

INFORMATION CAN BE ORGANIZED USING COMPUTERS

- Flexibility
- Efficiency
- Reduces the redundancy
- Manipulation is easy
- Alternatives views or external models of the information.

Information can be organized using computers.

Numerous formal methods and possible organizations exist for the information required for project management. Before discussing the details of computations and information representation, it will be useful to describe a record keeping implementation, including some of the practical concerns in design and implementation. In this section, we shall describe a computer based system to provide construction yard and warehouse management information from the point of view of the system users. In the process, the usefulness of computerized databases can be illustrated.

In typical construction warehouses, written records are kept by warehouse clerks to record transfer or return of equipment to job sites, dispatch of material to jobs, and maintenance histories of particular pieces of equipment. In turn, these records are used as the basis for billing projects for the use of equipment and materials. For example, a daily charge would be made to a project for using a concrete pump. During the course of a month, the concrete pump might spend several days at different job sites, so each project would be charged for its use. The record keeping system is also used to monitor materials and equipment movements between sites so that equipment can be located.

Equipment movements would have to be tracked individually, days at each site counted, and the daily charge accumulated for each project. This project would be charged a daily rental rate until the grinder was returned. Hundreds or thousands of individual item transfers would have to be examined, and the process of preparing bills could easily

require a week or two of effort.

In addition to generating billing information, a variety of reports would be useful in the process of managing a company's equipment and individual projects. Records of the history of use of particular pieces of equipment are useful for planning maintenance and deciding on the sale or scrapping of equipment. Reports on the cumulative amount of materials and equipment delivered to a job site would be of obvious benefit to project managers. Composite reports on the amount, location, and use of pieces of equipment of particular types are also useful in making decisions about the purchase of new equipment, inventory control, or for project planning. Unfortunately, producing each of these reports requires manually sifting through a large number of transfer cards. Alternatively, record keeping for these specific projects could have to proceed by keeping multiple records of the same information. For example, equipment transfers might be recorded on (1) a file for a particular piece of equipment and (2) a file for a particular project, in addition to the basic transfer form. Even with these redundant records, producing the various desired reports would be time consuming.

Finally, flexibility of systems for changes is an important design and implementation concern. New reports or views of the data are a common requirement as the system is used. For example, the introduction of a new accounting system would require changes in the communications procedure from the warehouse inventory system to record changes and other cost items.

In sum, computerizing the warehouse inventory system could save considerable labor, speed up billing, and facilitate better management control. Against these advantages must be placed the cost of introducing computer hardware and software in the warehouse.