IMPROVING A WORKFLOW IN THE INSURANCE INDUSTRY: A FOCUSED MANAGEMENT APPROACH

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Abstract

Focused Management Technology (FMT) is a managerial approach to solving an organization's problems, designed to improve processes and increase profits. It is based on the integration of the well-established Just In Time (JIT), Total Quality Management (TQM), Theory of Constraints (TOC), Global and Effective Performance Measurements (GEPM) and Complete Kit (CK) techniques. These techniques and their underlying philosophies are modified and tailored to meet the special environment and the specific needs of the insurance industry. This article explains the integration of FMT into the insurance industry, and demonstrates a successful implementation of FMT concepts in a life insurance department of a leading Israeli insurance company.

Introduction

The Emergence of a New Theory of Manufacturing

The last two decades have witnessed the emergence of new management philosophies and techniques which, when implemented, completely change manufacturing paradigms and practices. These modes of management have made a significant contribution to production, and their implementation has been known to turn losing businesses into profitable ones (see, for example, Schonberger, [1986]). Among the emerging philosophies, the leaders are Drucker [1990] and Ronen [1992]:

1) Just in Time (JIT);

2) Total Quality Management (TQM);

3) The Theory of Constraints (TOC);

4) Global and Effective Performance Measurements (GEPM); and

5) The Complete Kit Concept (CK).

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These philosophies or theories, diverse as they are, can be seen as complementing each other. Every one of them has brought on changes in manufacturing companies as well as in service organizations, military units and non-profit organizations. The Focused Management Technology (FMT), modifies and tailors these philosophies, techniques and methods, to meet a given environment, in our case - the special environment and the specific needs of the insurance industry. This article will review the implications of the use of these techniques and philosophies to the insurance industry.

The FMT Components

Just in Time (JIT) and Total Quality Management (TQM), the pioneers among the new management theories that encourage the use of common sense in operations management, were first implemented at several Japanese plants in the 1960s. They began to be studied in the West in the late 1970s, and have been seriously adopted there only since the 1980s, Schonberger, ch. 2 [1982]. Later on, the theory and practice of the Theory of Constraints (TOC) emerged, adding the global approach, the system view and the focusing approach to operations management and changing the traditional view of production, Goldratt and Cox [1986]; Schragenheim and Ronen [1990]. The Complete Kit (CK) concept has added simple and practical techniques to enable the use of these philosophies and supply day-to-day tools to implement them, Ronen [1992].

Wherever the new theories have been implemented, the results have been evident and measurable. Kaplan [1984], Schonberger [1986], Deming [1986] and Ronen and Starr [1990] mention a number of advantages achieved at the plants which adopted them:

- More throughput
- Lower operating expenses
- An improvement in product or service quality
- Less work in process
- Better response time
- Better due date performance.

The firms that implemented the new theories witnessed an increase in their competitiveness, due to the considerable increase in both short- and long-term profitability, brought about by the shortened response time and increased productivity.

Just in Time (JIT)

JIT is a term that was originally used synonymously with "kanban", which is the name for a specific Japanese inventory replenishment system developed by Toyota. Today, managers use JIT not only as an inventory system but also as a first principle of the new management theory, which is valid for manufacturing as well as for service organizations. JIT simply means: deliver the goods to the right place at the moment when they are needed and in the right quantity. The JIT approach is quite simple, Schonberger ch. 2 [1982]: "Produce and deliver finished goods just in time to be sold, sub-assemblies just in time to be assembled into finished goods, fabricate parts just in time to go into sub-assemblies and purchase materials just in time to be transformed into fabricated parts".

The underlying philosophy maintains that excess production is just as detrimental as under-production, since it camouflages the real problems and diverts attention from them. Excess production consumes resources and services that could be better employed elsewhere. Additional components of the principle are: small-lot production; Total Quality Control (TQC); Total Productive Maintenance (TPM); uncovering problems at any stage of the operations, and solving them as part of the work process; creating a "Process of Ongoing Improvement"; worker participation in process improvements and in production problem-solving.

JIT ought to be seen as a general theory of management, whose principles may be implemented in development, paperwork, administration, services, etc.

Total Quality Management (TQM)

TQM, which has been belatedly recognized by the U.S. Department of Defence, DoD [1989], is a combination of:

1. The TQC (Total Quality Control) approach, which is part of the JIT theory, and holds that quality is everyone's business, and everyone in the organization is a partner in an ongoing improvement process, Starr ch.6 [1989].

2. Deming's quality philosophy, Deming [1986].

The noted quality expert Dr. W. Edward Deming claimed that quality must be created during a controlled process. The workers must be responsible for their operations, do things right the first time, and correct mistakes while they are occurring. Deming estimated that most faults are due to process errors and not to workers' negligence, thus it is the

responsibility of management to improve the system and reduce mistakes and failures. Workers should therefore be encouraged to report faults and distortions, to enable process faults to be located and corrected. Quality control that is carried out at the end of the process is not efficient since it cannot prevent the additional costs of reworking or rejection because of faults discovered only at the end of the process (and that will recur again and again). Moreover, the later on in the process that the fault is discovered, the higher the cost of correcting it. It is therefore imperative to locate the fault as soon as it occurs and not to wait until the end of the process. Deming implemented his methods with telling effect in Japan, and is counted today amongst those responsible for the success of Japanese industry.

Deming rejected the procedures that had been accepted in the past, according to which the quality was the responsibility of the quality control department, maintaining that quality was the responsibility of the worker producing the product or the service and advocating that quality should be designed and built into the process.

At the end of the 1970s, Western industry began to be exposed to the Japanese production and quality management methods and started to implement them with success. The concept of total quality control was also found to be suitable for non-industrial areas and organizations: banks and financial institutions, service organizations, hospitals, and even the military implemented the principles of total quality control with success. As it grew in importance and became more widely accepted, the name was also changed from Total Quality Control (TQC) to Total Quality Management (TQM).

Theory of Constraints (TOC)

The TOC is a way of looking and focusing at a system's constraints and managing them as they change from time to time. Bottleneck identification and exploitation and, afterwards, breaking or offloading the bottleneck, is a necessary stage in management's drive for increased throughput and enhanced productivity.

The TOC was developed in continuation of the OPT theory, Ronen and Starr [1990]. It includes a seven-step methodology which is a generalized formulation of a normative management process, Schragenheim and Ronen [1990].

The methodology is verbalized as follows, Ronen and Starr [1990]):

1. Set up the system's goal.
2. Determine measures of performance.

3. Identify the system's constraint(s).
4. Decide how to exploit the system's constraint(s).
5. Subordinate everything else to the above decision.
6. Elevate the system constraint(s).
7. If, in the previous steps, the constraint has been violated, go back to step 3, but don't let inertia become the system's constraint.

Included in the TOC are techniques for locating the firm's main problems and methods to solve them. The TOC approach also stresses the importance of the implementation process as a principal factor in success.

It was only natural that managements of non-manufacturing organizations would learn the main concepts of the new approach and try to apply them to their environment. Indeed, the emergence of the new theory of manufacturing has been followed by a "silent" management revolution in service organizations.

Global and Effective Performance Measurements (GEPM)

The behavior of workers and managers is influenced by the performance measures by which they are assessed, as is the behavior of entire divisions, departments, areas, plants and projects. The experience accumulated on the subject of implementing changes shows that only too often the factor that hampers the process of change is the use of measures that do not suit the new approaches we are trying to implement. For example, rewards based only on quantities will lead workers and managers to prefer producing quantity rather than quality; measuring a hi-tech industry project strictly according to profit-loss criteria is likely to encourage the application of non-relevant considerations in make-or-buy decisions, and in deciding whether or not to employ sub-contractors.

Similarly, inappropriate use of traditional costing approaches will hamper the firm's efforts to increase its market share or take advantage of opportunities that may arise, Kaplan [1984].

The correct choice of measuring techniques, parameters, costing, and control, which is the clear responsibility of management, is the difference between improving organizational performance or not doing so. The performance measurements should be global and effective in a way that an increase in them will bring the system closer to its goal.

The Complete Kit (CK) Concept

One of the fundamentals of good operations management practices that is rarely discussed in the literature is the "complete kit" concept, which suggests that work should not start until all the items required for completion of the job are available, Ronen [1992]. These items (the kit) include components, tools, drawings and information. A complete kit is the set of components, drawings, documents and information needed to complete a given assembly, sub-assembly or process. A complete kit is the readiness of this kit prior to release to the shop floor. Starting a job with an incomplete kit means more labor time to finish the job, longer lead time, more work in process, reduction of throughput, poor quality and impairment of due date performance.

In paperwork environments the rule is to start working only if the kit is complete. For example, in the insurance industry the life insurance department will not start working unless the kit includes all the documents and information needed (i.e., medical results and signed forms, complete forms on beneficiaries bank account number, etc.) This means that no insurance policy in going to be issued unless all documents are ready. In this example, a "gater" is assigned, and he or she is the only person authorized to release jobs to the office floor. Clearly you cannot finish the work if you are missing a document or a form. The main point is not to start until all the documents are on hand.

The FMT Philosophy

FMT is the integration of the five managerial philosophies. Experience shows, Ronen [1992]; Cameron [1986a, 1986b] that using only one method yields only partial success to the organization.

The FMT approach integrates the five methodologies and other techniques to improve the system. Though these concepts are simple and even obvious, management often has substantial difficulties in applying them. Thus, the FMT philosophy mainly focuses on the implementation process, and tailors a specific plan for each organization. Indeed, the differences between manufacturing organizations and service organizations, as well as the differences among the various service organizations themselves, call for different implementation models of the concepts for each industry.

The FMT implementation methodology starts with identification of the company's main problems. From this point on, the process continues in two directions: a) finding specific

solutions for the firm's specific problems, and b) introducing the FMT techniques and thus increasing throughput, reducing operating expenses, handling inventories properly, reducing cycle times, improving quality and positioning the firm with better due date performance. Usually, the two modes of work go together.

The introduction of the FMT techniques starts with the education and training of top management. After this stage, all the company's employees go through seminars and workshops to use and apply the FMT techniques.

The field implementation starts with the application of JIT, TOC and the Complete Kit concepts. This usually turns the organization into a "lean and mean" one, gaining better response time, more throughput and improved due date performance. Only after this stage is it appropriate to address TQM. At the same time, teams start to work on proper performance measurements and the improvement of critical processes.

The paper now will demonstrate a simple implementation of FMT, through a case study which has recently been carried out in a leading Israeli insurance company.

A Case Study

The life insurance department in a leading Israeli insurance company was facing several severe problems.

Relatively Long Lead Time: The measurement of the lead time starts after the agent/broker gets the signed proposal from the client. He then sends it or brings it himself to the insurer's main office. The underwriting process is then applied to the application. The policy is issued and delivered to the agent, who in turn, delivers it to the client.

In July 1990 the average lead time was 27 days (with a standard deviation of 9.5 days).

Low Quality: The frequency of substantial errors (e.g., wrong recording of the beneficiaries, wrong recording of the insurance sums, wrong recording of the insurance type, issuing unapproved policies) was relatively high. We found that in July 1990 the average rate of defective policies was ten percent.

High level of Work in Process: Hundreds of files of insurance proposals were waiting for completion of the underwriting process.

In the face of clear indications of increased client dissatisfaction, the company's management came to realize the necessity for process improvement.

The reader should take into consideration two major aspects in which the Israeli insurance market differs from the American market:

a. The important role of agents/brokers in the market. Not only do they help the insured to select the proper insurance policy - they will usually also advise him from which insurer to acquire it. Very seldom do the insured insist on making the insurer selection themselves. The Israeli market is semi-competitive, i.e., the competition is over brokers and not directly over the "final" consumers (the insured).

b. The insurance policies are not "closed". There is always room for bargaining about major clauses, especially on group and collective policies. The brokers are "experts" in bargaining. Hence, quality control and management procedures are called for.

The Method

Education and Training

Implementation was carried out by the employees in the company. The goal was to increase throughput and earnings, without laying off people. The name of the game was education and training.

The first move was an "in-house" management workshop in which the basic concepts of FMT were presented and the problems defined in terms of these basic concepts.

This workshop was followed by a four-day seminar held in two sessions of two days each. All top and middle-level managers participated in this seminar. The first two days were devoted to a general detailed introduction of FMT. The participants were exposed to successful implementations of FMT in various organizations. After these two days there was a ten-day break. An assignment was given to all participants: to check the validity of FMT to the organization as a whole, and to their immediate environment in particular.

The second two-day session was conducted by the participants themselves. Managers described and defined problems, and evaluated the application of FMT solutions. The seminar ended with a consensus about the validity of FMT for the company and with a clear, agreed operational plan for process improvement.

Simple Tools

Simple statistical and presentation tools enabled better analysis of the organizational processes and constraints from a global point of view. Developing easy-to-see quality, i.e., measurable standards of quality, is a main principle of TQM, as simple techniques such as small transfer lots are basic tools of JIT.

A simple flow-chart enabled managers to determine the process flow and to identify the bottleneck (in this case - the underwriting activity). Pareto analysis, diagrams (Figures 1 and 2) enabled a focus on the main determinations of the lead time and the main types of errors. A control chart allowed permanent control over the rate of defective policies.

Error Classification

Figure 2, the Pareto chart, demonstrates that the most frequent error is wrong recording of the beneficiaries' names, which is only a "technical" error. But the other frequently occurring errors are definitely material. In twelve pecent of the defective policies the employees found wrong identification of the insurance collective, i.e., wrong items and tariffs. Other typical errors were: wrong recording of the insured sums, and a seven percent rate of serious underwriting faults. They also found a material rate (seven percent) of unauthorized issuance of policies.

FIGURE 1 – ANALYSIS OF THE LEAD TIME
PARETO DIAGRAM

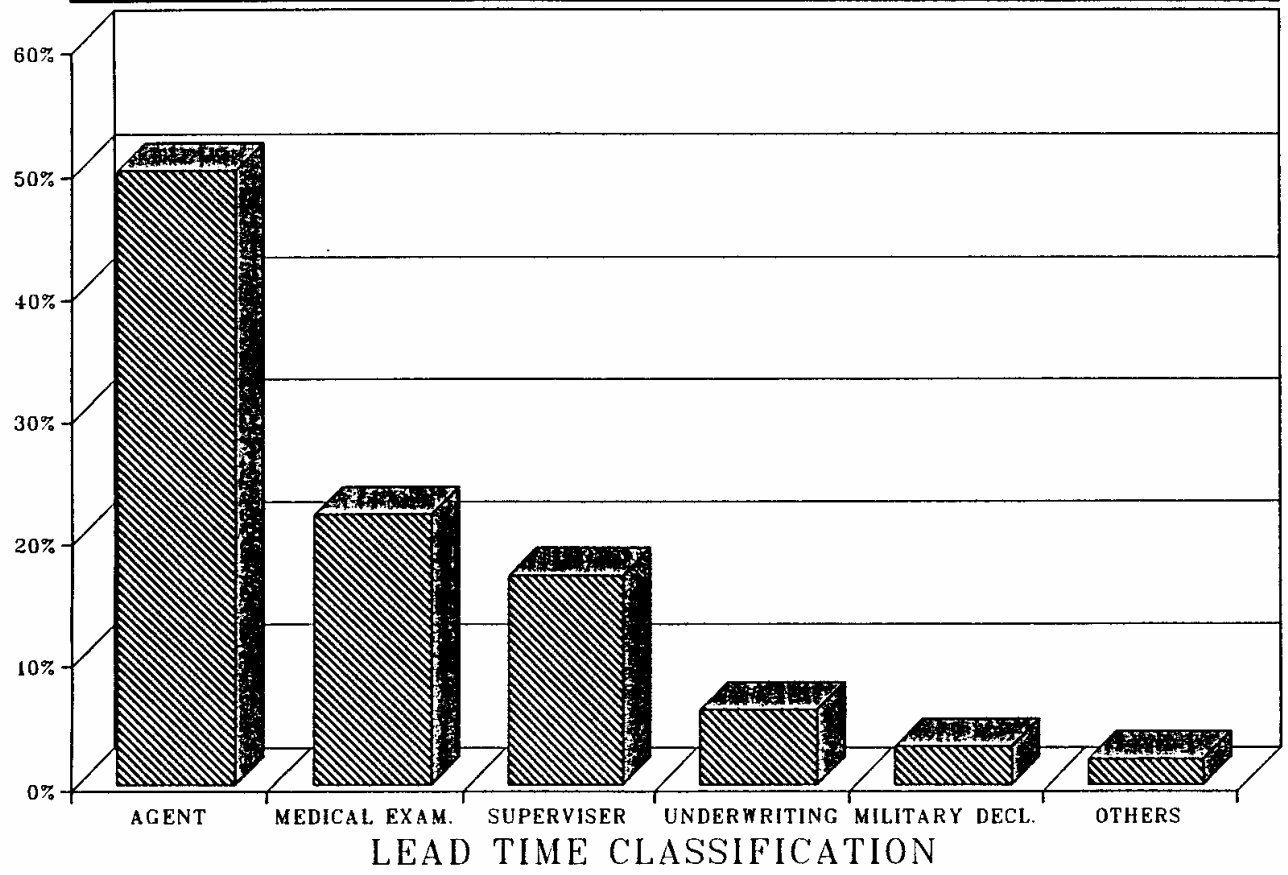
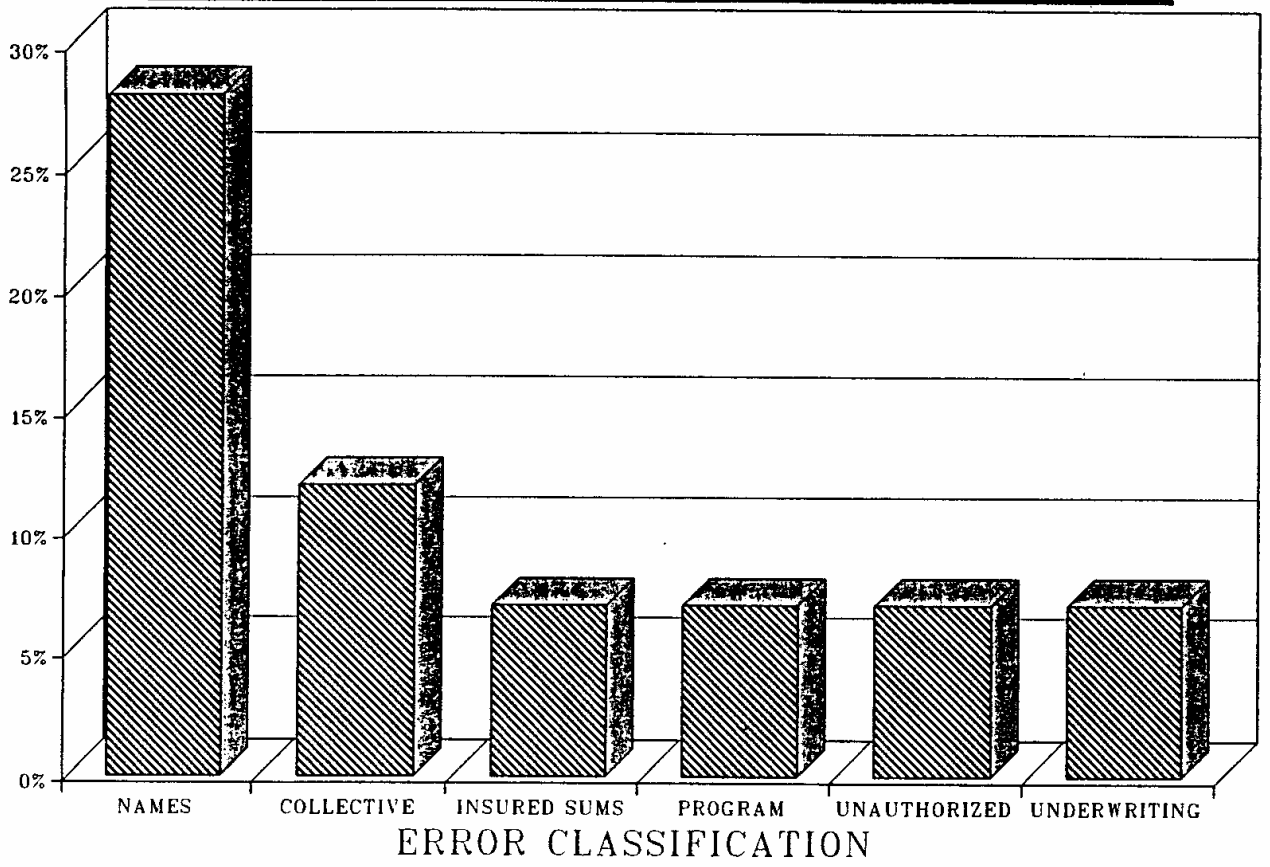


FIGURE 2 – ERROR CLASSIFICATION
PARETO DIAGRAM



The Small Lot Concept

It has been proved that small transfer lots hasten the production process and enhance quality. We shall demonstrate this argument with a simple example. Assume that a worker makes one piece and hands it to a second worker whose job is to join on another piece. However, the second worker cannot make the two pieces fit, because the part made by the first worker is defective. The second worker does not want to have to stop working, so he lets the first worker know about the defect right away. The first worker, not wanting to repeat the error, will try to root out the problem that caused the defect in the first place.

If we are dealing with large lots, the second worker may find 10% to be defective but he does not care. He just tosses the defective part into the rework bin and grabs another. There are always enough good parts to keep him busy.

Hence, large lots obscure errors and problems, and load the production lines with defective parts. It has been proved that running small lots reduces cycle time dramatically, Schonberger [1982].

In our case, the managers found that the insurer had unconsciously been dealing with large lots, and large transfer lots. The problems started with the procedure of delivering the proposals (signed by the clients) to the company. The procedure was that the agents themselves delivered the proposals to the "supervisor" on the last business day of the week. At the beginning of every new week the supervisor would transfer all the proposals signed during the previous week, throughout the country, to the underwriter.

The net result was that some policies would wait seven days till the beginning of the underwriting process! Today, the insurer encourages its agents to deliver the proposals as soon as they have been signed. This change in procedure has reduced the lead time by three to four days on the average. It was a necessary change towards a regime of small transfer lots.

The Complete Kit Concept

According to this concept, work should start only when the "kit" is ready, i.e., all parts which are required to produce the product are ready and available.

In the case under study, there were many instances of clients and agents being anxious to push their proposals forward, even though some details and documents were missing (e.g., bank account number, military service declaration). As the CK concept shows, if you work

using complete kits, you save about 40%-80% of the time spent to process a policy! This time was being wasted in tracing the right proposal for the supplementary details, re-learning the case etc. Moreover, lead time was longer, because of double handling.

Bottleneck Identification

Bottleneck identification, as per step 3 of the TOC, was carried out. In our case, bottleneck identification was simple and clear. It was the underwriting activity. So, the managers had to make sure that the underwriter handled only professional jobs. We observed that 20%-25% of the policies were considered to be "standard" (e.g., policies issued to individuals under the age of 30, who have completed full military service). Clearly, these standard policies could be handled by other non-bottleneck employees.

TQM Implementation

Only after the department had implemented the JIT techniques (small production and transfer lots), the CK methods (working using complete kits, the TOC procedures (exploiting bottlenecks, subordination of the entire system and offloading), measuring the right measurements (lead time, throughput and work in process), was TQM implementation started.

All the employees had gone through seminars and workshops and started measuring errors and faults. Control charts started to appear on the walls as well as Pareto "Fishbone" diagrams. Process improvement teams were gathering data to improve processes.

Results

By applying the small lot concept and the complete kit concept, offloading the bottleneck, the life insurance employees enabled the material to flow faster. The lead time, which was initially twenty-seven days, was reduced to ten days within four months. This change was followed by a dramatic quality improvement. The rate of errors fell from ten percent, on average, to six percent, within one month, and is falling. The insurer has backed up this success with clear, written procedures, forms and instructions. He has, moreover, realized that he must assure quality at the source, by educating and training his brokers and agents according to the main principles of FMT.

These results are relevant to the special circumstances of the Israeli insurance market.

However, we believe that implementation of FMT techniques will improve the flow and enhance quality in the insurance industry in general. One should always remember that FMT, and especially its TQM component, is a story of ongoing improvement, in which management is continually striving for shorter lead time and robust quality, using easy-to-see quality measures.

References

Cameron, K., (1986a) "A Study of Organizational Effectiveness and its Predictors". Management Science, Vol. 32, No.1, January, pp.87-112.

Cameron, K., (1986b) "Effectiveness as Paradox: Consensus and Conflict in Conceptions of Organizational Effectiveness". Management Science, Vol. 32, No.5, May, pp. 539-553.

Deming. W.E., (1986) Out of the Crisis. MIT CIAS, Cambridge Massachusetts.

DoD 5000 (1989) Total Quality Management. Department of Defense, 1989.

Drucker, Peter F., (1990) "The Emerging Theory of Manufacturing". Harvard Business Review, May-June, pp 94-102.

Goldratt, E.M., and Cox, J., (1986) The Goal. North River Press, Croton-on-Hudson, NY, Second Edition.

Kaplan, R. (1984), "Yesterday's Accounting Undermines Production". Harvard Business Review, July-Aug., pp. 95-101.

Ronen, B., (1992) "The Complete Kit Concept". International Journal of Production Research, Vol. 30, No. 10, pp. 2457-2466.

Ronen, B. and Starr, M.K., (1990) "Synchronized Manufacturing as in OPT: From Practice to Theory". Computers and Industrial Engineering, August, pp. 585-600.

Schragenheim E. and Ronen, B., (1990) "The Drum-Buffer-Rope Shop Floor Control". Production and Inventory Management, Third Quarter.

Schonberger, R.J., (1986) World Class Manufacturing. Free Press, New York.