New approaches to systems analysis and design
Welcome

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This seminar is being held as a tribute to the late Eric Norbury Mutch, Editor of *The Computer Journal* from its foundation in 1958 until his death in January 1969.

In 1956–57 he had helped to bring together the groups of scientific and business users to form The British Computer Society, he was a subscriber to the Memorandum and Articles of Association, and he served on Council for eight years. When Council agreed to found the Journal he formed an Editorial Board of eleven members and negotiated a procedure with the printers, which enabled us to make the most use of honorary effort and placed a minimum load on the then BCS office staff of three.

Our publicity efforts, though amateur by present day standards, and the editorial levels that we were able to set, with the help of the Board and other referees, resulted in the Journal rapidly achieving international recognition. By Volume 6, in October 1963, when the BCS had 2,900 members, the Journal had 1,200 overseas and 300 home subscribers which bore the bulk of the cost of publication.

From his wartime career on radar at Malvern, throughout his work from 1948 with Dr Wilkes at the University of Cambridge Mathematical Laboratory, where Edsac made its first computation on 6 May 1949, Eric Mutch was always concerned to see that the latest technology was made available to the USER, through the help of his operating instructions and guidance manuals.

Over a period of some twenty years, from 1949 to 1969, Mutch lectured at Cambridge courses, at seminars and summer schools, and by invitation to professional bodies in London, at the Northampton College—now The City University, at Dundee and elsewhere. In his introductory lectures he was able to get across to mature students the potential power of the new electronic computer over its mechanical predecessors, particularly its ability to modify its own orders by binary arithmetic, even when there was only a single accumulator.

I well remember our first editorial meeting at Cambridge and his excitement, which I shared, at our first paper—'Parallel programming'—by the late Stanley Gill. This introduced us to the 'new world' of computing, where the machine's facility for multi-job and multi-user began to open the door to the direct use of computers by clerks, engineers, and students, in a manner which we could not dream of in 1958–59. We had little concept of that 'new world' then but Eric soon met it in his position of Superintendent of Computing Services at Cambridge.

When Eric died in 1969 the functions of systems analysis and systems design had already been established and were developing rapidly. Eric Mutch would have been delighted to bring together a seminar such as we are going to have today. The Editorial Board is most grateful to Peter Hammersley (the present Editor) and all those who have helped to organise it, and the others who have come here to talk to us. It will, I feel sure, be a proper tribute to his memory, ten years after his work with us suddenly ceased.

Chairman's introduction

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Computers have been around for some thirty-odd years and have been used as part of business and administrative information systems for about the same time. But it is only since the 1960's that their use for data processing has been at all widespread, though the rate at which computer systems have been introduced in that period has been astonishing. In these thirty-odd years the craft of designing and implementing computer based systems has been pioneered, has evolved, and has reached its current state. If we examine the state of data processing in 1979 from a distance, then what we notice most is the way the use of computer systems has spread, and is continuing to spread at a rapid rate. We may also note that the vast majority of organisations who have adopted computers, not only continue to use them, but continue to increase their use of computers.

In the face of this remarkable success story, it is possible to ask—Why 'new approaches to systems analysis and design'? Are new approaches necessary or desirable? In the mid-1960's, and again in the 1970's, as generation of computer architecture replaced generation of computer architecture, computer people and users grumbled at the cost and effort of adopting these new tools. Are we now going to insist that systems analysts and designers forget their established methods and learn new approaches?

If we come closer to the computing reality of 1979 and go forward to consider the requirements of the 1980's, we observe a number of features which suggest that the established methods and techniques of systems analysis have not served us as well as the continued growth of computing might have led us to expect. Further, the technology itself is changing and requires new approaches if it is to be utilised effectively. Some of the aspects of computers in data processing which suggest new approaches are needed, are the following:

1. The recognition in study after study, including the recently published BCS report, that there is often a difference in perception between EDP people and users as to the success of computer systems. Users report that the computer systems cost more and take longer to develop than had been estimated and that when they are implemented they are not quite as useful as had been expected, or are difficult to work with. Above all users complain about the inflexibility of computer systems. In a sense users are looking