similar analysis for the co-op is summarized in Tables 22 and 23. In Table 22 the co-op's accomplishments and respective duties are listed in the first column. Requirements were found to be completeness, rate, and timeliness. The level of exemplary performance for each requirement can be seen in the next column. Table 23 summarizes the stages of analysis at the tactical level for the cooperative. The first column—the models—lists the duties that needed improvement.
<table>
<thead>
<tr>
<th>Accomplishments</th>
<th>Requirements</th>
<th>Typical Value or Cost of Performance</th>
<th>Quality Performance</th>
<th>Total</th>
<th>PIP tuition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Accurate time</td>
<td>1. Timecard accuracy</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>2. Accurate name</td>
<td>2. Name accuracy</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>3. Accurate location</td>
<td>3. Location accuracy</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>4. Accurate date</td>
<td>4. Date accuracy</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Table 20. Performance Table for the Health Food Store
<table>
<thead>
<tr>
<th>A. MODELS</th>
<th>B. MEASURES</th>
<th>C. METHODS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duties:</td>
<td>Deficiencies in performance:</td>
<td>Tools:</td>
</tr>
<tr>
<td>Store managed:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Discount recorded</td>
<td>2. Significant. PIP = 2.0</td>
<td>Design contingencies</td>
</tr>
<tr>
<td>Supplies stored:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Supplies packed and labelled</td>
<td>1. Very great. PIP = 2.3</td>
<td>2. Feedback system</td>
</tr>
<tr>
<td>Store cleaned:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Work station</td>
<td>1. Significant. PIP = 3.3</td>
<td>1. Design contingencies</td>
</tr>
<tr>
<td>2. Rooms and bathrooms</td>
<td>2. Significant. PIP = 10.0</td>
<td>Feedback and guidance systems</td>
</tr>
<tr>
<td>3. Utensils cleaned</td>
<td>3. Significant. PIP = 5.0</td>
<td>2. Same as above</td>
</tr>
<tr>
<td>Work force maintained:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Personnel policies reviewed</td>
<td>1. No written personnel policies available</td>
<td>1. Assign responsibilities</td>
</tr>
<tr>
<td>2. Manager evaluated</td>
<td>2. Never done</td>
<td>Design contingencies</td>
</tr>
<tr>
<td>3. Workers recruited</td>
<td>3. Significant. PIP = 10.0</td>
<td>2. Same as above</td>
</tr>
</tbody>
</table>

Table 21. A Tactical-level Analysis of the Health Food Store
Table 22. Performance Table for the Cooperative: Tactical Level

<table>
<thead>
<tr>
<th>Accomplishments</th>
<th>Standard</th>
<th>Missouri</th>
<th>Actual Value or Cost of Performance</th>
<th>Cost or Value of Performance or Cost Total</th>
<th>FY Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Membership records</td>
<td>Completed 100%</td>
<td>Up to date</td>
<td>Same as 1</td>
<td>Same as 1</td>
<td>Same as 1</td>
</tr>
<tr>
<td></td>
<td>Completed 100%</td>
<td>All members included</td>
<td>Same as 1</td>
<td>Same as 1</td>
<td>Same as 1</td>
</tr>
<tr>
<td></td>
<td>Same as 1</td>
<td>Same as 1 and 2</td>
<td>Same as 1</td>
<td>Same as 1</td>
<td>Same as 1</td>
</tr>
<tr>
<td>Newsletter published,</td>
<td>Completed on time</td>
<td>6 weeks</td>
<td>Same as 1</td>
<td>Same as 1</td>
<td>Same as 1</td>
</tr>
<tr>
<td></td>
<td>Within two days</td>
<td>Within two days</td>
<td>Same as 1</td>
<td>Same as 1</td>
<td>Same as 1</td>
</tr>
<tr>
<td></td>
<td>Within a week</td>
<td>Within a week</td>
<td>Same as 1</td>
<td>Same as 1</td>
<td>Same as 1</td>
</tr>
<tr>
<td></td>
<td>4/year</td>
<td>4/year</td>
<td>Same as 1</td>
<td>Same as 1</td>
<td>Same as 1</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>A.MODELS</th>
<th>B.MEASURES</th>
<th>C.METHODS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duties:</td>
<td>Deficiencies in performance:</td>
<td>Tools:</td>
</tr>
<tr>
<td>Membership records actualized:</td>
<td>1. Membership cards</td>
<td>1. Significant. PIP = 2.0</td>
</tr>
<tr>
<td>1. Membership cards</td>
<td>2. Application forms</td>
<td>1. Assign responsibilities</td>
</tr>
<tr>
<td>2. Application forms</td>
<td>3. Membership list</td>
<td>2. Same as above</td>
</tr>
<tr>
<td>4. Skill file</td>
<td>Newsletter published:</td>
<td>4. Same as above</td>
</tr>
<tr>
<td>1. Content issues collected</td>
<td>1. Significant. PIP = 3.0</td>
<td>1. Fixed schedule</td>
</tr>
<tr>
<td>2. Newsletter mailed</td>
<td>2. Very great. PIP = 5.0</td>
<td>Appoint committee</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Procure funds</td>
</tr>
</tbody>
</table>

Table 22: A Tactical-level Analysis of the Cooperative
For the food store (Table 20) the highest impact area was found to be "recruitment" that is, workers recruited for the store (PIP = 10.0). Indeed, increasing the percentage of positions filled from the typical level of 10% to the exemplary level of 100% would result in an increase in the number of members involved, which could lead to an improvement in such duties as "store cleaned," "supplies stored," and "store managed." Although for the area of "cash register" the PIP was the highest, stakes were not found significant. Increasing the typical level of accuracy of $35 short (monthly) to the exemplary level of zero (or near zero) in the amount over or under in the cash register would result in a yearly saving of $420 which is an insignificant amount compared to other stakes found in the previous levels. In the area of "store cleaned," a high impact was found, with PIP of 10.0, 5.0, and 3.3 for "rooms cleaned," "utensils cleaned," and "work station cleaned," respectively. Changing these PIPs could have an indirect impact on sales by improving the store's appearance and consequently increasing the number of customers. For the accomplishments "containers refilled," "supplies packed and labelled," and "discount recorded" the impact was found insignificant.

The second column—the measures—in Table 21 summarizes the deficiencies in performance for the food store at the tactical level.
Table 22, the performance table for the co-op at the tactical level, shows the data obtained for the current (typical) performance. The first high impact area was found in the measures for rate and completeness of "newsletter mailed" (PIP = 5.0). However, "content issue collected" had a higher impact although a lower PIP (3.0). Actually, decreasing the time taken to collect the content of each issue for the newsletter from the typical level of six weeks to the exemplary level of two weeks would result in an increased frequency of published issues and consequently increased information, sales, and members' involvement. Furthermore, it could indirectly increase the rate of "newsletter mailed" since a higher rate of issues printed could result in a higher rate of issued mailed.

High PIPs were found in the area of "membership records actualized." A PIP of 2.0 was computed for each of the following duties: "membership cards," "membership list," and "skill file actualized." For "application forms actualized" the PIP was 1.4. Although no economic potential was found for these PIPs the impact of improving the necessary information for a membership base was found high.

The second column—the measures—in Table 23 summarizes the deficiencies in performance for the co-op at the tactical level.
Methods

The checklist in Table 4 here again was used to troubleshoot the causes of deficiencies found at the tactical level for the food stores. Table 24 shows a BEM worksheet used at this level to analyze the problem of a lack of accuracy at the cash register. As can be seen in Table 24, this problem was supposed to be due to the lack of a feedback system. Thus, a specific recommendation was given to solve this deficiency, that is, designing a feedback system for the workers so they would know how well they were performing. A graph showing the daily amount over or under the correct amount in the cash register was publicly posted. Nevertheless, as Figure 4 shows, it seemed that improvement could have resulted from a lack of assigned responsibility for the cash register. Consequently, the posted graph had no impact on the workers' performance. Therefore, assigning daily responsibility for the cash register was then suggested. Figure 4 also shows the success of the intervention following this recommendation.

Since many deficiencies were due to a lack of assigning responsibilities, specific suggestions were given to solve this problem. The lack of assigning responsibilities at the strategic level was due to a lack of defining those responsibilities at the previous (policy) level. Similarly, at the tactical level the lack of assigning responsibilities could be attributed to a lack of defining them. Thus, a "task priority flowchart" (Figure 5) was
<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>CAUSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHAT.</td>
<td></td>
</tr>
<tr>
<td>lack accuracy</td>
<td>If you get a &quot;NO&quot; answer to any of the questions below, then corrective action is required.</td>
</tr>
<tr>
<td>WHERE.</td>
<td></td>
</tr>
<tr>
<td>cash register</td>
<td>1. PERFORMANCE SPECIFICATION</td>
</tr>
<tr>
<td>WHEN.</td>
<td></td>
</tr>
<tr>
<td>daily</td>
<td>2. Are the standards known to the performer?</td>
</tr>
<tr>
<td>WHO.</td>
<td></td>
</tr>
<tr>
<td>PERFORMER</td>
<td>3. Are the standards reasonable and achievable by the performer?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Summary of Performance System Deficiencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>lack consistency to enforce standards</td>
</tr>
<tr>
<td>lack feedback system</td>
</tr>
<tr>
<td>lack assigning responsibility for the cash register</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Identify Existing Consequences For:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desired Performance:</td>
</tr>
<tr>
<td>Undesired Performance:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>UNDESIRED PERFORMANCE.</th>
<th>any amount short</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>WORTH</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>potential for saving money</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>J. KNOWLEDGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Does the performer know how to perform the desired action?</td>
</tr>
</tbody>
</table>
developed as a form of direction and an attempt to define and list the responsibilities for the workers. The flow chart would help the workers to know what to do when at the store. Each worker received a copy of the flowchart, and an enlarged copy of it was posted at the work station. Figure 6 is an example of the impact of this intervention in the area of cleaning the store. The percentage of work completed in this area had a significant increase from the baseline to the intervention phase.

Figure 4. Daily Amount Short at Cash Register
Figure 5. Task Priority Flowchart
Figure 6. Daily Percentage of Work Completed
The third column—the methods—in Table 21 summarizes the suggested tools to be utilized to correct the deficiencies detected for the food store at the tactical level. Similarly, Table 23 summarizes the recommendations given to correct the deficiencies for the co-op at the tactical level.

**Logistic Level**

**Models**

Table 25, a performance table for the co-op at the logistic level, shows the data obtained for the duties for which deficiencies were related to material needs. At the previous level (tactical) it was assessed through the BEM worksheets that the only task for which deficiencies were related to material needs was "content issue collected"; the lack of a schedule seemed to be one of the causes of the deficiency in this area. Thus, the first column in Table 25 lists the tasks necessary to accomplish this duty. Accordingly, the requirements (timeliness, completeness, and novelty) were listed, as well as the correspondent exemplary level of performance. The models—those tasks—are listed in the first column of Table 26.

**Measures**

The data for the actual performance at the logistic level, listed in Table 25, show that most tasks had never been done. Consequently, PIPs were not computed nor stakes analyzed.
<table>
<thead>
<tr>
<th>Accomplishments</th>
<th>Standards</th>
<th>Actual Value or Cost of Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Requirements</td>
<td>Typical</td>
</tr>
<tr>
<td>Content issues collected</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Committee appointed</td>
<td>Timeliness</td>
<td>Annually</td>
</tr>
<tr>
<td>2. Areas to cover listed</td>
<td>Completeness</td>
<td>100%</td>
</tr>
<tr>
<td>3. Schedule fixed</td>
<td>Timeliness</td>
<td>Monthly</td>
</tr>
<tr>
<td>4. Authors procured</td>
<td>Novelty</td>
<td>Creative</td>
</tr>
<tr>
<td>5. Phone calls made</td>
<td>Timeliness</td>
<td>According to previous schedule</td>
</tr>
<tr>
<td>Resources</td>
<td>Deficiencies</td>
<td>Supplies</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------</td>
<td>----------</td>
</tr>
<tr>
<td>Content issues collected:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Committee appointed</td>
<td>1. Significant</td>
<td>1. Recruit members</td>
</tr>
<tr>
<td>2. Areas to cover listed</td>
<td>2. Accomplishments not been identified</td>
<td>Define standards</td>
</tr>
<tr>
<td>3. Schedule fixed</td>
<td>3. Same as above</td>
<td>2. Same as above</td>
</tr>
<tr>
<td>4. Phone calls made</td>
<td>4. Significant</td>
<td>3. Same as above</td>
</tr>
</tbody>
</table>
Methods

Tentative recommendations were given to solve the co-op's deficiencies at the logistic level. Table 26 summarizes those suggestions in the third column—the methods.
CHAPTER IV

SUMMARY

The present research demonstrated the feasibility of using the performance audit approach in a small business, a food co-op, with less than 200 members and approximately $100,000 in sales in 1982. Applying the principles of Gilbert's approach in a cooperative was shown to be viable and appropriate. The present study included a performance analysis of an organization as a whole system as well as a performance analysis of specific workers' deficiencies. Individual's responsibilities (strategic and tactical levels) and institution's goals (policy level) were analyzed together in order to find out their consistency with higher goals of the organization (philosophical and cultural levels).

Most problems of the present analysis consisted of collecting data not currently available, e.g., the indicators and levels of exemplary performance and the levels of the typical performance at the policy level. Much time was spent to figure out the actual data concerning those indicators. Future studies could include surveys among organizations with similar philosophical goals. Thus, the policy level analysis would seem to be more feasible, that is, more easily achieved.

Conclusions deriving from the present study show how systems fail to diagnose their problems mainly by looking at lower vantage...
levels, such as logistic and tactical, rather than at higher levels, such as philosophical and cultural. During the initial approach to this organization, when staff members were asked what types of improvements were needed, only tactical and logistic problems were mentioned (e.g., supplies incorrectly weighed and priced, containers not refilled, store not cleaned, etc.) Nevertheless, the present analysis detected major weaknesses in higher levels of the organization. At the philosophical level, for instance, co-op members attending board of directors meetings experienced difficulty in reaching an agreement on the ultimate goals of the food co-op. These seemingly unresolvable philosophical issues concerning values and purposes were debated at great length without productive results. Also at the policy level, the system showed some weaknesses in areas such as members' involvement (low average monthly purchase and low volunteerism) and recruitment system (low average of new members per month and low percentage of members per target population.)

A major conclusion of this analysis is that the areas of incompetent, inefficient performance within the organization were traced to weaknesses in its management system, thus confirming Gilbert's theory that the ultimate cause of performance deficiencies can be found in a deficiency of the management system (1978, p. 76). More specifically, "incompetence may result from the failure of management to define all of its important accomplishments and to assign responsibilities for them" (p. 78). Kreitner (1976) also believed that high
rates of failure of the current generation of food co-ops can be attributed to problems of management—financial or personnel.

The data collected in this evaluation have the potential to assist the co-op in developing a system of adequate control, organization clarity, and efficiency, as well as access to information needed for effective management. Results show that significant improvement seems to be necessary in the area of membership base by increasing members' involvement in the co-op's operations and by activating the recruitment system.

Potential solutions for the deficiencies seems to be in the management system, i.e., members would perform efficiently. Therefore, as a result of developing management skills, members' involvement could improve and consequently an increase in sales could result. Activating the recruitment system also seems to be a potential solution to improve the performance system.

In conclusion, the present study is intended to serve as an educational and evaluative tool to help the system identify weak areas needing improvement in order to achieve the ultimate or philosophical goals of the organization.
APPENDIX

BEM Worksheets
<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>CAUSE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WHAT</strong></td>
<td><strong>CAUSE</strong></td>
</tr>
<tr>
<td>LOW AVERAGE of new members</td>
<td>1. Performance Specification (b) When the answer is NO, corrective action is required.</td>
</tr>
<tr>
<td></td>
<td>1. Standards exist for all desired performance requirements?</td>
</tr>
<tr>
<td></td>
<td>2. Are standards known to the performer?</td>
</tr>
<tr>
<td></td>
<td>3. Are standards seen as reasonable and attainable by the performer?</td>
</tr>
<tr>
<td></td>
<td>4. Are the standards administered consistently?</td>
</tr>
<tr>
<td>WHERE</td>
<td>FEEDBACK</td>
</tr>
<tr>
<td>AT CO-OP</td>
<td>1. Does the performer receive, on a regular and consistent basis, any information about other performance?</td>
</tr>
<tr>
<td>WHEN</td>
<td>2. Measurement:</td>
</tr>
<tr>
<td>MONTHLY</td>
<td>a) Are all important aspects being measured?</td>
</tr>
<tr>
<td></td>
<td>b) Are the units of measurement meaningful to the performer?</td>
</tr>
<tr>
<td>WHO</td>
<td>3. Timing:</td>
</tr>
<tr>
<td>PERFORMER</td>
<td>a) Does the performer receive the information on time?</td>
</tr>
<tr>
<td>non-members (CUSTOMERS)</td>
<td>b) Does the performer receive the information frequently?</td>
</tr>
<tr>
<td>DESIRED PERFORMANCE</td>
<td>4. Delivery/Display:</td>
</tr>
<tr>
<td>JOIN THE CO-OP</td>
<td>a) Is the information specific enough?</td>
</tr>
<tr>
<td></td>
<td>b) Can the information be easily interpreted by the performer?</td>
</tr>
<tr>
<td>UNDESIRABLE PERFORMANCE</td>
<td>5. Improvement or deterioration of performance over time be determined by the performer?</td>
</tr>
<tr>
<td>BE A NON-MEMBER (CUSTOMERS)</td>
<td>6. CONSEQUENCES:</td>
</tr>
<tr>
<td></td>
<td>a) Do the existing consequences support the desired performance?</td>
</tr>
<tr>
<td></td>
<td>b) Do the existing consequences inhibit the undesired performance?</td>
</tr>
<tr>
<td></td>
<td>7. TASK INTERFERENCE:</td>
</tr>
<tr>
<td></td>
<td>a) Are the resources available?</td>
</tr>
<tr>
<td></td>
<td>b) Are the resources available?</td>
</tr>
<tr>
<td>WORTH</td>
<td>c) Adequate support equipment?</td>
</tr>
<tr>
<td>EASES</td>
<td>d) Adequate training?</td>
</tr>
<tr>
<td>PIP = 2.3</td>
<td>e) Adequate personnel?</td>
</tr>
<tr>
<td>STAKES</td>
<td>f) Adequate equipment?</td>
</tr>
<tr>
<td>PIP = 15</td>
<td>4. Are the job procedures adequate and consistent?</td>
</tr>
<tr>
<td>$64,400 annual increase</td>
<td>KNOWLEDGE</td>
</tr>
<tr>
<td>IN CAPITAL</td>
<td>1. Does the performer know how to perform the desired action?</td>
</tr>
<tr>
<td>$525,504 annual</td>
<td>increase in sales</td>
</tr>
<tr>
<td><strong>PROBLEM</strong></td>
<td><strong>CAUSE</strong></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td><strong>WHAT</strong></td>
<td><strong>Summary of Performance System Dysfunctions</strong></td>
</tr>
<tr>
<td>low average members on committees</td>
<td>Lack defining roles of committees</td>
</tr>
<tr>
<td><strong>WHERE</strong></td>
<td>Lack feedback system</td>
</tr>
<tr>
<td>at co-op</td>
<td></td>
</tr>
<tr>
<td><strong>WHEN</strong></td>
<td></td>
</tr>
<tr>
<td><strong>WHO</strong></td>
<td>Identify existing Consequences For:</td>
</tr>
<tr>
<td>PERFORMER</td>
<td>Desired Performance:</td>
</tr>
<tr>
<td>members</td>
<td>long meetings</td>
</tr>
<tr>
<td>DESIRED PERFORMANCE: work on committees</td>
<td>Undesired Performance:</td>
</tr>
<tr>
<td><strong>UnDesired PERFORMANCE: be just a member</strong></td>
<td>more free time</td>
</tr>
<tr>
<td><strong>WORTH</strong></td>
<td></td>
</tr>
<tr>
<td>STAKES PIP = 1.6</td>
<td></td>
</tr>
<tr>
<td>increased involvement</td>
<td></td>
</tr>
<tr>
<td><strong>KNOWLEDGE</strong></td>
<td></td>
</tr>
<tr>
<td>1. Does the performer know how to perform the desired action?</td>
<td><strong>YES</strong></td>
</tr>
</tbody>
</table>

If you get a "NO" answer to any of the questions below, then corrective action is required.
<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>CAUSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHAT</td>
<td>If you get a &quot;NO&quot; answer to any of the questions below, then corrective action is required.</td>
</tr>
<tr>
<td>low average of candidates for board of directors positions</td>
<td>1. Are all of the job responsibilities being monitored?</td>
</tr>
<tr>
<td>WHERE</td>
<td>2. Are standards known to the performer?</td>
</tr>
<tr>
<td>at co-op</td>
<td>3. Are standards seen as reasonable and achievable by the performer?</td>
</tr>
<tr>
<td>WHEN</td>
<td>4. Are the standards set high enough?</td>
</tr>
<tr>
<td>open positions at GMM</td>
<td>5. Are the standards administered consistently?</td>
</tr>
<tr>
<td>WHO</td>
<td>F- FEEDBACK</td>
</tr>
<tr>
<td>PERFORMER</td>
<td>6. Does the performer receive, on a regular and consistent basis, any information about his or her performance?</td>
</tr>
<tr>
<td>members</td>
<td>7. Is the information meaningful to the performer?</td>
</tr>
<tr>
<td>DESIGN PERFORMANCE:</td>
<td>8. Does the performer receive the information in a timely manner?</td>
</tr>
<tr>
<td>for BoD positions</td>
<td>9. Does the performer receive the information in a meaningful manner?</td>
</tr>
<tr>
<td>UNDESIGN PERFORMANCE:</td>
<td>10. Can the information be easily interpreted by the performer?</td>
</tr>
<tr>
<td>be just a member</td>
<td>11. Can the performer's performance be accurately evaluated by the performer?</td>
</tr>
<tr>
<td>WORTH</td>
<td>III. CONSEQUENCES</td>
</tr>
<tr>
<td>NAMES</td>
<td>1. Do the existing consequences support the desired performance?</td>
</tr>
<tr>
<td>PIP = 2.0</td>
<td>2. Do the existing consequences inhibit the undesired performance?</td>
</tr>
<tr>
<td>more democratic system</td>
<td></td>
</tr>
<tr>
<td>X-KNOWLEDGE</td>
<td>III. TASK INTERFERENCE</td>
</tr>
<tr>
<td>1. Can the performer easily recognize when the need for action is present?</td>
<td>x</td>
</tr>
<tr>
<td>2. Does the performer have only one task to perform at a time?</td>
<td>x</td>
</tr>
<tr>
<td>3. Are adequate resources available?</td>
<td>x</td>
</tr>
<tr>
<td>at time?</td>
<td>4. Is the performer satisfied with the support provided?</td>
</tr>
<tr>
<td>Information:</td>
<td>5. Are the information systems adequate and correct?</td>
</tr>
<tr>
<td>6. Are the information sources adequate and correct?</td>
<td>x</td>
</tr>
<tr>
<td>7. Are the information sources adequate and correct?</td>
<td>x</td>
</tr>
<tr>
<td>8. Are the information sources adequate and correct?</td>
<td>x</td>
</tr>
<tr>
<td>9. Are the information sources adequate and correct?</td>
<td>x</td>
</tr>
<tr>
<td>PROBLEM</td>
<td>CAUSE</td>
</tr>
<tr>
<td>---------</td>
<td>-------</td>
</tr>
<tr>
<td>WHAT</td>
<td>If you get a &quot;NO&quot; answer to any of the questions below, then corrective action is required.</td>
</tr>
<tr>
<td>low attendance</td>
<td><strong>YES</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Summary of Performance System Deficiencies</strong></td>
</tr>
<tr>
<td></td>
<td>Requirement to attend meeting not enforced</td>
</tr>
<tr>
<td></td>
<td>Poor information system</td>
</tr>
<tr>
<td></td>
<td>Lack feedback system</td>
</tr>
<tr>
<td>WHERE</td>
<td><strong>FEEDBACK</strong></td>
</tr>
<tr>
<td>co-op's general membership meetings</td>
<td>1. does the performer receive, on a regular and consistent basis, any information about the job performance?</td>
</tr>
<tr>
<td></td>
<td>2. Measurement:</td>
</tr>
<tr>
<td></td>
<td>a) Are all relevant requirements being measured?</td>
</tr>
<tr>
<td></td>
<td>b) Are the relevant requirements being measured effectively?</td>
</tr>
<tr>
<td></td>
<td>c) Are the units of measurement meaningful to the performer?</td>
</tr>
<tr>
<td>WHEN</td>
<td><strong>QUARTERLY</strong></td>
</tr>
<tr>
<td></td>
<td><strong>CONSEQUENCES</strong></td>
</tr>
<tr>
<td></td>
<td>1. Do the existing consequences support the desired performance?</td>
</tr>
<tr>
<td></td>
<td>2. Do the existing consequences inhibit the undesired performance?</td>
</tr>
<tr>
<td>WHO</td>
<td><strong>PERFORMER</strong></td>
</tr>
<tr>
<td>Desired performance:</td>
<td><strong>TASK INTERFERENCE</strong></td>
</tr>
<tr>
<td>attend GM</td>
<td>1. Can the performer easily recognize when the stimulus for action is present?</td>
</tr>
<tr>
<td></td>
<td>2. Does the performer have only one task to perform at a time?</td>
</tr>
<tr>
<td></td>
<td>3. Are adequate resources available?</td>
</tr>
<tr>
<td></td>
<td>a) time</td>
</tr>
<tr>
<td></td>
<td>b) Funds or support equipment?</td>
</tr>
<tr>
<td></td>
<td>4. Are the job procedures adequate and correct?</td>
</tr>
<tr>
<td></td>
<td>5. Does the performer know how to perform the desired action?</td>
</tr>
<tr>
<td>UNDESIGNED PERFORMANCE:</td>
<td>do not attend GM</td>
</tr>
<tr>
<td></td>
<td><strong>KNOWLEDGE</strong></td>
</tr>
<tr>
<td>WORTH</td>
<td><strong>SKILL PIP = 2.0</strong></td>
</tr>
<tr>
<td>Increased involvement</td>
<td></td>
</tr>
<tr>
<td>PROBLEM</td>
<td>CAUSE</td>
</tr>
<tr>
<td>---------</td>
<td>-------</td>
</tr>
<tr>
<td><strong>WHAT</strong></td>
<td><strong>CAUSE</strong></td>
</tr>
<tr>
<td>low average order</td>
<td>- If you get a &quot;NO&quot; answer to any of the questions below, then corrective action is required.</td>
</tr>
<tr>
<td>purchase</td>
<td></td>
</tr>
<tr>
<td><strong>WHERE</strong></td>
<td></td>
</tr>
<tr>
<td>at food store</td>
<td></td>
</tr>
<tr>
<td><strong>WHEN</strong></td>
<td></td>
</tr>
<tr>
<td>monthly</td>
<td></td>
</tr>
<tr>
<td><strong>WHO</strong></td>
<td></td>
</tr>
<tr>
<td>FSN OWNER</td>
<td></td>
</tr>
<tr>
<td>members</td>
<td></td>
</tr>
<tr>
<td>DESIRED PERFORMANCE:</td>
<td></td>
</tr>
<tr>
<td>shop more at store</td>
<td></td>
</tr>
<tr>
<td>UNDESIRED PERFORMANCE:</td>
<td></td>
</tr>
<tr>
<td>shop somewhere else</td>
<td></td>
</tr>
<tr>
<td><strong>WHAT</strong></td>
<td></td>
</tr>
<tr>
<td>WORTH</td>
<td></td>
</tr>
<tr>
<td>Marks</td>
<td></td>
</tr>
<tr>
<td>PIP = 2.3</td>
<td></td>
</tr>
<tr>
<td>$48,796 annual</td>
<td></td>
</tr>
<tr>
<td>increased in sales</td>
<td></td>
</tr>
<tr>
<td>PROBLEM</td>
<td>CAUSE</td>
</tr>
<tr>
<td>---------</td>
<td>-------</td>
</tr>
<tr>
<td>low rate publishing newsletter</td>
<td>at co-op</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>CAUSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHAT</td>
<td>If you get a &quot;NO&quot; answer to any of the questions below, then corrective action is required.</td>
</tr>
<tr>
<td>poor recruitment (workers)</td>
<td></td>
</tr>
<tr>
<td>1. PERFORMANCE SPECIFICATION</td>
<td>x</td>
</tr>
<tr>
<td>a. Are standards exist for all aspects of performance requirements?</td>
<td>x</td>
</tr>
<tr>
<td>b. Are standards known to the performer?</td>
<td>x</td>
</tr>
<tr>
<td>c. Are standards seen as reasonable and attainable by the performer?</td>
<td>x</td>
</tr>
<tr>
<td>d. Have the standards been met?</td>
<td>x</td>
</tr>
<tr>
<td>e. Are the standards administered consistently?</td>
<td>x</td>
</tr>
<tr>
<td>WHERE</td>
<td>at food store</td>
</tr>
<tr>
<td>WHEN</td>
<td>daily</td>
</tr>
<tr>
<td>WHO</td>
<td>PERFORMER</td>
</tr>
<tr>
<td>DIFFICULTY PERFORMANCE</td>
<td>100% positions filled</td>
</tr>
<tr>
<td>UNDERINFORMED PERFORMANCE</td>
<td>less than 100% positions filled</td>
</tr>
<tr>
<td>WORTH</td>
<td></td>
</tr>
<tr>
<td>GAINS</td>
<td>PIP = 10</td>
</tr>
<tr>
<td>increased involvement</td>
<td></td>
</tr>
<tr>
<td>KNOWLEDGE</td>
<td></td>
</tr>
<tr>
<td>1. Does the performer know how to perform the desired action?</td>
<td></td>
</tr>
</tbody>
</table>

Summary of Performance System Deficiencies:
- lack consistency to administer standards
- lack feedback system

Remember that the text may contain abbreviations or specialized terms that are context-dependent.


