

Information Technology ^[1]

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Additional research provided by Wiley J. Williams.

See also: [Research Triangle Park](#) ^[2].



School children learning computers. Image from the North Carolina Digital Collections.

^[3]North Carolina is home to one of the world's most vibrant information technology (IT) industries, which generally includes businesses and organizations engaged in the electronic storage, transmission, or processing of data through the use of computers. More than 2,300 companies involved in virtually every aspect of the manufacture, development, sales, and servicing of computers and computer-related products are located in the state and employ about 204,000 people. About 37 percent of these companies are located in the Triangle area ([Raleigh](#) ^[4]/[Durham](#) ^[5]/[Chapel Hill](#)), 27 percent in metropolitan Charlotte, and 16 percent in the Triad ([Greensboro](#) ^[6]/[Winston-Salem](#) ^[7]/[High Point](#) ^[8]).

A worldwide revolution in information and communications technologies has paved the way toward a new digital economy, and personal computers, mobile [phones](#) ^[9], and the Internet are altering the way that Americans work, shop, learn, and play. All of these changes have been a result of the growth of the IT industry across the country. The production and application of semiconductors—materials that make up the wide variety of microchips and other components used in computer technologies—represent a key segment of the IT industry and are the focus of several North Carolina firms. Hardware production and assembly relating to personal computers, software development, the manufacture of telecommunications and networking equipment, and a vast array of IT services also contribute to the diversity of the industry in the state.

The steady evolution of computer technology has greatly affected government, businesses, and personal lives in North Carolina. IT applications within state government have been numerous. In the 1990s North Carolina became the first state in the nation to implement a statewide digital network for data and voice communications. It also deployed a broadband network—an advanced communications infrastructure, or "information highway," that in the early 2000s served as a foundation for video and other connectivity across regions.

The genesis of the North Carolina IT industry in the public sector was in the initial application of computers in governmental affairs. Employing his wide experience in business, Governor [Luther H. Hodges](#) ^[10] in the 1950s sought to bring business management strategies to the state government. To this end, he persuaded the [General Assembly](#) ^[11] to create a Department of Administration, which became effective on 1 July 1957. Charged with coordinating fiscal and planning operations, the department soon began developing and operating statewide data processing and computer centers.

Computers entered North Carolina public higher education with much fanfare in March 1960, when the University of North Carolina Computation Center and its 19-ton Remington Rand Univac [computer was dedicated](#) ^[12] in Chapel Hill. In his address marking the occasion, Hodges traced the eight-year effort (1952-59) that led to the establishment of the center. The personalities and groups he credited included UNC presidents Gordon Gray and William Friday, chancellor Robert House, and other UNC officials, as well as executives of [Remington Rand](#), the [National Science Foundation](#) ^[13], and the U.S. Bureau of the Census.

Arguably Hodges's most important accomplishments as a state leader came through his role in the development of the [Research Triangle Park](#) ^[2] (RTP). Situated squarely between the campuses of [UNC-Chapel Hill](#) ^[14], [Duke University](#) ^[15], and [North Carolina State University](#) ^[16], the RTP subsequently attracted many government agencies and research and technology companies. By the mid-1960s, largely because of the RTP, the state had become a national leader in programs supporting IT and other scientific endeavors. Currently, the RTP is ranked as one of the top technology centers in the world and remains a high-profile example of the progressive application of government-level technology policy for economic development. The [Centennial Campus](#) ^[17] (Raleigh) and the [Piedmont Triad Research Park](#) ^[18] (Winston-Salem)

are other examples of successful high-tech facilities in North Carolina.

Hodges's successors, such as Governors Robert W. Scott ^[19], James B. Hunt ^[20], and James G. Martin ^[21], continued to promote the interdependence of business and state government through computer technology. In the private sector, the IT industry underwent massive growth beginning in the late 1990s with the proliferation of "dot-com" companies, only to suffer from the collapse of many of these businesses a few years later. The declining price of hardware products, a result of the trend toward economic globalization, has led to manufacturing declines in the state and the "outsourcing" of skilled jobs abroad. Some North Carolina firms downsized their operations in an effort to remain successful.

International Business Machines ^[22] (IBM), a giant in the IT industry since the 1950s, moved operations to North Carolina in 1965 as one of the first RTP tenants, becoming one of the state's most important employers. The company manufactured and supplied software for its own computer systems beginning in the 1970s and continued to adjust manufacturing strategies, including deciding to outsource and downsize its workforce by nearly 30 percent in the early 2000s and to stop producing its own computer hardware. Nevertheless, North Carolina remains home to IBM's Global Services Division ^[23], which comprises the world's largest number of IBM employees, most of them highly skilled.

Many other major IT companies maintain a presence in North Carolina. RF Micro Devices ^[24] in Greensboro became one of the world's largest producers of semiconductor analog chips used in wireless communications (including cell phones) and other applications. The company grew remarkably in little more than a decade; by 2004 it employed 1,800 people, earned \$650 million in annual sales, and provided its wares to firms such as Nokia, Samsung, Motorola, and Qualcomm. In the same period Red Hat ^[25], a leader in software production and computer consulting services, maintained its headquarters in North Carolina, as did another software giant, SAS ^[26]. The state also boasted the second-largest number of Microsoft and Cisco employees, large operations of telecommunications companies Nortel, Solectron, and Flextronics, and important semiconductor manufacturers Cree, Nitronex, Ziptronix, and the Silicon Wireless Corporation.

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