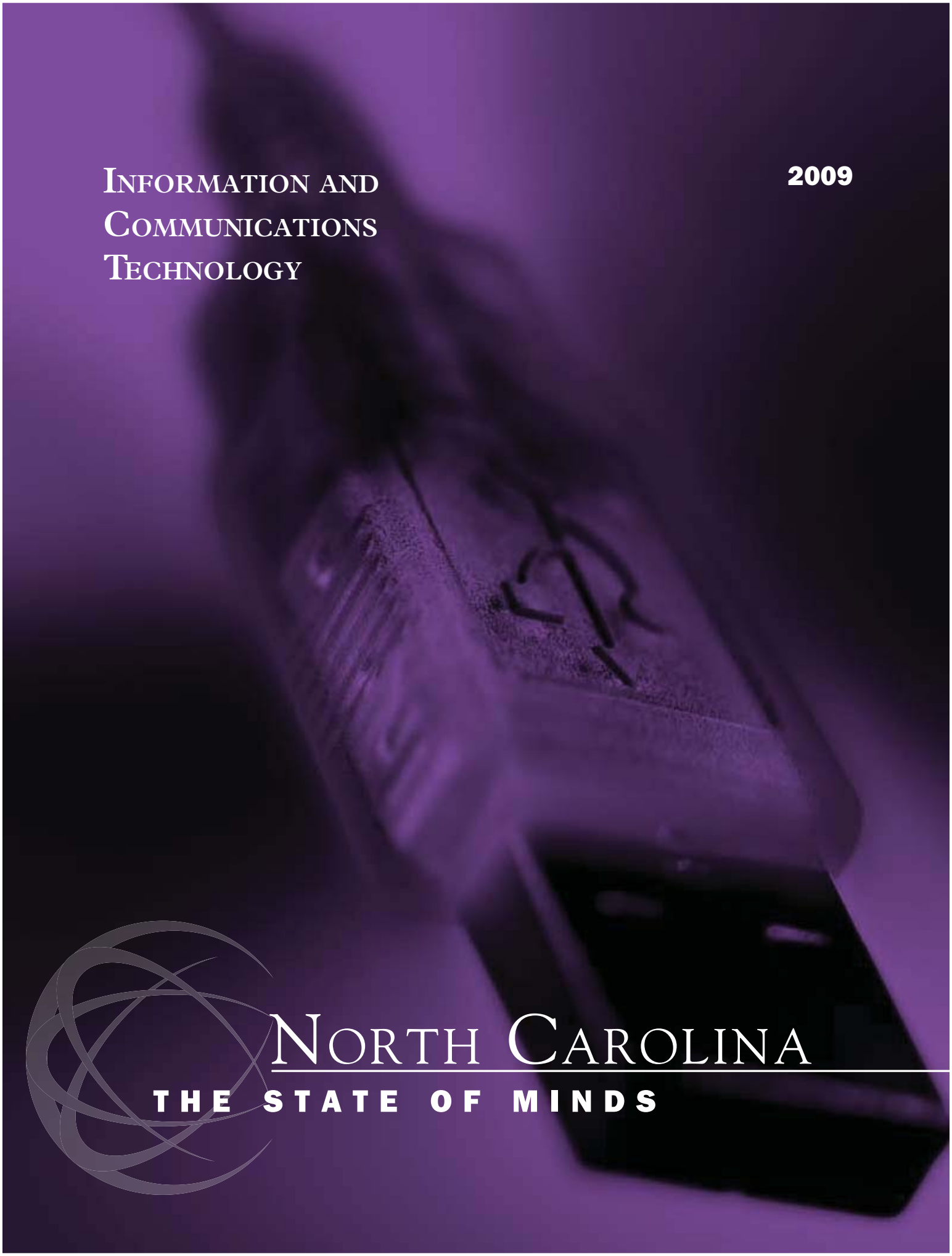

Information and Communications Technology

2009

North Carolina

THE STATE OF MINDS




Our Value Proposition

The State of North Carolina is uniquely positioned to help information and communications technology companies grow and prosper. Our highly skilled workforce is fed by world-class research universities who work in partnership with leading-edge technology companies. The state has also invested in an advanced broadband telecommunications network and other necessary infrastructure required to help companies achieve their goals.

We Are an Established, Innovative and Growing Center for Information Technology

- Over 100,000 workers are employed in over 3,000 firms
- North Carolina deployed the first statewide digital ATM broadband network – known as the NC Information Highway
- Raleigh and Charlotte were named two of the top twenty "Most Wired Cities" by *Forbes* Magazine in 2008

We Have the Resources to Provide an Environment That Supports Future Growth

- **Council for Entrepreneurial Development (CED)** – founded in 1984 to stimulate the creation and growth of high impact companies – today, it is the largest entrepreneurial support organization in the US, with more than 5,500 active members
- **North Carolina Research and Education Network (NCREN)** – developed in 1985, as a reliable, robust fiber-optic network providing high speed network services to the University of North Carolina 16-campus system, Duke University, Wake Forest University, UNC-TV and other private universities, colleges, and non-profit institutions in the state
- **North Carolina Technology Association (NCTA)** – the primary voice of the information technology industry in the state, dedicated to growing and strengthening the IT industry through increasing public awareness and influencing key public policy issues – the association provides its members the opportunity to network with other industry leaders, share information on critical technologies, and promote their companies

We Offer a Highly Skilled and Motivated Workforce

- According to the Employment Security Commission of NC, more than 7,500 individuals are available to fill IT occupations such as:
  - Computer Programmers
  - Computer Software Engineers
  - Computer Support Specialists
  - Database Administrators
  - Network and Computer Systems Administrators
  - Network and Computer Systems Analysts
- Over 900 bachelor's degrees and over 350 advanced degrees in computer science are awarded each year by colleges and universities in North Carolina

We Have Comprhensive Education and Training Programs

- Fifteen of the sixteen UNC System campuses plus several private colleges and universities offer computer science curricula for bachelor's degrees, master's degrees and PhD's as well as professional certificates and have close to 2,000 upper classmen enrolled in these programs
- Computer Science programs in the state offer instruction in essential areas including algorithms, artificial intelligence, bioinformatics, computer graphics, hardware systems, networks, operating systems and architecture, parallel and distributed computing, robotics, security, software development and engineering, theory, testing, and web and internet computing – along with emphasis on written and oral communication skills, critical thinking, marketing concepts, independence and collaboration
- North Carolina Community Colleges offers curricula to develop a skilled IT workforce including:
  - Computer Engineering
  - Computer Information Technology
  - Computer Programming
  - Database Management
  - Information Systems Security
  - Networking Technology
  - Simulation and Game Development
- **Information Technology Institute** – provides specialized hands-on training for entry-level information technology positions such as data technicians and technical assistants – developed in partnership with Google, AMP Technologies and other local industries

We Have the Research Parks to Provide Strategic Advantage

Research Triangle Park – the largest research park in the US – anchored by three major research universities (Duke University, NC State University and the University of North Carolina at Chapel Hill) – home to more than 100 research and development organizations, employing nearly 40,000 people – Cisco Systems, EMC Corporation, IBM, Nortel Networks and SonyEricsson

Centennial Campus – a 1,334-acre site adjacent to NC State University's main campus – home to well over 100 large and small companies, government agencies and university units in industries ranging from nanosciences to ag-bio to advanced materials – Agilent Technologies Ericsson, GlaxoSmithKline Data Exploration, Permitec and Red Hat

Charlotte Research Institute –located on the UNC Charlotte campus and focuses on eBusiness technology, precision metrology, optoelectronics and optical communications – has partnerships with Boeing Aerospace, GE Research Lab, Massachusetts Institute of Technology and NASA Jet Propulsion Lab

Piedmont Triad Research Park – a master-planned innovation community developed to support life science and IT research and development located in downtown Winston-Salem – Currently, the PTRP community encompasses six buildings providing over 554,000 sq. ft. of wet lab, office, meeting and residential space and is home to 42 technology tenants who collectively employ over 850 university and corporate personnel

MCNC Grid Computing & Networking Services is a non-profit organization delivering next-generation information technology by continuously evaluating new hardware and software in test beds and deploying leading-edge computing and networking services all supporting and advancing the competitiveness of the research and education community throughout North Carolina.

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We are Home to a Strong information and Communications Technology Industry

- **AVL Technologies** is recognized as the leading producer of SNG antenna systems in the US and manufactures High-Performance Satellite Antenna Positioner Systems in Asheville
- **Celestica,** a leading Electronics Manufacturing Services (EMS) provider focused on delivering complete end-to-end manufacturing capabilities and highly complex solutions to technology companies, has a manufacturing facility in Durham
- **Cisco** has its second largest presence in the world in Research Triangle Park where engineering, customer support and sales functions are conducted
- **CommScope** is a world leader in network infrastructure solutions with its headquarters in Hickory and facilities located in Claremont, Newton and Statesville
- **Corning Incorporated**, the world leader in specialty glass and ceramics, creates and makes components that enable high-technology systems for consumer electronics, mobile emissions control, telecommunications and life sciences in their facilities in Concord, Durham, Hickory, Midland, Wilmington and Winston-Salem
- **Cree**, a market-leading innovator and manufacturer of semiconductors that enhance the value of LED solid-state lighting, power and communications products, is headquartered in Research Triangle Park
- **Credit Suisse** operates a Center of Excellence in Research Triangle Park that provides vital business continuity, IT and operations services to the firm and its clients
- **Dell** operates its largest and most productive computer manufacturing facility in the world in Winston-Salem
- **Fidelity Investments** operates an operation center in Research Triangle Park where 60% of the workforce is employed in technology positions
- **Flextronics**, a leading Electronics Manufacturing Services (EMS) provider focused on delivering complete design, engineering and manufacturing services for many industries, has locations in Asheville, Charlotte, Creedmoor and Durham
- **Google** operates a “server farm” that stores and makes available information from around the world in Lenoir
- **IBM** has its largest presence in the world, including the headquarters for the Global Services Division, in Research Triangle Park
- **Lenovo**, a world leader in the PC market, is headquartered in Morrisville
- **Microsoft** has its second largest US presence in Charlotte where the company operates and applies technological support, sales and consulting functions to customers in the business intelligence, financial services and healthcare industries
- **NetApp**, a world leader in unified storage solutions, provides software development and hardware testing for customers, as well as the company’s only global customer support center, in Research Triangle Park
- **Optimal Technologies International**, a leading developer of technologies to optimize power grid systems and creator of complete building automation platforms, located its main North American location in Raleigh
- **Red Hat**, the world’s largest open source software company, is headquartered on the Centennial Campus at NC State University in Raleigh
- **RFMD**, the largest producer of gallium arsenide semiconductors in the world, is headquartered in Greensboro and has a design center in Charlotte
- **SAS**, the world’s largest privately owned software company, is headquartered in Cary
- **Tyco International**, a highly diversified global company that provides thousands of products and services, including electronic security and alarm monitoring, galvanized steel tubes and armored wire and cable, to residential and commercial customers, has facilities in Greensboro, Winston-Salem, and Raleigh

North Carolina Department of Commerce

4310 Mail Service Center
Raleigh, NC 27699-4310,
USA
1-919-733-4977
www.nccommerce.com

State of North Carolina Canada Office

13A Princess St
Mississauga, ON L5M 1Z8,
Canada
905-826-6000

State of North Carolina European Office

Untermainanlage 7
60329 Frankfurt am Main,
Germany
49-69-271-3980

State of North Carolina Japan Office

Toranomon Suzuki Bldg. 5F
20-4, Toranomon 3-Chome
Minato-Ku, Tokyo 105-0001,
Japan
81-3-3435-9301

Focus on North Carolina Initiatives

Nanotechnology

North Carolina's universities are home to more than 33 research, development and education organizations and programs focused on using nanotechnology to produce new knowledge and products that will help build North Carolina's 21st Century economy, enhance the quality of life, protect the environment, and promote national security. Duke University, NC A&T State University, NC State University, UNC Charlotte, UNC Chapel Hill, UNC Greensboro, Shaw University and Wake Forest University all have programs and research in nanotechnology. A partnership between NC A&T State University and UNC-Greensboro has created the Joint School of Nanoscience and Nanoengineering (JSNN). The JSNN is the first of its kind in the nation where students can earn a PhD in nanotechnology. In addition, Forsyth Technical Community College offers an associate's degree in nanotechnology, the only program of its kind in the southeast.

North Carolina is also home to leading minds in nanotechnology. Dr. Joe DeSimone, a professor of Chemistry and Professor of Chemical Engineering at UNC Chapel Hill and NC State University, uses nanotechnology to engineer drug delivery systems to treat cancer. Dr. DeSimone has been awarded several prestigious honors including the 2008 *Lemelson-MIT Prize for Invention and Innovation*. As a result of his research, Dr. DeSimone has spun off at least 12 companies.

North Carolina has at least 65 companies working with nanotechnology. They include:

- **nCoat Inc.** answers the growing need for next generation high performance coatings, delivering highly innovative nano-formulated as well as traditional coatings that lead the industry in bond strength, heat management, corrosion resistance, abrasion protection, friction reduction and appearance enhancement – technology is used in NASCAR engines
- **Liquidia Technologies Inc.** proprietary PRINT™ (Pattern Replication in Non-wetting Templates) product platform is unique in its ability to replicate and produce nanoscale features with absolute control over feature size, shape, and composition – combines precision nanoreplication technology adopted from the microelectronics industry with a scalable manufacturing process to produce high-value applications in Engineered Drug Therapies and Optical Films
- **Coventor, Inc.** is a leading worldwide provider of 3D analysis and design automation software for the development of micro- and nano-scale devices and systems
- **Nextreme, Inc.** designs and manufactures micro-scale thermal and power management products for the semiconductor, photonics, consumer, automotive and defense/aerospace industries – has embedded cooling and power generation capabilities into the widely accepted copper pillar bumping process used in high-volume electronic packaging

Photonics

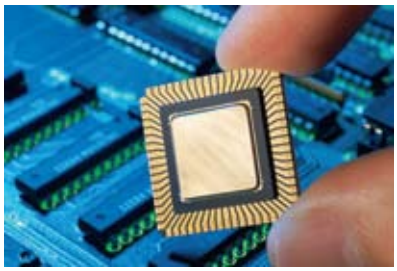
North Carolina has emerged as a major center for global telecommunications and photonics with more than 300 telecommunications and optical networking companies. Important photonics companies in the state include:

- **Caspian Networks** developed Apeiro, a new enabling architecture for data networking
- **Tessera** is a worldwide leader in the development, design, manufacture and marketing of Photonics Chips™ wafer-based passive and active integrated optical sub-assemblies.

A number of major research initiatives have been created in North Carolina to further enhance the photonics and optical industry:

- **Charlotte Institute for Technology Innovation** is housed at UNC Charlotte and focuses on optoelectronics and optical communications
- **Fitzpatrick Center for Photonics and Communication Systems** is housed at the Pratt school of Engineering at Duke University and provides stare-of-the-art test bed labs for examining every aspect of photonics from experimental algorithms to novel materials
- **Center for Advanced Computing and Communications at NC State University** works to carry out basic and applied research on fundamental problems with both industrial and academic relevance

Semiconductors and Chip Technology



North Carolina is a center for the research and development of semiconductors and chip technology. In addition to Cree and RFMD many internationally known companies are located in the state including:

- **Engineering Research Center for Advanced Materials Processing (AEMP)** develops the techniques needed to boost America's competitive position in semiconductor manufacturing
- **Infineon Technologies** is the number one automotive semiconductor supplier in Europe and the second largest semiconductor supplier worldwide and has a facility in Morrisville
- **Kyma** is a preeminent developer and supplier of unique nitride materials for the semiconductor industry and is aggressively exploring the development of GaN substrates
- **Nitronex** creates RF power transistors utilizing the world's only commercial-grade gallium nitride (GaN RF) power semiconductor process – licensed initial technology from NC State University
- **Qualcomm** develops semiconductor chips used in cellular phones and other mobile devices – its Cary facility focuses on designing chips that process more information faster using less power
- **Silicon Wireless Corporation** is a fabless semiconductor company focused on providing high performance infrastructure products for wireless and power management applications
- **Ziptronix** developed a revolutionary semiconductor bonding technology that advances the fabrication of MEMS, high speed logic, RF devices and will enable the construction of true 3-D semiconductor devices – spun out of Research Triangle Institute

Serious Games

North Carolina is on the cutting edge of computer and video games, applied to non-entertainment purposes. The state is home to many of the industry's pioneers in addition to some of the biggest names in game development including:

- **Destineer**, which makes several Nintendo DS and Wii games, has a facility in Research Triangle Park
- **Epic Games** developed the Unreal Engine that provides the platform and tools to develop cutting-edge 3-D projects and has an office in Cary
- **Electronic Arts** is the world's largest independent game publisher and has a sports racing development studio in Morrisville
- **Emergent Game Technologies,** headquartered in Chapel Hill, developed the Gamebryo Element, the game runtime engine of choice for hundreds of games in multiple genres, including some of the industry's most popular and anticipated AAA titles

- **Insomniac Games** has a facility in Research Triangle Park to handle development of new games and existing brands
- **Red Storm Entertainment** was founded by author Tom Clancy and has a goal of producing top-quality, innovative games for PC and the next-gen systems while continuing the collaboration with Ubisoft to bring franchise titles to all viable platforms operates an office on Centennial Campus at NC State University
- **Virtual Heroes Inc.** creates collaborative interactive learning solutions for federal systems, healthcare and corporate training markets in Research Triangle Park