COMPUTER APPLICATIONS IN BUSINESS AND INDUSTRY

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ABSTRACT

Today's one of the fastest developing technologies is the computer technology, which has also played a greater role in the development of business and industry in the advanced industrialized countries. The applications their-of are given in order to implement in various sectors of business and industry. Thus the computers can be used to raise the economy and enhance the quality and standard of the life, to the levels not contemplated previously.

INTRODUCTION

Computers and computer technology are affecting society in ways both great and small. They are being used to make life easier in every day transactions. Although the computers are only about few decades old, the industry has grown so rapidly that it is now the largest in the world. Due to computers range, power and universal applications, computer are being used in many areas of work. Computers have contributed very much to the improvement of managerial decision-making and solution of complex problems in education, industry, defence and business through simulation and quick data processing.

Computers have the capability of processing information in a fraction of time. In any business large or small, computers can be used to reduce paper work, thereby reducing the cost of performing routine transaction Business activities include controlling inventory levels,

billing customers for services and products, calculating payroll and supplies and supporting a host of other business function. Hardly a day goes by when we are not confronted by a computer, computer-based or computer generated business transaction. In industrialized developed countries, each time when one visits the bank, shop, super market, use a credit card to pay a bill, or buy groceries, computer or mini-computer is behind the scene, recording each transaction. Even a visit to a food restaurant involves computer-based-transactions.

Looking at the situation in Pakistan we find that considerable expansion has taken place in the area of computer application. The total number of computers used twenty years ago has been increased by several times. There are now small business computers used in business, government organizations and training institutions.

The present paper's objective is to show the effective use of computers in business and industry. How they have been utilized in the industrialized countries, in order to enhance their economy, and how can less developed countries benefit from them.

COMPUTER IN BUSINESS

The whole point of being in business is to make a profit and for lively business men, the object is to make this profit as large as possible. Wise business men, therefore, use computers only if these provide an opportunity to increase the size of the gap between income and costs. Only after the potential of the computer became clear, almost all over the world business became the largest single area of computer applications. Today computers are used to control stack of raw materials and finished products, bill customers, calculate employee's pay and taxes, analyze

who is buying the company products and perform hundreds of other administrative functions. More than half of the computers today in use are installed by business men to control and reduce administrative paper work and cost. Where-as automated business have responded to workers, consumers and others. That is to provide an equal or better product at an equal or lower cost, and to use computer or computer-based-system for removing human error. Labour may be shared in increased profits resulting from the automation process.

Computers have always been regarded as tools of large organizations. They were so large and so expensive that only wealthy organizations would afford them. Small businesses, although possibly desiring to use computers, found the cost factor prohibiting them. The first break-through for small businesses came when computer service bureaus were formed, (2) offering either time on their computers data processing services for a fee. It has not proven to be satisfactory for small businesses, for it usually required that the small business confirm many of its administrative practices to the way the service bureau may provide its data processing services. Later it was observed that the applications best suited by the computer in business are those that require little computational power and logic but require the same simple set of operations to be performed on large sets of similar data. Keeping in view this requirement, electronic technology evolved to the point where computer manufacturers produced computer systems that are well within the reach of almost any business, large or small as far as cost and efficiency are concerned.

These, new small, inexpensive computer systems brought advantage to small business that previously

had to rely solely on manual data processing activities. As the cost of computer equipment continues to decrease more and more small businesses will be able to utilize computers in their organizations. Many computer programs for small computers are now available to handle typical business activities. The computer system available today, for small businesses, having computing power of computers available, for example, ten years ago were many times bigger and too expensive. Most of the activities that large organizations perform on computers can now be implemented on micro-computer systems instead of previously huge mainframes for small organizations. Small insurance agencies use small business computers to store and access all the information needed in daily operations. Information on the clients, policies and companies can be easily compiled and summarized for management needs.

ACCOUNTING AND FINANCE

Accounting and Finance are two closely related disciplines involved with the selling of goods and services. Accounting systems have been the most successful at satisfying business needs and the greatest acceptance in the business community.(3) Basically the purpose of an accounting business computer system is to maintain data that accurately represent the financial state of the company. Major applications of computer technology within the accounting area include payroll, billing accounts receivables and payables, general ledger and inventory control.(4)

Finance is the speciality of managing money. People who work in the finance department assess the company's need to money, determine ways to raise capital when needed, and evaluate proposals to spend it when

appropriate. Finance personnel use the computer primarily for three reasons. First the calculation of profit rates, rates of return and other such financial measure, crucial to managing money. Financial planning involves answering many questions. These types of questions can be answered easily by computer systems. The analyst needs only change one or two inputs values and submit a request for another computer run to obtain the required answer. A third reason for using the computer in finance is that alternations to be evaluated often have complex interactions that can be processed better by computer than humans.

COMPUTER IN RETAILING

In recent years the grocery industry, as is true of most other industries, has grown in size and complexity. Old fashioned pencil, paper and mechanical methods of records keeping developed before the age of electronics, no longer fill the need. Supermarkets get bigger and more congested, and are in desperate need of better ways to serve their customers. Hundreds of people each day pass through the assets of a grocery store. Counting and recording the number and type of products purchased in a single day would take a person hours of time. Here in many of the situations where the computers have helped and have become an essential tool of business as well as a significant aspect of our societies by the use of the Universal Product Code (UPC) and Point of Sale (POS) terminals, a computer can greatly enhance the performance of retail stores.(5)

The UPC is a standardized bar code found on most products in retail outlets. The code is used to identify the product and its manufacturer. The POS terminal is used to record products sales in much the same way as a

typical cash register. The difference is that a POS terminal has much greater capabilities. Instead of keeping in each transaction as would be required on a case register the sales person using a POS terminal nearly passes the products UPC by an optical scanner programmed to read the code. The scanner interprets the code, looks it up on the computer file and retrieves the products name and price. The transaction is then recorded by the computer and a customer receipt printed, listing the item name and price.

Retail computer systems using POS terminals are also used to update inventory levels and calculate sale figures. In addition, these systems allow determining of a customer's credit status. A credit card number can be entered into the system. Within seconds the computer can check the customer's account and determine if the transaction is acceptable. If the transaction is processed, the computer can automatically record the sale in the customer's account.(6)

Modern retail organizations have found that the best way to handle the increase in transactions, to meet the needs of increased accountability, and to provide customers with competitive prices, selection and service, is to turn to computer technology. New computer systems in the retail industry are designed to speed up actual store-level transactions, and to provide customers with more efficient service.

COMPUTER IN INDUSTRY

Industry has always been a big user of computer, but their use was often limited for accounting and book keeping . Now computers are controlling almost every aspect in the factory in advanced industrial countries spe-

cially in U.S.A. and Japan. The big use of the computers is in the processing industries like petrochemical, food and metals, where a continuous process could be electronically monitored and controlled. Other big users of computers have been the aerospace and automotive industries. Both are deeply involved in Computer Aided Design (CAD) and Computer Aided Manufacturing (CAM). These are the two processes that have greatly assisted the manufacturer's job.

COMPUTER AIDED MANUFACTURING

Manufacturing is a large part of economic activity in industrialized nations. The computer revolution has done much to increase the productivity of manufacturing facilities. Manufacturing involves getting the right product to the right place at the right time in the right quality. Extensive planning and scheduling is required, to do this computers are being used to handle the routine scheduling of inventory, machinery and laboratory. Computers are also used to simulate future status of the economy and manufacturing demand.Many programmes are available for manufacturing facilities. Inventory control is handled by a complex system called Materials Requirement Planning (MRP). This system allows the manufacturer to enter future demands into a computer and receive a report that lists the scheduling dates and raw materials needed to manufacture the product to meet those demands.

COMPUTER AIDED DESIGN

The development of a wide range of products from electronic circuits to building construction requires a number of very specific steps. These steps include preliminary design, advanced design, model developement, final

design, actual production and construction. All can be done more efficiently and effectively by the use of computers.

COMPUTERIZED AUTOMATION

In a broader and more technical definition automation can be described as the substitution of mechanical, hydraulic, pneumatic, electrical and electronic devices for human observation, decision and effort, so as to increase productivity, control quality and reduce cost.(7) It involves the use of various technological devices and methods to perform manufacturing operations, or any other process, without the direct intervention of a human being.

COMPUTERS AND MANAGEMENT

Industrial and business managers at all levels practice the science of management. Their job is to carry out the basic management functions necessary to attain company goals.

The role of top management in highly computerized businesses of the future is speculative. However, many top management decisions are made on the basis of:

(i) Computer forecasts of work to be done.
(ii) Comparative analysis of current production relative to previous production, such as first quarter of 1993 compared with first quarter of 1992.
(iii) Computer analysis of survey for future planning.
(iv) Computer data work in progress.

More-over, the management can have benefit of portable teminals with capability of communicating

with distant computers. Computer through telephone connections are vastly increasing the efficiency and hence the productivity of business personnel. A portable terminal, size of a small brief case, can allow a traveler to connect to a computer in the home office and receive messages from secretary and others in the firm. Messages can be directed back to personnel in the office, retrieve information from the firms computer, transmit correspondence through a Word Processing System at the portable terminal and even enter order for products received as a result of the days sales activities.

PAYROLL SYSTEM

A payroll system is one of the earliest. By its very nature, it involves carrying out a large number of fairly simple calculations according to predetermined rules on very large sets of data. The systems available are capable of working out wages, making the necessary entries in the ledger, working out tax and other deductions and then printing the payslips of his salary, tax paid in the end of the financial year.

Once the system has been setup according to the requirements, by giving the details of pay, over time, then user has only to enter the payroll number to enable the whole system to work. As this information is required for any payroll system, no extra work is involved in running a computerized payroll system. In the end, apart from updating the nominal ledger, is a payroll analysis report giving details of gross pay, net pay, tax and other deductions on departmental basis, alongwith printed pay slips and bank cheques.

INFORMATION SYSTEMS

The success of any business depends upon being

able to communicate information. Some information processing system can perform this task. Consider a business that has created a database of storing information about all its resources in a computer. In a database computer system, raw data is gathered from various departments, processed into information, and then sent back to appropriate departments as required.

One centralized computer system can serve several different departments of an organizations. Information is usually stored so that users of the system can access the information and use it to prepare documents. Users terminals can request the necessary information so that computer display specific information on their terminal's screen.

The biggest use of the computers is in information processing which is used for operations that involve routine logic and mathematics, but which require the same processing applied to numerous similiar transactions. Some of the industrial and business areas where information processing methods are widely used are accounts payable, accounts receivable, general ledger inventory control, payroll tax, accounting utility billing, business billing, order processing, production, scheduling, sale analysis, warehouse control, labour distribution, forecasting and credit card accounting.

COMPUTERIZED BANKING SYSTEM

The banking industry makes extensive use of computer technology. A bank processes huge amounts of paper in the form of checks, loan records, deposits, savings, and investment information. The account balance of every customer is kept upto date. To faciliate these activities, computers can be found in every banking institu-

tions. One of the latest innovations in banking is the 24 hours banking services in the developed countries. A computer controlled machine makes it possible to perform banking transactions day and night. The bank customer uses a plastic card and selects transactions by pushing a series of buttons. Many banks have installed the machines in the outside walls of the bank buildings. The machines can also be found in supermarkets, airports, and on university campuses.

Another application of computers in banking is the, bank-by-phone-concept. The bank of America in San Francisco has a computerize system that allows bank customers to utilize the bank services by telephone. This system is called BAMTRAC (Bank of America Tracking System). A user can dial a transactions by using a Touch-Tone telephone. The BAMTRAC system can even talks to the customer, a voice syntheizer is programmed to respond the customer giving transaction instructions and informations.

CONCLUDING REMARKS

Computers have a wide range of industrial and business applications. Indeed, high speed computational devices have been a primary factor in rapidly changing techniques in may areas of both business and industry.

The main reason for the non-implementation of the computer based system in Pakistan is the unawareness of our leading industrialists, manufacturers, businesses men and planners. This is why Pakistan could not achieve the same goals as the industrialized nations could in the world.

It is, however, encouraging that with the dedi-

cated efforts of some national organizations we are moving towards achieving such goals. Government organization such as PIA, and some banks have incorporated the computerizations in order to increase the efficiency to compete at the world level by adopting computerized transaction systems of billing, cashing at banks super markets and other places. We can minimize or root out almost every day lootings of banks and individuals in the main cities. Tax collection system from business and industrial side can be improved by installing automatic computerized systems at small to large shops, supermarkets and industrial units.

The private sector must devote or invest some part of their income in the development of computerized system. Further efforts should be made to promote cooperation among industries, universities and research organizations for this purpose.

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