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LOGISTICS IN INDUSTRIAL ACTIVITIES

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¶A***bstract:*** *Paper present some concepts about the logistics applications in industrial activities. It's presented the relationship between the industrial system and economic environment and a possible approach of management of logistic activities.*

Key words: *logistics, industrial system, management*

1. INTRODUCTION

Logistics is the application of time and space factors to human activities. It is the application, in the broadest sense, of the three big M's of warfare-materiel, movement, and maintenance. It provides the substance that physically permits an industry to live and grow. Viewed in its broadest context, logistics is the art and science of creating and maintaining an industrial capability. Its purpose is to create machines and equipments, work-peoples and provide sustained support of these in producing process. We can also define logistics as the science of planning and carrying out the movement and maintenance of machines and materials. In its most comprehensive sense, those aspects of industrial operations which deal with:

- Design and development, acquisition, storage, movement, distribution, maintenance evacuation, and disposition of materiel.
- Movement, qualify and specialization of personnel.
- Acquisition or construction, maintenance, operation, and disposition of facilities.
- Acquisition or furnishing of services."

Industrial logistics is influenced by a wide range of multilayered, external factors.

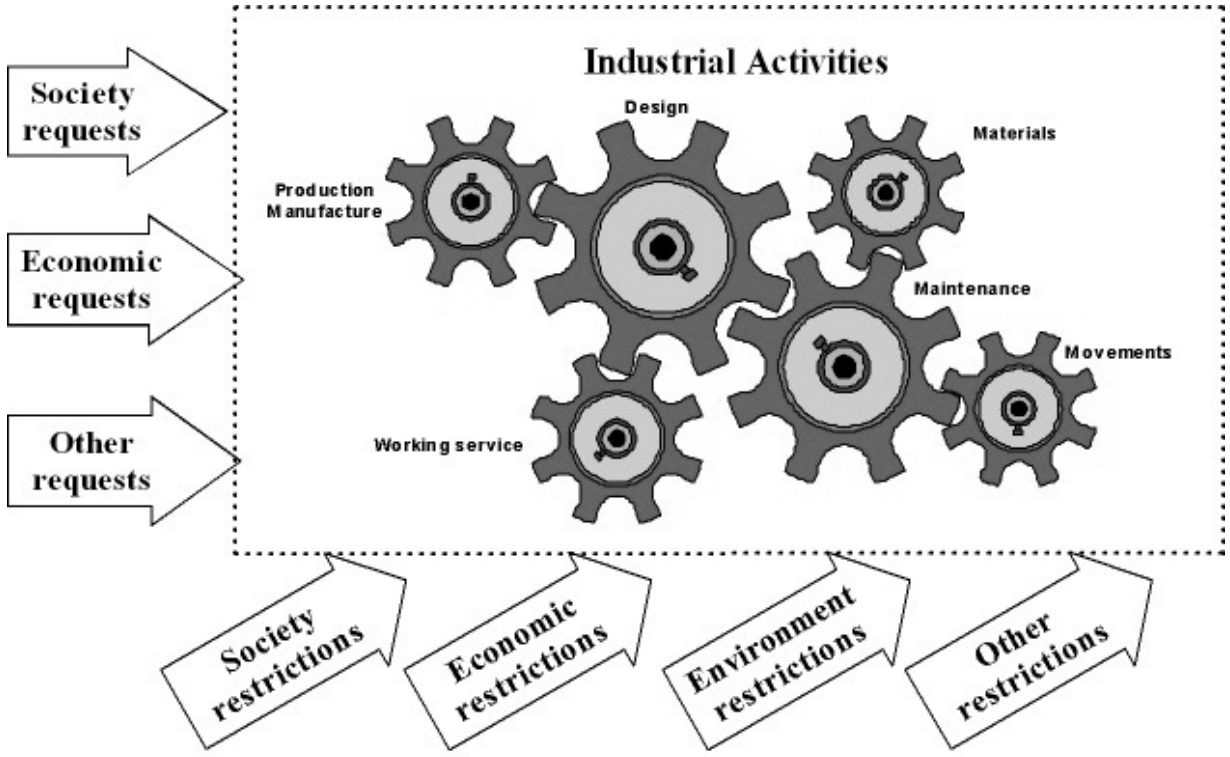

Fig. 1 The relationships between industrial activities and economic environment

The most important of these factors are represented by the society requests and economic request. In the same time the society and economic environment put on logistic process important restrictions. These relationships are shown in figure l.

2. THE MANAGEMENT OF LOGISTICS ACTIVITIES

The basic mission of the industrial logistics system is to support the work-people in the field with what is needed, when, where, and in the condition and quantity required at minimum expenditure of resources. This mission is the common thread which connects all logistics activity, governs application of principles, and establishes a framework of fundamental logistics principles which guide mission accomplishment.

A system is defined as an array of components designed to accomplish a particular objective according to plan. The systems theory includes the systems philosophy (a way of thinking); systems management (the integration of operations through design of the organization and the relationships of its parts); and systems analysis (efficient use of resources to achieve objectives).

The first element in systems theory is to develop a systems philosophy or a way of thinking about the logistics system. A logistics system is defined as a network of related procedures, homogeneous in character and similar in operational concepts, together with the supporting organizational authority structure and basic elements which are integrated into a total design structure to insure accomplishment of an organization's mission or predetermined objectives, according to plan.

Logistics is a major system consisting of a group of functional subsystems. Since activities within these subsystems have a tendency for excessive growth, it is necessary to exercise control over them. The most effective and efficient system is not the result of merely maximizing the effectiveness and efficiency of the performance of each of its subsystems, but is a balanced system capable of adjustment to meet changing priorities and needs. These characteristics must be understood by the logistician along with other principles of logistics so effective management effort can be applied.

The logistics system must be viewed as a whole. Good management must permeate the entire industrial system. A possible approach of management of logistic system is presented in figure 2

The logistic system is manmade so it must be a planned, operational process, requiring mutual functioning of diverse parts under managerial control. The basic elements of the system include:

- equipment;
- facilities;
- work-people;
- technical and management data;
- computer programs;

To establish the basic elements is necessary to define:

- Requirements Determination. A requirement is an established need justifying the timely allocation of resources to achieve a capability to accomplish an objective. A requirements determination is statement of need, together with the definition of the resources necessary to accomplish the stated need.
- Acquisition. The acquisition process consists of all of those tasks performed to satisfy the quantitative, qualitative, and time specifications of the requirements process. The process is

performed to acquire machines, equipments and systems, material and tools or major end items needed to create and maintain a industrial capability. It included research and development, design and engineering, and those measures and procedures pertaining to acquisition of work-people, facilities, equipment, repair/spare parts, tools, support and test equipment, cataloging, and technical manuals required to develop, produce, emplace, operate, and maintain materiel. The acquisition process is directly related to the requirements process in that it must respond to the needs as specified by the requirements process.

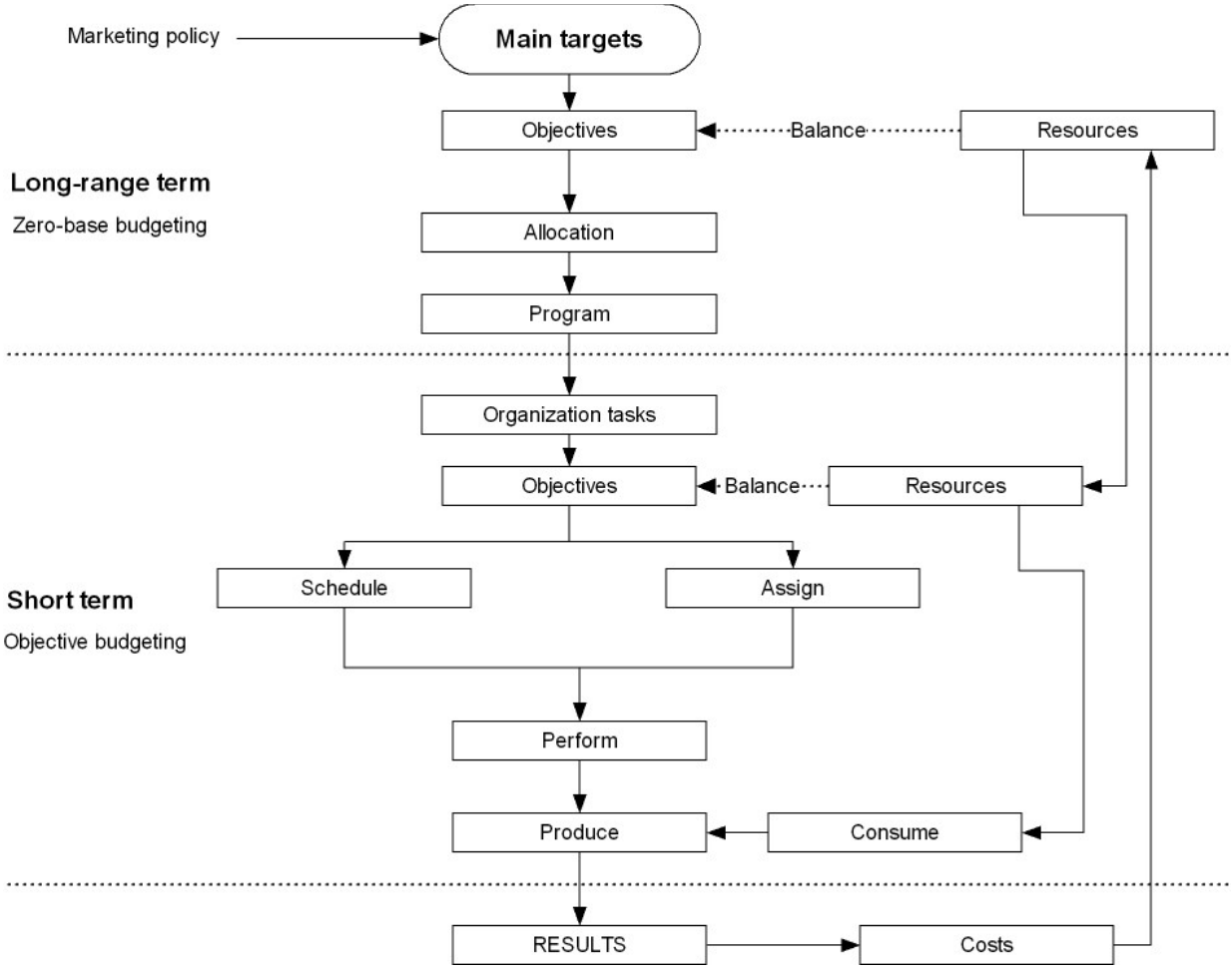

Fig.2 Management of logistics activities

- Distribution. The distribution process involves all logistical aspects to move, receive, store, handle, and issue materiel in the supply system.

- Maintenance. Maintenance is the function of sustaining materiel (machines, equipments and systems, components, spares, support equipment) and facilities in an operational status; restoring them to a serviceable condition; or upgrading their functional utility through modification. The maintenance process includes the preventive and restorative measures necessary for the operation of real property and utility systems, minor construction, and engineering services.

The maintenance can be made by:

  - the using personal is responsible and it is performed on assigned equipment. The phases normally consist of inspecting, servicing, lubricating, adjusting, and replacing parts, minor assemblies, and subassemblies.
  - the maintenance teams, under the coordination of production sector leaders. The maintenance is performed in support of the user. It is characterized by forward orientation, repair by replacement, and provides mobile, responsive "one-stop" maintenance support.
  - the specialized maintenance teams with independent job or production line operations. These teams are under direct coordination of general manager.

- Disposal. The disposal process involves the purging of excess, obsolete, or surplus materiel (materials, components, spares, machines),

3. CONCLUSION

To effectively manage elements of the logistics system, the logistician must understand and apply certain fundamental principles of logistics. The principles of logistics are as follows:

- Logistics intelligence. Managers must have accurate and timely logistics information in order to provide effective logistics support.
- Objective. Logistics endeavors must be directed toward a clear and attainable objective.
- Generative logistics. The professional application of initiative, knowledge, and ingenuity, and the innovative exploration of technical and scientific advances are fundamental to the generation of logistics systems improvements.
- Interdependence. Logistics system efficiency requires effective interrelationships among all functional parts of the system.

- Simplicity. Simplicity is essential at all levels of the logistics system.
- Timeliness. Logistics support must be provided in the right quantity at the proper time and place for accomplishment of the mission.
- Cost-effectiveness. Efficient management of logistics resources is essential to cost-effective logistics support.

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