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### BBN's earliest days: founding a culture of engineering creativity

Beranek L. [IEEE Annals of the History of Computing](#) 27(2): 6-14, 2005. Type: Article

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Anyone who has studied the history of computing has come across BBN Technologies. The company was involved with such projects as the Advanced Research Projects Agency Network (ARPANET), email (they introduced the @), time-sharing, Logo, and the creation of the first Internet protocol (IP) router, along with other contributions to voice over IP (VoIP), speech recognition, parallel computing, and the development of transmission control protocol (TCP). Founded in 1948 by two MIT professors, BBN began its life as an acoustical consulting company. In fact, their first contract was the design of the UN Assembly Hall in New York.

In this article, BBN co-founder Leo Beranek describes the history of the company, including mentioning the various luminaries that have worked there or with them (Bob Kahn, J.C.R. Licklider, John McCarthy, Marvin Minsky, Seymour Papert, and the authors of the other papers in this special issue on the history of BBN, just to name a few), and describing the ways in which BBN expanded and found success in other areas. Perhaps most beneficial to readers, though, are the pearls of wisdom buried within the prose on how to create a company with the potential to have successes similar to BBN's.

Beranek argues that hiring smart people is essential when building an innovative company, and BBN did very well in this game. For instance, Beranek describes his co-founding colleague Richard Henry Bolt as having "the ability to quickly absorb new fields" and as "a judicious, thoughtful administrator," and Bob Newman as "a master" in acoustics

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with "a good eye for architectural design." Such people should be fairly compensated. In this regard, Beranek discusses the "K-factor" plan, used to inflate the salaries of key personnel to be in line with those of the company's partners. Another reward favored by BBN was a stock purchase plan, which rewarded employees as the company grew. A third financial technique for keeping employees happy was the establishment of a promotion structure similar to "the corporate ladder" for technical personnel, with titles and salaries commensurate with those on the business side. Many of these ideas have either been copied or repeated elsewhere

Next, Beranek discusses the need for steady growth and expansion, describing BBN's incorporation and organic growth. For instance, BBN went into the nascent field of digital computers mainly by following the interests of Licklider. Having purchased its first PDP-1, BBN set itself up to go into many lucrative areas that had computational applications. Further, Beranek insinuates that when BBN tried to quickly acquire and merge with other companies, it put the company's future in grave danger.

Aside from keeping its engineers financially comfortable, BBN's management wanted to make sure that the engineers could focus on real work, not red tape. To this end, each department had a finance person responsible for any problems related to money, space, equipment, and contract management. All staff members were treated equally, and were encouraged to develop professionally by belonging to the appropriate technical societies, and by publishing papers and attending technical conferences.

This article is recommended to anyone interested in learning more about the role that BBN had in the development of many fields. More importantly, however, the paper (and the special issue it is part of) is of interest to anyone who plans to create or grow a technology business. While many of the suggestions may sound trite (for example, "Treat employees as equals," and "Grow carefully"), it is surprising how often these basic ideas are forgotten in the business world.

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