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The computer as a tool for scholarly research is fast becoming as essential to the growth and progress of a university as its library resources, according to Dr. William S. Carlson, president of The University of Toledo.

In deciding to acquire an IBM 360-44 "scientific" computer, the University is acknowledging the necessity of providing the best modern equipment for its undergraduate and graduate programs, and for faculty research.

"It would be shortsighted," Dr. Carlson said, "to build our new University Library and neglect our computer capabilities. Basically, both are needed to meet our research and teaching requirements."

The IBM 360-44 is designed as a scientific computer. That is, it is more efficient and more economical for scientific research than computers of similar or somewhat larger size which are designed for many different kinds of work.

The need for additional computer capacity is indicated by the rapid growth of usage of the University's present machines -- an IBM 1620, an IBM 1130 and an IBM 1401 -- all of which primarily are designed for business and financial work. In 1962, the University bought its IBM 1620 and, in addition to business and general-purpose use, it was used by seven faculty members and one student for several hundred hours of research work.

In 1968, 66 faculty members and 49 students logged some 36,297 hours of computer time (converted to "1620 hours")*, according to Dr. John J. Turin, dean of the University's Graduate School. But, he noted, this was accomplished by using the computers on the campus, and larger computers at Owens-Illinois, Inc., Bowling Green State University, and at

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*(A "1620 hour" is the time required for an hour's work on the IBM 1620. The actual time on another computer may be different -- slower or faster -- but for comparison purposes, the time is figured on how long it would take on the 1620.)

Marathon Oil Co., Findlay, as well as others.

"We simply have reached the limit so far as access to outside computers is concerned," Dr. Turin commented. "Had we failed to move ahead with leasing of the IBM 360-44, we could seriously have undermined our research activities," he added.

Currently the University plans to lease the scientific computer for 18 to 30 months. After that, Dr. Turin noted, the University can reevaluate its capabilities in light of the establishment of a computer center involving UT, BGSU and the Medical College of Ohio. The Ohio General Assembly allocated \$2 million for such a center last month, he said.

Basically, Dr. Turin said, President Carlson's decision to go ahead with installation of a scientific computer will enable the University to keep up-to-date with teaching and research requirements for its many programs.

The University will retain the 1620 and 1130 computers for special purposes, and use the 360-44 for scientific purposes.

The IBM 1130 already is installed and in operation on the Scott Park campus, where it also will be used in the University Community and Technical College's courses for training computer programmers, and for general purposes.

Dr. Turin emphasized that the benefits of the additional computer capacity will be broad and cover work in many fields, not only those connected with the sciences.

The differences between the machines are significant, however, and for research purposes the 360-44 can retrieve information in one-third the time of a general-purpose computer of the same or larger size, and can add-in information about seven times as fast as the general-purpose machine. Conversely, Dr. Turin added, the general-purpose machines are much more efficient for handling business computations and financial records. The machines can "talk" the same language and, therefore, can handle special situations.

In effect, the University is taking a new direction in its computer facilities -- one that will properly emphasize the specialized requirements of teaching and research activity, Dr. Turin said.