

# **Industrial Information Systems**

## **Study Material No. 1**

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## Information : Importance for Management

- ❖ In 1967 Peter M Carlson said “Information is a resource whose generation consumes time and money, whose use conserves time and money, whose cost and value are unknown to the management” . The truth of this statement has been well-acknowledged all over the world for nearly a decade. But shortly the situation was changed.
- ❖ The management started to realise quite well the importance of information. It is now undoubtedly a fact that Information is an expensive commodity; and its value, if properly utilized, is immense, though not always measurable in concrete terms.

## Information : Value

- ❖ An organization's personnel resources, physical facilities and financial resources had been figuring earlier predominantly among the vital assets of an industrial organization. But now, it has been fully realized that, if properly employed, information can rank in importance with all the vital assets of an industrial organization.
- ❖ H.B. Hannay, Chairman of the American Chemical Society's Subcommittee on Economics of Chemical Information, in mid 1970's, had proved through a survey that properly handled information dissemination services could save a firm 217 hours per week person which costs at a high rate.
- ❖ Thus realization about the value of information to industries has led to the adoption of the normative principle that information must be totally exploited in support of the organization's mission.

## Kinds of information needed for Industries

Sl. No.	Kind of Information	Purpose
1	Scientific and Technological Information	Fundamentals pertaining to application of science; design principles; “how-to-do-it” information on processes, materials handling, and operation; information on standards and specifications, material properties, scheduling and foremanship; patent information.
2	Economic Information	Prices of materials and services; rates; marketing studies; financial climate; insurance; taxation; competitive position; and procurement sources
3	Legal Information	Regulatory information – such as, codes, ordinances, statutes, and decisions; extent of trade cooperation, taxation and legislative liaison
4	Personnel Information	Labour relations matters; relations matters; management and supervision, practices; industrial policies; recreation requirements; recruiting source and tests
5	Public Relations Information	Knowledge of attitude of local or regional area towards the industry and/or its products the responsibilities of the organization towards the local area, the regional area, the rest of the industry, the try associations, and the overall industrial complex.

## Information Sources for Industries

The relative volume of required information of an industry as a whole or of one of its division varies widely in terms of types of source of information. For industries, its sources of usable information are received broadly from two distinct categories

- (a) **Internal Sources** : Internal sources include primarily the sources of internally generated information.
- (b) **External Sources** : External sources include primarily the sources of information procured externally. These may be (i) classified (closed), or (ii) declassified, or (iii) unclassified (open).

Use of categories of above sources of information depends on the type of industries.

## Illustrations

- Water M Carlson (in mid 1960s) had conducted a study on industries pertaining to Defence which revealed the following
  - 20% of information need of the engineers are procured externally in the declassified and unclassified sources;
  - 10% of their information need is met by national and regional information systems;
  - 70% of their information need comes from personal files, colleagues' technical sales representatives, and other information source.

## Illustrations

- Eugene B Jackson and Ruth L Jackson (1978) conducted a survey for other than defence-oriented industries. The study revealed that the importance of libraries in industrial organizations which concluded that the externally procured sources of information take care of a much higher percentage of information needs in most of the cases.
- *Though those studies are bit old, but its findings are relevant even today.* At present those facts warrant attention to judicious decision about the provision of accessibility to all categories of sources of information. In an industrial organization, the lack of accessibility to particular category of information would affect the achievement of its mission.

## Iceberg effect

It is, indeed, a very difficult task to gather all the necessary information in one place in an industrial organization. This is so because of a factor commonly known as “iceberg effect”. The concept illustrates the relative volume of information available inside in one location, and outside the location. The top of the iceberg the smallest part, is the total information immediately available at a specific location; the next larger part is the additional information available elsewhere in the organization; and the base of the iceberg, the third and largest part, is the additional information available outside the organization. Each division within an organization must receive its own information flow from these three available source areas.



# IIS and the Management

## Possible Expectation of the Management

- Each management would expect all positive effects from an industrial information system(IIS) in all sense.
- IIS should help in increase in the management span control; and the planning and management activities.
- IIS should ensure rapid information transmittal on management structures; and remove the people and paper buffer between levels of management and organizations.
- IIS should enhance the possibility of task definition by information used by each person; and also the possibility of using information originally gathers for some other purpose.

# IIS and the Management (contd..)

## Attitude and Involvement

- The development of an optimum information system that will make the needed information fully available, is not an easy task. It calls for a special type of management attitude and involvement. The management observes the following rules when reviewing information system proposals:
  - Don't abdicate responsibility to the technicians;
  - Don't get over helmed by details;
  - Don't expect perfection (it won't work right the first time);
  - Don't accept anything you don't understand;
  - Understand what your system is for;
  - Be involved – help the person who is trying to help you;
  - Have a procedure to fall back on when it doesn't work initially.

## Steps for Developing the IIS

The basic methods for information handling in industries have been established and some revolutionary basic methods would emerge too. The use of ICT in this sphere would gradually improve the system in the years to come. Developments in these areas are inevitable, which would call for important changes in functioning of the management and standardization activities. Judicious decisions has to “make-or-buy” are all that is warranted at this hour of development. Further, and intellectually and manually operated information system can be so designed today that it becomes readily amenable to digitisation activities of the future. The need for a modernized information system does exist in every industrial organization – large scale, medium scale, or small scale.

## Steps for Developing the IIS (contd...)

- The steps that should be taken to develop an effective information service in an industrial organization are:
  - To decide to exploit the information asset ;
  - To determine what information will be used by source, by subject area, and by management level;
  - To develop an overall information system that will have the necessary skilled staff, resources, systems, and procedure to insure that needed materials are acquired (obtained) expeditiously; that those materials are adequately indentified (indexed and recorded) using the standard formats; that the proper and effective announcement is made of their availability; and that the information is effectively used to support the organizations primary mission;

## Steps for Developing the IIS (contd...)

- To monitor and upgrade the information system on the basis of continual feedback from users so as to more effectively include more of the organization's personnel as involved users; compact and synthesize the meaning in previously utilized information, reach "make or buy" decisions on a wider spectrum of information sources/Services; develop creative methods of identifying crucial content; prepare for future direct enquiry procedures to increase effectiveness of both announcement and utilization procedures; and proceed with "deliberate haste" to accept the best of the newest procedures.

# Towards An Ideal Industrial Information System

## Its Users

- An ideal industrial information System (IIS) considers for its **users** --all employees of different level, all customers, the government, the trade associations, and the public at large.
- Its **information resources** should be exhaustive enough to meet the requirements of any of its users – primarily the employees and the customers.
- **Employees** need information to accomplish his function and to increase his productivity. Employees of different level would have different kind of responsibility which would attract different information need pattern.
- **Customers** needs information to use the Industry's products properly and effectively.

## Towards An Ideal Industrial Information System

### Information and Sources of Information

- The **sources of information** an IIS acquires should be both internally generated and externally procured. It would transform externally procured information, whenever necessary, according to its need. An IIS and its units should be so organized, staffed, and located that information elements are inputted in an unambiguous form, in a timely manner, in a processable format, from every conceivable source-points, and with conflicts resolved.
- The information so inputted from different source-points should be processed and importantly should be tagged with much care in accordance with the policy of the industry. Because information, if any, inappropriately served to those users who are not entitled, may not satisfy the respective users need or may lead to mishandling of information.

## Towards An Ideal Industrial Information System Its Services

- All categories of user of any IIS would essentially receive **services** which broadly include dissemination of information, retrieval of information, access to information, in addition to switching and referral services. It would operate on the principle: “Knowledge is a commodity” and that “information services are the marketing of that knowledge”. The ideal may not be achieved, but it is essential to note it for the purpose of assessing where and how an existing system falls short of the ideal.



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