

Preface

IBM has long recognized the importance and usefulness of pursuing advanced technology projects in fields of basic importance to the foundations of our business. Originally this referred mainly to the fields of engineering and the physics of materials from which our machines were built. In 1964 with the initial formation of the IBM Scientific Centers it was formally recognized that systems research and advanced development were equally important to the future health of our business.

The Centers were formed as a corporate resource to work on those longer term projects which were essential to the growth of the business, but which were not tied directly to the short-term demands of the marketplace. Since that time Scientific Centers have been established in eight other countries. They serve as centers of competence bringing the company's talent and resources together to undertake problems of local and international importance. The Scientific Centers are staffed by experienced scientists and computer specialists who are concerned with new uses and innovative enhancements of IBM's products and services. Their work has made it progressively easier for people to use information processing systems in many areas. These facilities are visible evidence of IBM's continuing commitment to the future.

The projects undertaken represent a wide range of topics in computer applications research, advanced studies in system user interfaces, systems design, programming and many classes of information science problems encountered by customers. Often the studies are done jointly with customer or institution scientists. Usually such studies are of a non-proprietary nature and the results are published in the public domain. It is with such an open exchange that the growth of new ideas is encouraged and science thrives.

Some of the projects of the Scientific Centers are concerned with applying the power of the computer to the

solution of problems of national and international importance. For example, energy research projects have been undertaken in all three U.S. Scientific Centers, while projects on air pollution, flood control, land use, regional planning and medicine are major research thrusts of the Scientific Centers in Europe, Asia and Latin America.

It is the touchstone of scientific groups everywhere that the printed word is of paramount importance. This is the traditional medium for the expression and dissemination of ideas. As work is performed, the results are documented and references acknowledged. The paper is refereed, published and exposed to the critical examination of a peer group. Publication is a cherished professional right and I am pleased that the scientists in the IBM Scientific Centers exercise it well and frequently. The following pages contain a collection of papers from the Scientific Centers. Taken together they express a small part of the diversity of the work being performed. It is not the whole picture, of course, because that would require a broader canvas than this Journal can present.

Other papers by Scientific Center authors have frequently appeared in this and other professional journals. This entire issue is dedicated to current Scientific Center papers on topics of on-going work. Hopefully they will suggest to a broader audience other ideas which may extend this type of activity to areas as yet untouched. This special issue was originated and planned by Dr. Rudy Joenk who has recently left the editorship of the Journal for another position in IBM.

A handwritten signature in black ink, reading "Lewis M. Branscomb". The signature is written in a cursive, flowing style with a large initial "L".

Lewis M. Branscomb
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