The Great Data Communications Derby

Guest Editor's Introduction
by Louis Feldner

Some years ago a statement made by an AT&T spokesman triggered off the great data communications forecasting derby. That statement was, "Data traffic will be equal to voice traffic sometime in the Seventies.'"

This statement became the basis for many a product and market plan. Not only did the prediction become fuel for corporate planning fires, but venture capital soon found its way to the many new companies that were attracted by the golden promises of the data communications market.

Our first author, Roger Hough, takes a critical look at the various data communications forecasts that punctuated the decade of the 1960s. Hough raises questions as to definitions, validity and collection of the data used to support the various forecasts.

Many of us who have been engaged in the data communication forecasting arena agree with Hough that the time has come for us to develop a more rational forecasting process. We need better definitions and standard methods by which to assess and collect the data. The impact of erroneous forecasting in this area is too serious to be left to old ways and conventional approaches. The needed rationalization process will have to be a joint effort involving government, the computer industry, the peripherals industry, the common carriers and the information services industries.

Our second article, by Bell, et al., deals with "computer network research." Since the early 1950s, the extension of the computer's power and usage, via either remote terminals or computer networks, has been a strong motivating factor among systems designers. The work and experience (much of it traumatic) gained by early workers on such networks served as a source of both knowledgeable manpower and concepts used in subsequent systems design work. Starting with the military systems in the late 1950s (e.g., SAGE), workers on computer networks developed a number of computer systems and projects, both military and commercial, which pushed ahead the state of information systems art.

Bell and his co-workers describe the work being done on computer network research at the Carnegie-Mellon University in Pittsburgh. Starting with the provocative possibility of the "buried recursive disaster," they move along to examine the rationale for using computer networks as well as various network system concepts.

The conclusions of the Bell article raise a number of intriguing questions regarding the organization, systems control, hardware and software that deserve detailed study. You will find much food for thought here.

Our third article,* by Holzman and Lawless of Bell Labs, describes the Data Set 203. If the 203 were just another Data Set we would scarcely have included it in this Special Issue, but the description of the 203 includes a look at what transmission rates (not throughput) the telephone plant will probably support on a broad scale. The transmission bit rates and the features and options described in this article form, in my opinion, the framework of the state-of-the-art for data communications for at least the next five years. Tables I and II in this article deserve to be hung above the desks of system designers and product planners, not to mention communication managers.

My grateful thanks to the authors who have been so cooperative. Working with them has been educational and they have given me much food for thought. I hope that you the reader will find these articles the source of ideas and insight that I have.

*This article originally appeared in the IEEE-ICC (70-CP-259Com).