

PEOPLE AND COMPUTERS COMMUNICATING

WHY BOTHER ABOUT PEOPLE ?

A technically brilliant system is no use if it, and the people who use it, can't communicate with each other. The people must be able to give instructions to the system, and the system must be able to report results, good or bad, to the people.

In addition, every system shared between people has to keep track of who's who, who's where, what's whose ... , so that it can give people access to their own property, but protect them from others (and, incidentally, protect itself from everyone) – so an operating system must be designed for people, and it must know things about people.

WHAT DO WE NEED ?

The sorts of communication we need depend on the sorts of interaction between people and computer which the system must support. Here are some examples of important areas :

- **GETTING WORK DONE** : traditional – do the basic job of the computer. The other requirements are all subservient to this in one way or another. We've already seen that this includes at least two components – giving the instructions and executing the programme code.
- **SETTING CONVENTIONS** : the way people use the system, and particularly the control language or its equivalent, define the terms in which people think of the system.
- **SOFTWARE DEVELOPMENT** : the programmer's interface; means for programmers to gain access to parts of the system which they might legitimately wish to use.
- **THINGS TO MAKE LIFE EASIER** : facilities (often implemented as programmes, and called *utilities*) which don't necessarily do anything very new, but make it easier to use what's there constructively.
- **PEOPLE MANAGEMENT** : keeping track of who owns what, who's doing what, who's permitted to do what ...
- **OPERATIONS AND MANAGEMENT STAFF** : they're people too; they need things to help in controlling the system, administering resources, collecting performance data ... (There's some current interest in *automated operation*, where the aim is altogether to eliminate the need for operators. That's become thinkable with the disappearance of the manual jobs which operators used to do – carrying cards, paper, and tapes. There remain the administrative jobs – operations control, to keep the computer going, and management control, to keep track of what happens – which still have to be done, but these are reasonably amenable to automation.)
- **SOURCES OF INFORMATION** : how to find out about things : the system itself, what went wrong, how to do such and such ...

SO WHAT ?

There is a lot more to an operating system than providing software to keep the computer going. In order to use the available resources effectively, we have to find out what facilities are needed for various groups of people to do their work, and provide a system which will help them to do it in ways which optimise the performance of both the people and the machinery.

SERMON.

People associated with computers in the early days of development felt privileged to be working with such marvellous machinery, and would put up with all sorts of inconveniences. They had to : hardware was scarce and expensive, and frequently insufficient to get the essential work done. Times have changed. People quite rightly expect more from computers now, and there's no excuse for not giving it. Machines are there to help people, not to persecute them. But helpful systems don't grow spontaneously; someone has to design the helpfulness, taking into account what should be provided, and how it should be presented and organised.

COMPARE :

Lane and Mooney^{INT3}, Chapter 4.

QUESTIONS.

Are there any other "important areas" ?

"There is a lot more to an operating system than providing software to keep the computer going." How far should it go ?
