

Computing at Bolt Beranek and Newman: The First 40 Years, Part 1

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This is the first of two planned special issues of the *IEEE Annals of the History of Computing* on computing at Bolt Beranek and Newman Inc. (BBN). Our purpose is to present “insider” accounts of work and life at BBN, especially as they relate to computing and the development of technology that led to the Internet. We are grateful to former *Annals* Editor in Chief Timothy Bergin for the invitation to prepare these issues and to current *Annals* Editor in Chief David Grier for guidance and support in the process of doing so.

The response to our invitations to the articles’ authors yielded far more material than could be accommodated even by two issues. Although 17 manuscripts were prepared and conditionally accepted for publication, we decided to publish only 12 articles in these two issues. Even so, most of the manuscripts we selected for publication had to be reduced in length, some severely. For these reasons, we intend to combine, in a book-length document, more extensive versions of the articles published here, articles that were withdrawn because of word-count limits, and other material we gathered as part of this project. (We are not sure of the exact form of publication, but the title will be *A Culture of Innovation: Insider Accounts of Computing and Life at BBN*. As soon as the detailed publication information is available, it will be posted at <http://www.computer.org/annals>.)¹

All of us who are contributors to these issues had long careers at BBN in technical or management positions or both. Thus, the articles are first-hand accounts by people who had major roles in “making it happen.” Without exception, we consider our years at BBN to be among the most professionally exciting of our careers, and we are grateful to editors Bergin and Grier for providing the opportunity for us to tell the story of computing at BBN.

In the first article in this first special issue on

BBN, Leo Beranek describes the founding of BBN as an acoustical consulting company and his decision to move the company toward computers by hiring psychologist J.C.R. Licklider. Next, John Swets considers the major role psychologists had in the early days of computing at BBN (and in the computer world more generally). Stephen Levy’s article recounts the history of commercial exploitation of technology that BBN developed. Frank Heart reflects on his experience as one of the early Internet pioneers and on conducting leading-edge R&D in a commercial company. The last two articles, by Sheldon Baron and by Richard Estrada and Edward Starr, delve deeper into specific technology areas to which BBN applied computers over the years: control systems and signal detection.

The second special issue on BBN, tentatively scheduled for January–March 2006, will address six additional areas of computer application at BBN: medical information processing, by Paul Castleman; educational technology, by Wallace Feurzeig; speech signal processing, by John Makhoul; natural language understanding, by Ralph Weischedel; data networking, by Craig Partridge and Steven Blumenthal; and distributed computation, by Richard Schantz.

As editors of these special issues, we have many people to thank. First and foremost, thanks must go to our authors. In addition to editors Bergin and Grier, we thank the *Annals* staff. The anonymous reviewers of the articles provided enormous help in shaping the final version of this project. BBN librarian Jennie Connolly and her coworkers helped us in hundreds of ways, as did many other BBNers and ex-BBNers (in particular, we recognize Deborah Malone for the special help she provided). Most of all, however, we appreciate the people of BBN whose intelligence, curiosity, and determination over the years created the computing innovations and work environment that make the BBN story worth telling.

References and notes

1. *A Culture of Innovation* will contain more extensive versions of all the *Annals* articles along with at least five additional articles to round out the story of computing and life at BBN. These will include one by D. Walden on the culture of BBN; three compiled by Walden on basic computer and software engineering in the earlier days at BBN, further topics of basic computer and software engineering, and on AI at BBN; and one by R. Nickerson and S. Fidell on computers and psychology at BBN in the years after 1965.



David C. Walden worked at BBN from 1967 to 1970 and from 1971 to 1995, serving in a variety of technical and management positions. Walden, an IEEE member, was a member of the engineering team for which BBN received an IEEE Corporate Innovation Recognition award in 1999, and was founding chairman of the IEEE Internet Award Committee.

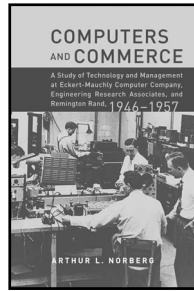


Raymond S. Nickerson worked at BBN from 1966 to 1991 in several technical and management positions. He is currently a research professor at Tufts University, from which he holds a PhD in experimental psychology. He is a fellow of the

American Association for the Advancement of Science, the American Psychological Association, the American Psychological Society, the Human Factors and Ergonomics Society and the Society of Experimental Psychologists. Among his books is *Using Computers: Human Factors in Information Systems* (MIT Press).

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