

## UNIT – I OVERVIEW OF BUSINESS FUNCTIONS

- Business function in an organization,
- Material management,
- Scheduling,
- Shop floor control.
- Forecasting,
- Accounting & finance,
- Human resources,
- Productivity management.

### 1. INTRODUCTION

An organization is the group of people with specific responsibilities acting together for achieving specific purpose determined by the organization. An organization is an entity where two or more persons work together to achieve a goal or a common purpose. There are so many organizations around us. Daily we visit and see many organizations like hospitals, colleges, factories, farms and government offices. Mosque/church is also an example of an organization. People go there and say prayers and activities of praying are to achieve a certain goal. Similarly, any unit in which two or more persons are working together for some purpose is called an organization.

If there is an organization, then there must be some people who work as a whole for a common purpose, so there must be a defined purpose. If an organization does not have any purpose, it will not survive in the long run. To achieve the purposes by using people, the processes are needed. Without any process, you cannot achieve any type of purpose or goal. If we see in our daily life, we have some goals. For achieving these goals, we use some processes. So that process is also obvious and important for an organization.

The last important thing for any organization is that it requires main pillars of management i.e. POLCA:

1. Planning
2. Organizing
3. Leading
4. Controlling

A manager must perform all these management functions with assurance.

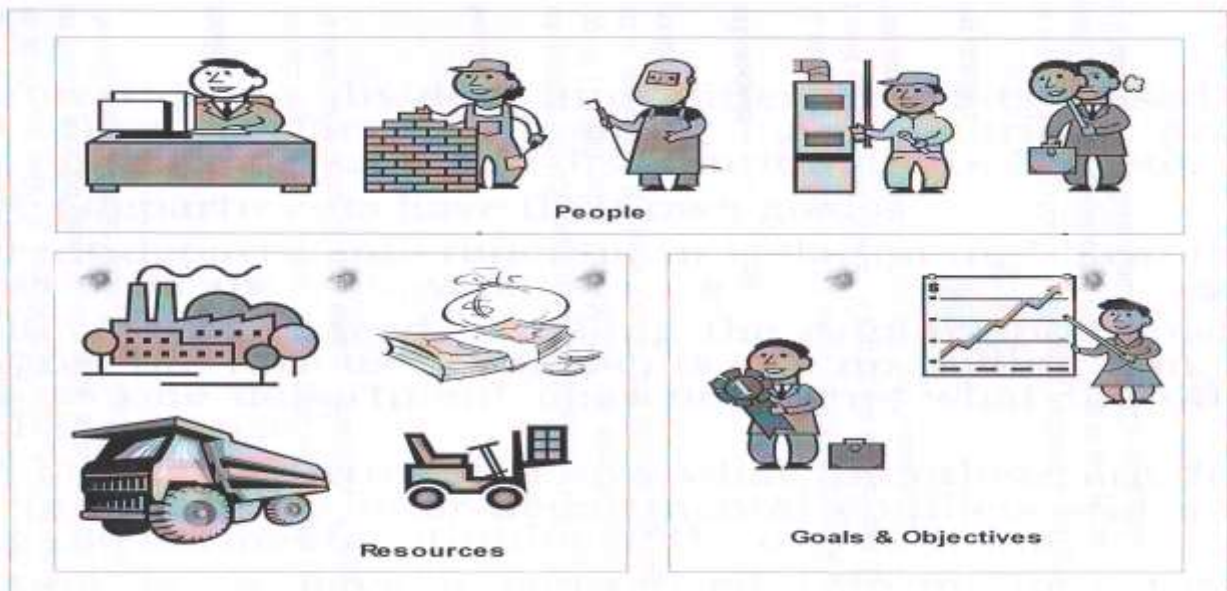


Figure 1.1 Organization

## 2. BUSINESS FUNCTION IN AN ORGANIZATION

All organizations are divided into many departments or sections, with each department having an assigned functional responsibility. The various departments have their own goals. The different departments function in isolation and have their own data collection and analysis systems. The result is that, instead of taking the organization towards the common goal the various departments end up pulling it in different directions as one department does not know what the other does and for what purpose. So unless all the departments know what the others are doing and for what purpose, the inter-departmental conflicts will arise thus disrupting the normal functioning of the organization.

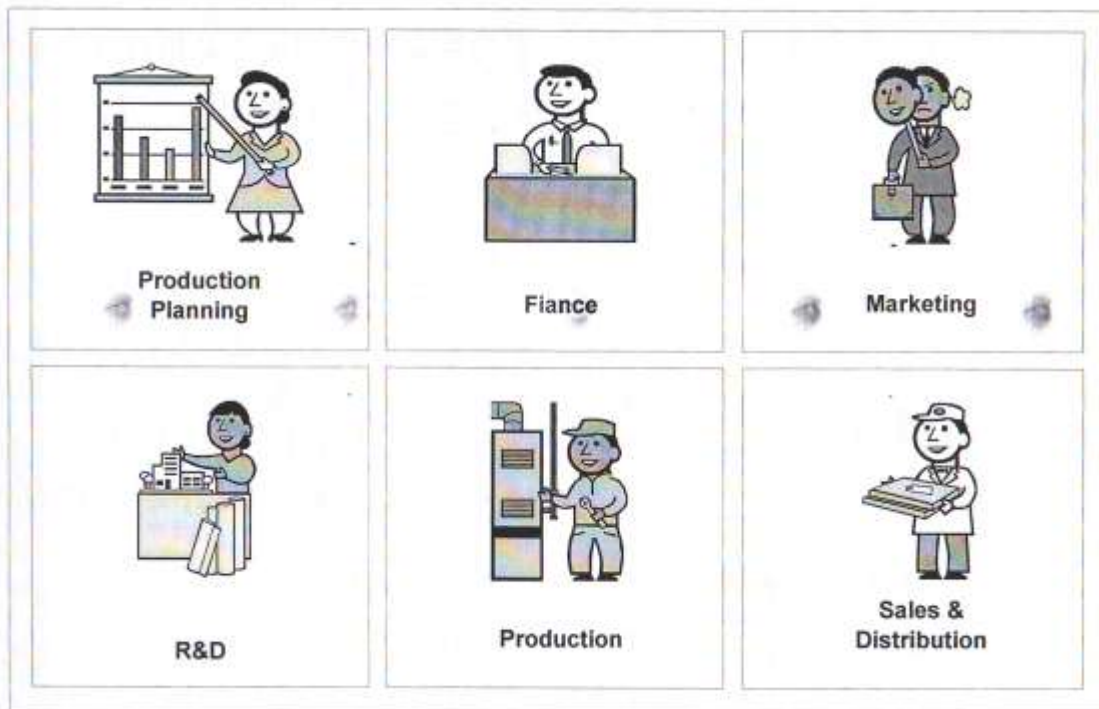


Figure 1.2 Organization where there is no or little Communication between Departments

Consider, for example, an educational institute such as large University. It will typically have, besides academic departments, a central administrative office. The administrative office will be divided into many sections, each with an assigned function.

Typically the functions will be:

- Student section
- Account section
- Purchase section
- Stores section
- Human resource section
- Medical section
- Student hostel office

Division of an organization into departments with specified functions is mainly intended to let each department focus on an area of responsibility. All departments will have to coordinate their activities to meet the overall objectives of the organization. This coordination is normally provided by higher level management in the organization.

**Table 1.1 Functions of Various Departments of a University**

<i>Administrative Offices</i>	<i>Functions</i>
Student section	Students' admission records Administering admission tests Students' academic records Students' registration information Placement
Accounts section	University budget Payroll General ledger of receipts/payments Scholarships
Purchase section	Order processing Vendor selection Stock register maintenance Issues Receipts
Hostel Office	Mess records Hostel purchases/stores Room assignment Residents' data
Medical Centre	Medical records Medicine purchase/stores
Works Department	Building construction Building maintenance Maintenance of electrical installation and water supply Maintenance of roads, gardens
Human Resource	Personal records (leave, tenure) Assessment of employees Recruitment
Miscellaneous	Mailing Telephones Transport

**Table 1.2 Functions of Various Departments of a Manufacturing Organization**

<i>Sections</i>	<i>Functions</i>
Production	Production planning and control Maintenance management Bill of materials processing
Marketing	Advertising Customer records/follow up Sales analysis
Finance	Billing, payments Payroll Costing Share accounting Budget and finance planning Tax planning Resource mobilization
Human Resource	Recruitment Records Training Deployment of labour Assessment/promotions
Stores (Materials Management)	Stock ledger keeping Issues/reorder Receipts Enquiry processing
Maintenance	Physical facilities Communication facilities Electricity and water supply
Research and Development	Production improvement Product development Product testing Product design

### 3. MATERIAL MANAGEMENT

Materials Management is a function, which aims for integrated approach towards the management of materials in an industrial undertaking. Its main objective is cost reduction and efficient handling of materials at all stages and in all sections of the undertaking. Its function includes several important aspects connected with material such as purchasing, storage, inventory control, Material handling, standardization etc.

#### 3.1 Scope of material management

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The functions of materials management can be categorized as:

1. **Materials planning and Control:** Based on the sales forecast and production plans, the materials planning and control is done. This involves estimating the individual requirements of parts, preparing materials budget, forecasting the levels of inventories, scheduling the orders and monitoring the performance in relation to production and sales.
2. **Purchasing:** This includes selection of source of supply finalization, placement of purchase orders, follow-up, maintenance of smooth relations with suppliers, approval of payments to suppliers, evaluating and rating suppliers.
3. **Stores Management:** This involves physical control of materials, preservation of stores, minimization of obsolescence and damage through timely disposal and efficient handling, maintenance of stores records, proper location and stocking. A store is also responsible for the physical verification of stocks and reconciling them with book figures. A store plays a vital role in the operations of a company.
4. **Inventory control:** inventory generally refers to the materials in stock. It is also called the idle resource of an enterprise. Inventories represent those items, which are either stocked for sale or they are in the process of manufacturing or they are in the form of materials, which are yet to be utilized. The interval between the receiving the purchased parts and transforming them in to final products varies from industries to industries depending upon the cycle time of manufacturer, it is therefore necessary to hold inventories of various kinds to act as a buffer between supply and demand for efficient operation of the system. Thus, an effective control on inventory is a must for smooth and efficient running of the production cycle with least interruptions.

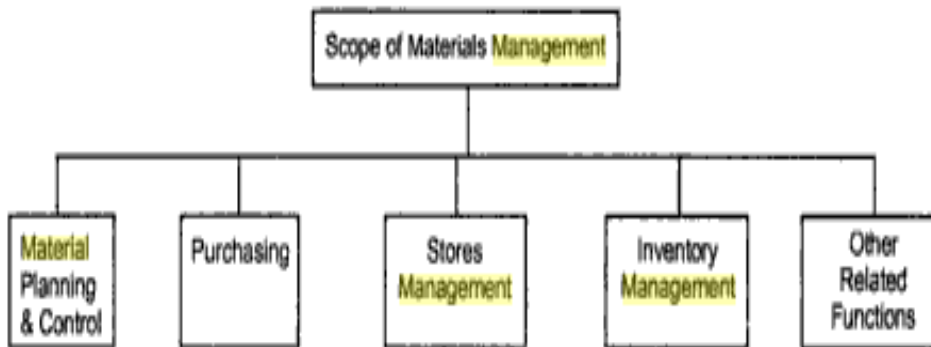


Figure 1.3 Scope of material management

### 3.2 Material planning and budgeting

Material planning is a scientific technique of determining in advance the requirements of raw materials, ancillary parts and components, spares etc. as directed by the production program. It is a sub-system in the over all planning activity. There are many factors, which influence the activity of material planning. These factors can be classified as macro and micro systems.

1. Macro factors: Some of the macro factors which affect material planning, are price trends, business cycles Govt. import policy etc.
2. Micro Factors: Some of the micro factors that affect material planning are plant capacity utilization, rejection rates, lead times, inventory levels, working capital, delegation of powers and communication.

### 3.3 Techniques of material planning

One of the techniques of material planning is bill of material explosion. Material planning through bill of material explosion is shown in figure 1.4.

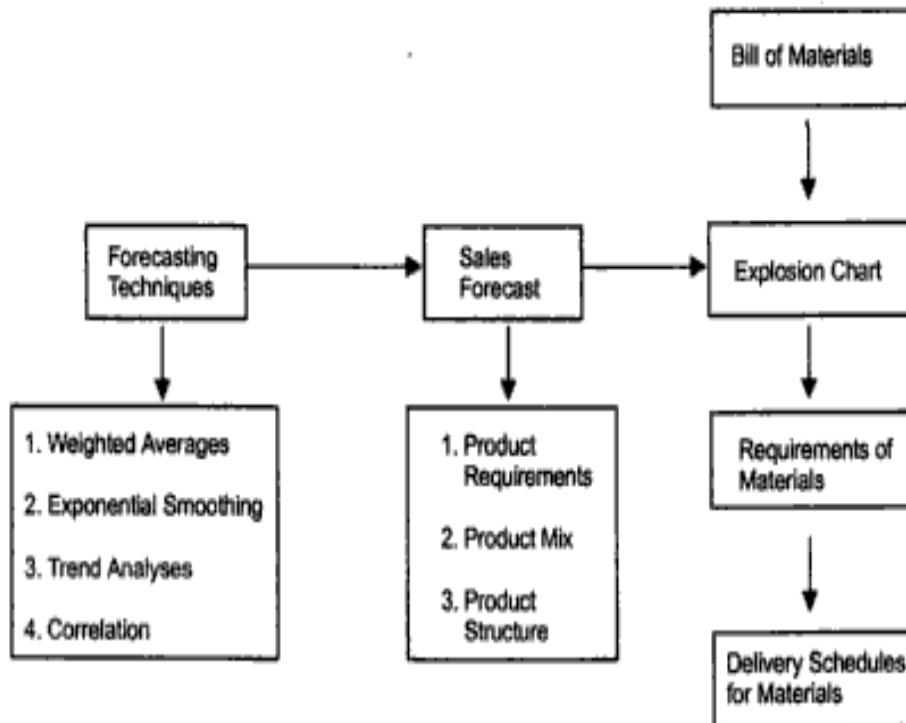


Figure 1.4 Material planning

## 4. SCHEDULING

Scheduling is committing resources to the realization of an event at a defined time. Scheduling is committing resources to a plan. This module assists in simplifying the administration and evaluation of time data. Time management or scheduling is a powerful tool which helps in administer and evaluate data related to the time employees spend working. This component can simplify efforts irrespective of whether the organization uses centralized or decentralized data to determine employee working hours. Time management manages work schedules efficiently and effectively by automating schedule generation and allowing flexible definition of time models and schedules per location and organization level. With time management, can set flexible working hours and process work notices as times are recorded. Individual and group piecework calculation for employee's incentive wages is also available through the incentive wages feature. The time evaluation component allows daily processing of employee time data. It is a flexible tool designed to handle complicated evaluation rules to fulfill regulatory requirements and determine overtime and other time-related data. The time evaluation component stores organization's business rules and automatically validates hours worked and wage

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types. The results of time evaluation can be depicted on a time sheet which provides a detailed overview of daily balances and time wage types. Most packages provide a review of feature which will provide all necessary information and tools to review and maintain employee time data.



## 5. SHOP FLOOR CONTROL

The actual implementation starts with shop floor control (SFC, also called production activity control-PAC). The SFC or PAC module monitors all shop floor activities and communicates status information on manufacturing orders and work centers back to respective managers.

SFC determines what orders are released to the floor and when, the routing of a particular order, when operations are to be started and completed. It also maintains the paperwork and details concerning an order, and gives feedback (either manual or automated) on the status of an order. Dispatch lists are generated, showing the jobs coming into a work centre and the preferred order of their completion. SFC reacts to changes and reschedules the work in response to priority changes. It also interfaces with the Capacity Requirements Planning component to provide input/output data for capacity planning purposes. With this process, overloaded or under loaded work centers can be identified to provide more effective work centre utilization.

With increasing emphasis being placed upon reducing manufacturing time in support of the need to reduce product time to market, manufacturers have turned greater attention to evaluating their shop floor activities. Process reengineering efforts and the elimination of waste have necessitated greater reliance upon powerful, user-friendly, flexible shop floor planning and control systems. Management needs timely, accurate information and the ability to manage the shop floor by exception. Cost information must be flexible as well. Factories are being realigned to reduce material travel time through a facility. This realignment places an added burden upon the supporting systems. Managers must often time experiment with trial-and-error approaches in the never-ending search for process improvement. Shop floor control systems must be flexible and adaptable to changing needs.

A shop order can be reprinted at any time with user selection of whether to reallocate material. This reprinting gives a shop foreman flexibility to print a duplicate copy when an order is split between operators. This feature also gives the shop scheduler, the ability to reprint the shop packet and to reflect new material allocations that correct previous shortages. Every shop order can be maintained throughout its life. All systems provide a full function shop order maintenance capability, allowing the user to evaluate and adjust operation steps and components. Orders can be rescheduled either backward or forward. For example, an operation's start date can be overridden to reflect changed events and then the order can be forward scheduled to reflect the impact upon future operation.

## 6. FORECASTING

**Forecasting** is the process of estimation in unknown situations. It is one of the oldest mathematical activities in business. It was done years before the computer, using desk calculators. The computer enabled the forecasters to make the calculations much more quick and easy. In considering the contribution that forecasting can make to the firm, should keep three basic facts in mind:

- I. **All forecast are projections of the past:** The best basis for predicting what will happen in the future is to look at the past. All types of forecasting follow this approach. This is the reason why accounting data is so important in forecasting; it provides the historical base.
- II. **All forecasts consist of semi-structured decisions:** Forecasting decisions are a good example of the semi-structured type of decisions that are supported by the DSS. The decisions are based on some variables that can be easily measured and some that cannot.
- III. **No forecasting is perfect:** Not even the most sophisticated main frame forecasting package can be expected to predict the future with 100 percent accuracy.

Since managers are aware of these facts, they apply much judgment in using the forecasts as a basis for future planning.

### 6.1 Short Term and Longer Term Forecasting

Short term forecasting is performed by the functional areas. The marketing function projects sales for the near future- say the next one to three years. All of the functional areas use the sales forecast as the basis for determining the resources that they will need to support the project level of activity. For example, the sales forecast is a basis for the MRP projections made by manufacturing.

Long term forecasting is usually done by an area other than marketing- by the financial function or by a special group that has planning as its only responsibility. Some larger corporations have a strategic planning group that reports to the executive level.

### 6.2 Forecasting Methods

Although it is natural to think of forecasting as involving only quantitative methods, an increasing amount of attention is being directed at non- quantitative methods.

**Non- quantitative Methods:** A non- quantitative forecasting method does not involve computations of data but is based on subjective estimates. The manager applies such reasoning as-“We sold two thousands units last year, and we should be able to improve on that. So I think we will sell twenty-five hundred next year.”

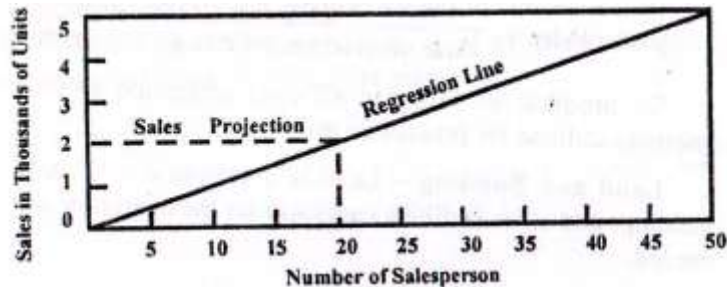
Forecast such as these may make it seem as if the manager is flying by the seat of the pants, but they can result from an insight into the business that comes from years of experience. Many managers are very good at the non- quantitative approach.

Some firms have established a formal system that encompasses non- quantitative methods. Three such formal systems are:

- a. **Panel Consensus:** This technique consists of a group of experts who openly discuss the factors bearing on the future and arrive at a single projection based on the combined inputs. The experts can meet on a regularly scheduled basis, follow a prescribed agenda, and have the discussion recorded in a written form. Such sessions rely on face-to –face dialogue in a conference room setting.
- b. **Delphi method:** It involves a group of experts who do not meet in person but instead submit responses to a series of questionnaires that are prepared by a coordinator. Each round of questionnaires incorporates inputs from previous rounds, thus gradually refining the content.
- c. **Electronic meeting system:** An electronic meeting system (EMS) is a type of computer software that facilitates group decision-making within an organization. To work with such a system, networked computers, a projection screen, and EMS software are required. The term was coined by Jay Nunamaker et al. in 1991. The term is synonymous with Group Support Systems (GSS) and essentially synonymous with Group Decision Support Systems (GDSS). An electronic meeting system is a suite of configurable collaborative software tools that can be used to create predictable, repeatable patterns of collaboration among people working toward a goal. With an electronic meeting system, each user typically has

own computer, and each user can contribute to the same shared object at the same time. Thus, nobody needs to wait for a turn to speak; so people don't forget what they want to say while they are waiting for the floor. When a group or a group leader deems it appropriate, people can contribute anonymously to most electronic meeting systems tool, so the group can focus on the content and meaning of ideas, rather than on their sources. Anonymous contributions are particularly useful when a team is generating or evaluating ideas. It is less useful when a team is establishing the agreed meaning of ideas, or building consensus.

**Quantitative Methods:** Many forecasting techniques have been developed over the years. One that has retained a large following is regression analysis to be forecast, called the dependent variable. And another activity called the independent variable. The activity to be forecast depends on the other activity.



**Figure 1.5 Using the number of salespersons to project sales**

Figure 1.5 illustrates the relationship between the dependent and the independent variables. In this example, the firm's sales are the dependent variable and the number of salespersons is the independent variable. The sales depend on the number of sales representatives.

When there is only a single independent variable, the technique is called simple regression, or bivariate regression. When there is more than one independent variable, the terms are multiple regression or multivariate regression.

A line has been plotted through the data points in the figure so that the total distance from each of the points to the line is at a minimum. This line is called the regression line, and it is the best fit to the points. Management can use the regression line to forecast sales based on a particular number of sales persons. For example, if the firm employs twenty salespersons, management can assume the sales will approximate two thousand units.

Prewritten programs called statistics packages or simply stat packages are used to perform regression analysis and other statistical routines on the computer. Some of the more popular stat packages are Minitab, IDA, SAS, and SPSS. Some are available for microcomputers and are good examples of organizational productivity software.

## **7. ACCOUNTING AND FINANCE**

Accounting and finance personnel record the company's transactions in the books of account. Functions within accounting and finance include recording raw data about transactions, including sales, raw material purchases, payroll, and receipt of cash from customers. Those data are then summarized in meaningful ways to determine the profitability of the lemonade stand and to support decision making.

For example, they record accounts receivable when sales are made and cash receipts when customers send in payments. Additionally, they record accounts payable when raw materials are purchased and cash outflows when they pay for materials. Finally, accounting and finance personnel summarize the transaction data to prepare reports about the company's financial position and profitability.

People in other functional areas provide data to accounting and finance marketing and sales provides sales data, production and materials management provides production and inventory data, and human resources provides payroll and benefit expense data. The accuracy and timeliness of accounting and finance data depend on the accuracy and timeliness of marketing and sales and production of materials management data.

Marketing and sales personnel require data from accounting and finance to evaluate customer credit. If a customer's order will cause him to exceed his credit limit, marketing and sales must see that the customer's accounts receivable balance is too high and hold new orders until the customer's balance is lowered. If accounting is slow to record sales or customer's payments, then accounts receivable balances are inaccurate. As a result, credit might be approved for customers who have already exceeded their credit limit and may never pay off their account. In a similar way, it would also be possible to deny credit to customers who actually owe less than their credit limit, potentially damaging the relationship with the customer.

## **8. HUMAN RESOURCES**

Human resources management is an essential factor of any successful business. The competitive environment of the next millennium, with its economic and technological challenges, will affect the HR department in the same way it will affect all the other areas of your enterprise. In brief, HR managers should continually review and optimize their business processes. The HR modules of most ERP systems have a set of rich features and will integrate seamlessly with the other modules and are thus, invaluable aids in improving productivity. They provide company wide solutions for HR departments and make it possible for other departments to access specific employee data.

A human resource management system has to be adaptable to company specific requirements and must constantly grow with increasing HR requirements. It must cover all the functions required in business practices. It must be flexible enough to allow you to optimize your business processes by tailoring the ERP solution to suit your organization's requirements. Today, many businesses cross boundaries. The system must support the organization's international needs with country-specific versions of the HR components. Apart from languages, currencies and legal requirements, accounting systems often vary from one country to another as well, making this a vital feature. A flexible structure enables quick and easy customization of the system to suit your requirements. When you log on in a particular language, screens, messages and documents appear in the language you specify. Then you have access to the system's complete functionality.

The different ERP systems offer many different subsystems under the HR umbrella. Some of the most common subsystems are listed below. Again, the idea is not to be comprehensive but to give you an idea about the options available. The several subsystems under the HR module include:

- a) Personnel management (HR master data, personnel administration, information systems, recruitment, travel management, benefit administration, salary administration).
- b) Organizational management (organizational structure, staffing schedules, job descriptions, personnel cost planning, planning scenarios).

- c) Payroll accounting (gross/net accounting, history function, dialog capability, multi-currency capability, international solutions).
- d) Time management (shift planning, work schedules, time recording, absence determination).
- e) Personnel department (career and succession planning, profile comparisons, qualifications assessments, additional training determination, training and event management).

## 9. PRODUCTIVITY MANAGEMENT

### 9.1 Introduction

**Productivity** in economics refers to measures of output from production processes, per unit of input. Labor productivity, for example, is typically measured as a ratio of output per labor-hour, an input. Productivity may be conceived of as a measure of the technical or engineering efficiency of production. As such quantitative measures of input, and sometimes output, are emphasized. Productivity is distinct from measures of allocative efficiency, which take into account both the value of what is produced and the cost of inputs used, and also distinct from measures of profitability, which address the difference between the revenues obtained from output and the expense associated with consumption of inputs.

Productivity is about how well an organization converts resource inputs into goods or services. Workplace productivity is about how firms can utilize labor and skills, innovation, technology and organizational structure to improve the quantity and quality of their output. Basically it's about exploring all the ways that can make a working environment more efficient.

Before ERP systems, each department in an organization would most likely have their own computer system, data and database. Unfortunately, many of these systems would not be able to communicate with one another or need to store or rewrite data to make it possible for cross computer system communication. For instance, the financials of a company were on a separate computer system than the HR system, making it more intensive and complicated to process certain functions.

Once an ERP system is in place, usually all aspects of an organization can work in harmony instead of every single system needing to be compatible with each other. For large organizations, increased productivity and less types of software are a result.

### 9.2 Why is productivity important?

- i. Basis for improvements in real incomes and economic well-being.
- ii. Monetary policy (inflationary pressures)
- iii. Fiscal policy (financing of health, education, welfare)
- iv. Slow productivity growth = conflicting demands for distribution of income more likely

Productivity is an efficiency of the production system which is expressed by the ratio between output and input. For example when the tailor is able to reduce the length of cloth used per shirt by adopting an

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improved cutting technique, the input (cloth) per shirt reduces while the output (shirts) remains constant. Thus, there is an increase in productivity, in the utilization of material (cloth).

Productivity is a measure of how much input is required to produce a given output, i.e., the ratio output/input is called productivity.

Productivity of a production system is analogous to the efficiency of a machine. Productivity can also be defined as human efforts to produce more and more with less and less inputs of resources as a result of which the benefits of production are distributed among maximum number of people.

European productivity council defines “productivity is an attitude of mind. It is a mentality of progress, of the constant improvement of that which exists. It is the certainty of being able to do better than yesterday and continuously. It is constant adaptation of the economic and social life to changing conditions. It is the continual effort to apply new techniques and methods. it is the faith in human progress.”

When we consider an industry as a whole, the productivity can be expressed in terms of the ratio between the value of the goods and services produced to the value of the resources utilized for this production. Thus,

Productivity = value of goods and services produced/ value of resources utilized for this production

So, productivity refers to efficient utilization of the resources. The resources utilized for production are:

**Land and Building:** Land is a convenient location on which the buildings and other facilities necessary for the operation of manufacture are needed.

**Machines:** Plant, equipment and tools necessary to carry out operations of manufacture and the transport of materials, heating, ventilating and power plant; office equipment and furniture.

**Materials:** Materials that can be converted into products to be sold. They include fuel, chemicals for use in the process of manufacture, packing and other indirect materials etc.

**Manpower:** Man and woman to perform the manufacturing operations; to plan and control, to do clerical work; to design and to research; to buy and sell.

The use of all these resources combined together determines the productivity of the enterprises. Since, higher productivity means more output from the same resources, it also means lower money costs and higher net money returns per unit of output.

Every management tries to improve the productivity. The productivity can be improved broadly by the following two ways:

- a. Increase the resources and there by production
- b. Efficient utilization of resources.

According to the first method if we increase the resources such as labor, machines, materials etc, the productivity may improve but there are limitations to increase the resources as it needs more capital investment. Secondly, after increasing the resources above certain limit, it is possible that the production may rise but in small proportion as compared to increase in input and hence the production may decrease. The second method requires little capital investment to improve the productivity.

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Productivity of the enterprise will be increased when:

- a. The quality and quantity of output is increased by better management, by using best possible method study, while the input remains the same.
- b. The input is reduced by avoiding waste in all forms.
- c. For better utilization of existing resources, a small increase is made in the inputs resulting in a large increase in output.

Attempts for improving the productivity of an industrial enterprise will have to be directed towards these three areas.