ELECTRONIC MAIL, A BRIEF IDEA

SHAIKH HASIBUL KARIM

It has been a great desire of the people to communicate with each other over a long distance. Many types of systems have been developed; among them the mostly used and the most popular communication system is the tele-communication system the ordinary mailing system is another one. The main disadvantage of the ordinary mailing system is the time it takes during its procedure. Telephone provides instantaneous access, but a high percentage of the business calls fials to reach the intended party.

Now a days, people are starting to use the Electronic mail (or shortly E-mail) system. This system lets users easy way to communicate nationally or internationally with one another using public telephone networks or special data communication networks. Using E-mail one can get information from the databases established throughout the world into his personal computer. E-mail has the speed of telephone, both parties be available at the same instant. Usually it leaves a written copy of the message that can be filed away or forwarded to the called party. In many countries, private companies and PTTs (eg. Bangladesh Telephone and Telegraph Board) offer E-mail as standard service to individual subscribers, institutes and companies.

BASIC STRICTURE AND WORKING PRINCIPLE OF E-MAIL SYSTEM :-

Let's consider an ordinary mailing system. What does a person do in this system? According to the proper sequence he or she can do the following jobs.

(1) To write a letter (i.e. creation of messages and answers which should be given by the person)

(2) To post the letter (i.e. to adopt a process of transfer the message)

• The next steps are performed by the mailing system. The letter is then handed-over to the person whom the letter has been written to. In order to perform these steps a long time is needed.

The same steps. rather a few more steps, are benign performed in the E-mail system with a very high speed. The basic aspects of any E-mail system are :-

(1) **Composition :** The process of creating messages and answers.

(2) **Transfer :** Moving message from the originator to the recipient.

(3) **Reporting :** Telling the originator about the fate of the message.

(4) **Conversation :** Which may be necessary to make the message suitable for recipient devices (line terminal, printers etc.)

(5) **Formatting :** Relates to the from of the displayed message on the recipient's terminal, and

(6) **Disposition :** It concerns what the recipient does with the message at the end.

Additionally, most E-mail systems provide a large variety of advanced features like forwarding the mail to a place when the recipient has moved or sending a cannel reply to the originator that the receiver is away and telling when he will return. Most e-mail systems allow the users to create mail boxes (usually files) for storing incoming messages. Commands are available to create and destroy mail boxes, inspect their contents, insert and delete message from the mail boxes and similar other facilities.

GENERAL MODEL-BLOCK DIAGRAM) :

The general model of E-mail system used by MOTIS (Message Ori-ented Text Interchange system) and many other systems is shown in the following figure.

The user agent (UA) is a program providing an interface between user and the mail system. It allows the user to compose, send and receive mails and also to control the mail boxes. In general the UA is seen on a PC (Personal computer) at home or at working place.

The message transfer agent (MTA) works as an electronic post office. It accepts messages from user agents. An E-mail message may propagate through several MTAs before reaching its destination. MTA is run on a mini computer or a mainframe operated by the National Telephone and Telegraph Board or some other private organizations.

E-mail boxes : The personal computers are connected to the MTAs for a short fraction of the day. If a message comes in when the UA is not connected to the MTA, the message is stored in the E-mail boxes. The incoming messages can be placed in the mail boxes until the user logs into the MTA to send or delete them.

E-MALI SYSTEM IN BANGLADESH :

In the advanced countries, electronic-mail system is very popular and is being used widely. The National T&T Board or some private organizations provide this system to the users. In our country, a few companies are taking the initiative of running this system. They are offering the subscribers (Who can afford) to use this system. We can hope that this system will become soon very popular and a widely used one in this country too. ◈

Message Transfer System
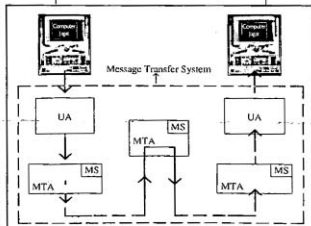
TECHNIQUES OF INFORMATION TECHNOLOGY —AN OBSERVATION ON EXPERT SYSTEMS

S.M. Salmat Ullah Bhuiyan* & Mohammed Shah Alam Chowdhury**

1. INTRODUCTION

Expert systems are sometimes referred to as being a form of artificial intelligence. This is misleading as they are not systems which are capable of thinking for themselves, instead they use and sift through human knowledge in the specific order in which they have been programmed. Therefore, expert systems can hardly be called artificial intelligence within the true meaning of the term.

Expert systems are programmed with knowledge supplied by a person or a group of people with expertise on a particular topic. These people are referred to as 'experts' because they have some specific body of knowledge which is not shared by the majority of other persons. Once their knowledge has been incorporated into the system becomes an expert system. Thus an expert system is a computer programme which contains the accumulated knowledge or wisdom of an individual or group of individuals on a particular topic. The programme may be interrogated by the user to find answers to specific questions or problems.

2. TYPES OF EXPERT SYSTEMS

The expert systems have been classified according to the benefit which the organisation hopes to gain by installing them. They could have been classified according to the nature of the expert systems employed, viz. diagnostic systems, systems for selection and planning systems. However, the typology of expert systems is briefly outlined below :

2.1 Expert Systems for Planning

Expert systems can be used to plan a design or configure a product and Digital Equipment Corporation (DEC) was one of the first companies to use it this way1. Xcon, Xsel and Escort are the typical expert systems used for planning. Xcon checks the order and designs the layout of each computer, and is much more reliable than the human experts. Xsel is used by the salespersons in order to solve the problems of order backlog,

order returns and renegotiation. Escort contains details of all the engineering knowledge about the basic operations and also the idiosyncrasies of particular piece of plant2.

Clarks shoes (UK) uses an expert system for planning the different sizes, styles and colours to be made in batch production. The benefit to Clarks is flexibility of production. This degree of flexibility could not be achieved if humans did the planning3.

2.2 Integrated Expert Systems

There is great potential with integration for reaping more benefits. One area in which progress has already been made is by integrating CAD (Computer aided design) and expert systems to provide a 'thinking' system. Progress towards fully linking CIM (Computer integrated manufacturing) and expert systems is beginning4. Expert systems are available which operate in real time and which can monitor several thousands of variables at the same time. These systems can be used for process control.

2.3 Off-the Shelf Expert Systems

All of the systems considered up to now have been developed by an organisation for internal use to solve a particular problem. It is possible to buy off-the shelf expert systems to give specific advice. British Legal publishers Butterworth Company developed an expert system on 'latent damage law'. It is considered to be an obscure area of law of which few have much knowledge. This system comes together with a booklet and consists of about a thousand rules. In comparison with the price of legal books this is relatively quite cheap5.

2.4 Personal Productivity System

This is the simplest type of expert system. It has low levels of complexity in both its embodied knowledge are technology. Examples include a personal budgeting system running on a PC built with a DOS-based expert systems shell. The key thrust of these systems is to improve personal decision making and

thereby increase productivity6.

2.5 Power Decision Systems

This is knowledge intensive system and is relatively uncomplex in its technology. These systems incorporate the knowledge of highly skilled decision makers including the professionals working on difficult problems. Power Decision System (PDS) operates on relatively simple stand-alone computer. The PDSs are used for engineering analysis, financial and portfolio analysis, and medical diagnosis7.

2.6 Integrated Production Systems

These Systems involve advanced technology. These types of systems tend to target organizational productivity by improving throughput, reducing headcount, and lowering costs. Such systems might communicate regularly with larger administrative systems, access large database or be ported to a wide range of different computer hardware environments.

2.7 Strategic Impact Systems

The systems contain high level of complexity in its technology. They have multiple informations sources and the information is uncertain. The decision making process is long and intricate, and requires testing of numerous hypotheses. Strategic impact systems often need high levels of systems integration. Given the type of complexity and the unavoidable costs and time associated with it, a company must be very sure of the expected benefits of the system8. The benefits must come at different levels: improved decision making, organizational productivity, and greater marketing effectiveness.

3. Utilities of Expert Systems

Expert systems improve company image through more efficient services. They ensure the quality and consistency of decision making. They are used to concentrate on more critical problems. However, an organization may require an expert system for any of the following reasons :

3.1 Improved quality of decisions

The expert system can be

* Associate Professor, Department of Marketing, University of Chittagong.
** Lecturer in Marketing, Department of Marketing, University of Chittagong.

programmed with the best knowledge available which will be based on the best expert working at the top of his/her form[9]. Thus, better decisions can be made regardless of the level of skill of the individual in charge of making them. Moreover, better quality decisions save money providing the customer with a better and more consistent image of the organization.

3.2 Time Compression

An expert system can be used to save a considerable amount of time in the analysis of a problem and making the diagnosis. The amount of time taken for diagnosis is reduced to about one-tenth of that taken by humans[10]. Therefore, it seems reasonable to assume that level of reduction is possible in most instances.

2.3 Cost Savings

Considerable cost savings are possible through expert systems. Often, systems pay for themselves within the first year and most have recovered the initial outlay by the end of their second year of operation. This saving in cost is generally achieved by speeding up the decision making process or by improving the quality of the decision[11].

3.4 Training

There is plenty of potential of use expert systems to train staff both on and off the job. Expert systems can also be used to train staff in particular skills. Programmes can be used to put trainees through their paces by setting a problem and inviting the trainee to suggest a solution. If the answer is wrong the trainee can be taken through the decision stages step by step and given a printout on the correct decision process[12]. Working alongside an expert system can also improve the knowledge of relatively inexperienced employee.

4. Criticism of Expert Systems

Expert systems can present a human dilemma. Knight and Silk mention that experts disclose their hard-won knowledge to a machine essentials[13]. It can be a way for a human expert to enshrine his knowledge in permanent form, and thus achieve some form of immortality. UK companies are most sceptical about the computer's chances of taking over from human experts. Price Waterhouse survey reveals that, in the UK, 28% of companies have no faith in expert systems[14]. Moreover, a number of survey questionnaires were returned by the executives with the comment " What is an expert system?"

A number of expert systems are used for executive information system. Executive Information System in mostly confined to top management. By using EIS, the top executive sees what is going on but the manager below him may not have access to the same information even though that manager has his own critical success factors or performance indicators to monitor. it makes sense to provide similar information service right down the chain. Otherwise EIS will become known as Excessive Information System (Bird)[15].

5. Conclusion

The best method of organizing an expert system depends entirely on the type of application. It could be argued that any company could attempt to build any one or all of the basic types of systems. In developing expert systems, human experts must be supported by knowledge engineers or system analyst. It is of course prudent to try to minimize technical complexity of the expert systems. Finally it can be said that expert systems or knowledge based systems will become a greater feature of most people's lives whether in the factory, office or home.

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