



**ORGANIZATIONS  
AND SOCIETY  
and INFORMATION  
SYSTEMS**

**w. g. 8. 2.**











- \* office systems and the professional work station
- \* decision support systems, knowledge representation in information systems and expert systems
- \* information systems in central and local government
- \* information systems in developing countries
- \* cross cultural comparisons of design, development and implementation of information systems

We are asked to consider this list at our next meeting and to make proposals for additions that can be discussed at the London meeting of T.C.8 on September 7th.

WORKING GROUP 9.1 - Computers and Work

Dr. Ulrich Briefs, the Chairman of W.G.9.1, has sent us news of their activities. In May of this year they held a workshop on Personnel Information Systems in Velm, Austria. In September they are holding a working conference on 'Computerization, women and work' in Riva del Sole. In September 1985 the third of their very successful conferences on Human Choice and Computers will be held in Stockholm. They are also organising a conference on Practical Approaches in Participative Systems Design.

Clearly our working group has many interests in common with W.G.9.1 and it would be very exciting to have some joint activities with them.

#### OTHER CONFERENCES

Once again I am drowned in leaflets about conferences, here is information about a few of them.

Workshop and conference on applied AI and knowledge-based expert systems. Stockholm University. November 29-30, 1984

Conference on Analysis, design, and evaluation of man machine systems. (IFAC/IFIP/IFORS/IEA). Varese, Italy, September 10-12, 1985

Data processing - development and use of systems and tools. Aarhus University, Denmark, August 26-30, 1985

#### DISCUSSION FORUM

##### Design Issues

Design is very much a subject of debate at present. The Economic and Social Research Council has been holding joint discussions with the Science Council in the U.K. and many computer manufacturers seem to be recognising that designing machines that are easy for users to use is both important and profitable. I am struggling with a sophisticated system at work and an equally sophisticated



personal computer at home and finding that the mental strain is tremendous. It is impossible to remember all the different instructions and their logic is not apparent to the new user.

Hans-Erik Nissen has sent OASIS an interesting paper that he gave at a W.G.8.1 meeting in London in April. It is entitled 'Who needs to understand whom in order to understand the design process'. He stresses that design for information systems encompasses both computerized data systems and organizational redesign. The latter usually involves the redesign of work and in many situations it is the primary task, being viewed as more important than introducing data processing.

Organizational redesign is carried out for people and by people. It therefore affects motivation and requires learning. But learning is not easy and it needs help and support. Hans-Erik suggests that it is only recently that designers have become aware of the need to support learning tasks. But their methods are often clumsy and inadequate. Few people can learn easily from a thick user manual.

Therefore we still do not really understand the design process and how to manage it. And yet a number of different groups urgently require this understanding. For example, researchers, professional designers, people working in organizations - both managers and their subordinates, and external clients. All of these groups have different values and interests and a useful theory of design must be able to encompass all of these.

Hans-Erik suggests that these groups require both to understand themselves and each other better than they do

at present. Most designers still see themselves as primary problem solvers who assume the most active role in the design process. The designer identifies the problem, analyses it and creates the solution which he then gives to the passive user. Very often the end user is not even his client. The client is the end user's manager.

Hans-Erik describes a different approach to the design process which has been described by Dick Boland in a paper called 'The process and product of systems design'. (Published in Management Science, vol.24, no.9, 1978) In this situation, a hospital, the end users who were nurses met with the designers on an equal basis and jointly proposed solutions. Both parties looked upon the interaction as a series of mutual teaching/learning, suggesting, and examining protocols.

Hans-Erik believes that it is the end user who should be in the driver's seat when new systems are being designed but the end user must be aware of the additional knowledge which he/she will require to assume this role and know where to find it. New systems should also be transparent and declare their limitations so that end users understand where they need to be supplemented.

People therefore need to understand each other, the situations in which they work and the limitations of the systems which they are going to use. This increased knowledge will assist a greater understanding of the design process. In fact, the design process cannot be understood at all unless the people behind it are made visible.

Please let OASIS have your comments on design.

## RESEARCH

### The Alvey Programme

W.G.8.2 members may be interested in learning something of the U.K. Alvey research programme initiated by the British Government. This is funded with a £350 million grant and is intended to encourage researchers to cooperate with British hardware and software manufacturers in developing what are called enabling technologies. These are technologies seen as fundamental to the development of IT and which will influence all its aspects.

The Alvey programme is organized into four main sections:

\* VERY LARGE SCALE INTEGRATION. This involves the development of more effective integrated circuits than currently exist and the development of computer-aided design programmes, seen as essential if such circuits are to be constructed.

\* SOFTWARE ENGINEERING. The development of the methods and tools that will turn the production of software from a craft into an engineering discipline.

\* INTELLIGENT KNOWLEDGE BASED SYSTEMS (IKBS). The development of expert systems, both rule based and using association.

\* MAN-MACHINE INTERFACE. This part of the programme was originally defined as being concerned with communication. The ability of the human being to communicate easily with the machine. It has now been more broadly defined.

The broadening of the MMI definition largely came about as a result of two Alvey workshops to which a number of ergonomists and behavioral scientists were invited. These specialists, who included a number of IFIP working group members, pointed out forcibly that progress was not made just by designing advanced technical systems. These systems had to have a market and had to be acceptable to users. Design did not stop with the machine; as Hans-Erik has said, it needs to embrace organizational and quality of working life issues.

These arguments were accepted by the Alvey Directorate who are now welcoming research applications which are application and user oriented.

The Alvey programme is a U.K. version of the European ESPRIT programme (the European Strategic Programme for Research in IT.) ESPRIT has two additional application areas - office automation and computer-assisted manufacture and requires cooperation between research teams from different EEC countries.

#### HELP WITH RESEARCH

OASIS can act as a useful vehicle for providing research help to members who need it. We have a very wide range of knowledge and expertise within our group. May I take the initiative by asking if anyone can help me?

I am just starting two research projects on expert systems, working at both the input and the output end of these. I am interested in learning of any work, publications etc. concerned with methods for eliciting

knowledge, particularly the use of participative methods for doing this. I am also anxious to hear of any work that has been done on user problems with expert systems. Cultural factors that make them unacceptable or difficult to use, for example.

If you know of research in these areas I should be most grateful to hear of it.

If you would like to ask for help in this way please let me know.

SEE YOU AT THE COLLOQUIUM IN SEPTEMBER. HAVE A VERY ENJOYABLE HOLIDAY