The idea that companies could put their computer expertise to work for others had many ramifications. One possibility that presented itself was that efficient, centralized computers could manage access to and retrieval of information from vast storehouses of information. In 1960, Roger Summit, a doctoral student at Stanford University, took a summer job at Lockheed Martin Missiles and Space Company, where he was assigned to work on problems of information retrieval under the supervision of E. K. Fisher, the director of information processing. The central issue was how to locate and retrieve stored information in a cost-efficient, timely manner. At the time, according to Summit, the feeling was that it

was often easier to redo scientific research than it was to determine if it had been done before.

In the course of his assignment, Summit encountered the work of H. Peter Luhn, a researcher at IBM who had invented two significant schemes for the large-scale management of information—Key Word In Context (KWIC) indexing and Selective Dissemination of Information (SDI). In 1964, at Summit's urging, Lockheed Martin established a laboratory to study the application of these technologies. A project team of six led by Summit set out to create a technology that could facilitate efficient information retrieval. Among the criteria he established were that the system had to be usable by end users without the intervention of computing staff and it had to be interactive and recursive so that searchers could immediately see their results and modify their queries accordingly. Finally, researchers wanted to include an alphabetical list of searchable terms near a desired term and the number of items in the database containing that term.

By 1965, the team developed the prototype of what became the Dialog Information Service. To test the system, Summit submitted an unsolicited proposal to apply Dialog to NASA's Scientific and Technical Aerospace Reports (STAR) database, a database with

Technical Aerospace Reports (STAR) database, a database with 200,000 citations and one that was in great demand. NASA had been established by the Space Act of 1958 to spearhead America's drive into space, and part of its mandate was to disseminate information about its activities and findings as widely as possible. From its inception, the agency aggressively indexed books, reports, and research concerning aerospace, and in 1962, NASA's staff, working with a contractor, started entering the bibliographic citations into a computer.[30]

When Summit discovered a contract had already been awarded to a competitor, he proposed a smaller, less expensive parallel

project as backup if the competitor failed. For the test, Summit leased a data line from the Lockheed offices in Palo Alto, California, to the NASA Ames Research Center near the San Francisco airport. The test was conducted in January 1967. The turnaround time for a query was cut from fourteen hours when conducted at NASA headquarters to just a few minutes using the Dialog system.

Based on that success, Lockheed won a $180,000 contract from NASA to build what was called the Remote Console Information Retrieval system or NASA RECON. This was followed by contracts to install Dialog at the Atomic Energy Commission and the European Space Research Organization and, in 1969, a contract to provide the U.S. Office of Education with a retrieval service on the Educational Resources Information Center (ERIC) database. In 1972, Lockheed launched a commercial information service under the name Dialog. The initial service provided users access to ERIC, the NTIS database from the National Technical Information Service, and PANDEX, a science citation index. At its launch, Dialog had six customers.