THE ARKANSAS INFORMATION ECONOMY
OBSTACLES AND OPPORTUNITY

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Economic Overview

- Information is classified by the U.S. government as a private service-providing sector.

- The sector, despite adjusting for recession, has barely grown in a two-decade period. There were 17,200 Information sector employees in Arkansas in January 1990 when the employment time series began. The Information sector employed 17,800 in December 2007 at the start of the most recent recession. There were 15,400 Information sector employees in March 2010.

- Wage and salary disbursements by the Arkansas Information sector totaled $1,044,938,000 in 2009. Arkansas ranked 33rd in the U.S. but trailed nine of 12 states in the Southeast region.

- Two public companies with headquarters in Arkansas are identified with the Information sector.

Obstacle

- States in the Southeast region provide more knowledge than Arkansas when measuring and reporting to markets on their Information sectors.

Opportunity

- Provide more information to potential employers about the Telecommunications component of Arkansas' Information sector.

Information as a Private Industry Sector

Introduction: Information is classified as a private service-providing sector. According to NAICS (1), the Information sector "comprises establishments engaged in the following processes: (a) producing and distributing information and cultural products, (b) providing the means to transmit or distribute these products as well as data or communications, and (c) processing data."

The main components of the Information sector are "the publishing industries, including software publishing, and both traditional publishing and publishing exclusively on the Internet; the motion picture and sound recording industries; the broadcasting industries, including traditional broadcasting and those broadcasting exclusively over the Internet; the telecommunications industries; the industries known as Internet service providers and Web search portals; data processing industries; and the information services industries." (2)

Employment: The Arkansas economy's structure has evolved considerably since 1939 when economists first started compiling employment statistics. Employment in goods-producing sectors, notably Manufacturing has declined as a percentage of total Arkansas nonfarm payroll employment while private service-providing sectors have expanded and represent 61 percent of all jobs. Goods-producing sectors like Mining, Construction and Manufacturing employed a higher percentage of Arkansas workers in 1939. Today, service-providing sectors play a greater role, and include:

- Trade, Transportation and Utilities
- Information
- Financial Activities
- Professional and Business Services
- Education and Health Services
- Leisure and Hospitality
- Other Services

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(1) North American Industry Classification System

(2) U.S. Bureau of Economic Analysis

Information has been classified as a private service-providing sector since the 1990s. (3) There were 17,200 Information sector employees in Arkansas, including 6,300 employed in Publishing Industries and 7,000 in Telecommunications, in January 1990 when the time series began. (4) There were 15,400 Information sector employees in Arkansas in March 2010. The sector, despite adjusting for recession (5), has barely grown in a two-decade period.

Income: Wage and salary disbursements by the Arkansas Information sector totaled $1,044,938,000 in 2009. (6) Arkansas ranked 33rd in the U.S., ahead of New Hampshire, Nebraska, Nevada, New Mexico, Rhode Island, Mississippi, Hawaii, Maine, West Virginia, Idaho, North Dakota, Alaska, Delaware, Montana, South Dakota, Vermont and Wyoming.

Nine states in the Southeast region ranked higher than Arkansas. They are Florida, which ranks 5th in the U.S.; Georgia (6th); Virginia (10th); North Carolina (14th); Tennessee (19th); South Carolina (27th); Louisiana (30th); Alabama (31st); and Kentucky (32nd).

Public Companies: Two of 17 public companies with Arkansas headquarters are identified with Information. Acxiom provides interactive marketing services for a client base that includes information services, media, technology, and telecommunications industries. Windstream is a telecom company that provides phone, high-speed Internet and digital television services. (7) Information firms with a presence in Arkansas also include AT & T, Hewlett-Packard and Verizon.

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(3) Employment data for the Information sector dates to 1990 under the 2002 NAICS, which replaced standards that existed under the 1987 Standard Industrial Classification (SIC).

(4) “Current Employment Statistics, Nonfarm Payroll Employment,” Arkansas Department of Workforce Services.

(5) Non-government employment contracts in recessions. The Information sector employed 17,800 (December 2007) at the start of the most recent recession.

(6) U.S. Bureau of Economic Analysis, “State Annual Personal Income, Table SA07N.”

(7) Annual reports (10-K), 2009

Obstacle: Marketing the Arkansas Information Economy

Economic agents operating in market-based systems rely on information to make decisions. A Nobel laureate who briefly taught at the Univ. of Arkansas-Fayetteville examined this issue once in an important paper. (8)

States in the Southeast region provide more knowledge than Arkansas when measuring and reporting to markets on their Information sectors. Arkansas does not present detailed knowledge about employment in Information sector *components*. (9)

Information (Arkansas)	15,400

Mississippi, by contrast, markets the Telecommunications component of its Information sector.

Information (Mississippi)	12,500
Telecommunications	6,500

Kentucky, Louisiana and Tennessee also present this data to employers. Georgia markets its Information sector by reporting more detailed information. "Let us help you," Georgia's site tells potential employers.

Information (Georgia)	101,500
Telecommunications	50,600
Wired Telecommunications Carriers	28,800
Wireless Telecommunications Carriers	10,900
ISPs, Search Portals and DP	6,300

Opportunity: Provide more information to potential employers about the Telecommunications component of Arkansas' Information sector. (10)

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(8) Hayek, Friedrich A. (1945). "The Uses of Knowledge in Society." *American Economic Review* 35(4):519-30. Hayek shared the 1974 Nobel in Economics.

(9) Policy Foundation research memo (2003), "Measuring High-Technology Employment in Arkansas."

(10) Business reporting establishments must be increased to achieve this goal.

Education Overview

- Distance learning has been part of K-12 virtual education efforts in Arkansas since the mid-1990s.

- Virtual schools have been utilized in Arkansas since 2002.

- The Arkansas Virtual Academy, a charter, opened in 2007-2008, and educates K-8 students.

- The Arkansas Virtual High School, a pilot project, enrolls students in grades 9-12.

Obstacle

- Inadequate access to virtual education for students. Enrollment at the K-8 level is capped statewide at 500 students.

- Children with inadequate access to virtual education include those with medical conditions.

Opportunity

- Repeal the statewide cap as part of an effort to market the Telecommunications component of Arkansas' Information sector to world markets.

K-12 Virtual Education in Arkansas

Distance Learning: Distance learning utilizes technology developed by the Information private sector to educate students. It has been part of K-12 virtual education efforts in Arkansas since the mid-1990s.

PA 1240 of 1995 established a "distance learning demonstration project in Arkansas high schools" in the 1995-96 school year. The state Department of Education was given authority to "oversee and coordinate the implementation of distance learning in elementary and secondary public schools in the state." Schools were given the authority to "import courses from outside the state," subject to department approval. The courses offered through distance learning included:

- College preparatory courses, including, but not limited to, calculus, physics, Arkansas history, foreign languages, and computer science.

- Technological courses, including, but not limited to, advanced math and science courses, advanced computer skill courses, and advanced courses in the arts.

PA 1083 of 1999 set the following goal: "Distance learning shall be available to one hundred (100) elementary and secondary public schools in the state by August 1, 2000. Distance learning shall be available to all school districts in the state by August 1, 2004."

PA 1192 of 2003 repealed the distance learning demonstration project, creating an Arkansas distance learning development project in its place. The project sought to demonstrate "the efficiency of using distance learning to enhance elementary and secondary education and prepare students for greater success in a postsecondary educational environment." The measure defined distance learning as follows:

"(A)n interactive telecommunications system that utilizes information technology, audio, video, and similar technological elements, is compatible with other distance learning networks, and is used for the purpose of enhancing instructional opportunities in Arkansas public schools."

One focus of the Act was to "help alleviate the increasing shortage of qualified teachers." Another was to "develop and make available online professional development and instructional resources for all teachers and administrators.

PA 1469 of 2009 provides that a public school district or open-enrollment charter school may offer and teach distance learning courses to a student enrolled in a private school or a home school. The student must reside in the district where the public or charter school is located, and agree to physically attend the school for the purposes of taking:

- A distance learning course taught or offered through the public or charter school; and state tests and assessments required for the particular course or courses taken by the student.

Virtual Schools: PA 890 of 1999 authorized the creation of open enrollment charter schools and the conversion of public schools to charters. The act gave the state Board of Education authority to approve or disapprove charter applications. It defined "open-enrollment charter school" as a public school that is operating under the terms of a charter granted by the state board on the application of an eligible entity and may draw its students from across public school district boundaries." (11)

Legislative intent included "encouraging the use of different and innovative teaching methods." PA 2005 of 2005 expanded the act, which was broadened again in 2007.

The Arkansas Virtual School, with funding from the U.S. Department of Education, operated between 2002-2003 and 2006-2007. (12)

The Arkansas Virtual Academy, a charter, opened in 2007-2008, and educates 500 students at the K-8 level. The mission statement states the school "will support, guide, and assist families and colleagues in a positive way through teamwork to promote academic growth that leads to high achievement for the entire Arkansas Virtual Academy community. We will do this by keeping sight of our vision and embracing change through teamwork and good communication to assure family commitment to accomplish our purpose." (13)

The Arkansas Virtual High School is a pilot project funded by the state Department of Education, with students enrolled in grades 9-12.

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(11) Charter schools are public schools. Policy Foundation research memo (2003), "President Bill Clinton and Charter Schools."

(12) The Policy Foundation started the application, which was completed by the state Department of Education.

(13) Arkansas Virtual Academy (http://www.k12.com/arva/)

(14) Arkansas Virtual High School (http://arkansashigh.k12.ar.us/)

Obstacle: Inadequate Access to Virtual Education

A skilled work force is a factor of economic development. The Information sector relies on skilled workers who understand technology, and are able to solve problems using critical thinking skills. Employees with STEM jobs are one example. A U.S. Bureau of Labor Statistics report explains:

"Technical occupations are often defined as those related to science, technology, engineering, and mathematics (STEM). Workers in STEM occupations use science and math to solve problems. Educational requirements for STEM occupations range from a high school diploma and on-the-job training to a Ph.D. But all require the ability to think logically." (15)

The report notes the technology component "could include any occupation that requires technical skill, but it usually refers to information technology or computer-related occupations. Workers in these occupations use logic, mathematics, and computer science to make computers function. Some technology workers create new software, design computer systems, and develop databases. Others focus on helping people use computers and on keeping computers running well."

Adequate access to virtual education is crucial to developing skills required by an Information sector employer. Yet Arkansas appropriation policy caps Virtual Academy enrollment statewide at 500 students. The 932 students on the charter's waiting list, in essence, have inadequate access to virtual education. (16) This group includes students with medical conditions.

- ***Opportunity:*** Repeal the statewide cap as part of an effort to market the Telecommunications component of Arkansas' Information sector to world markets.

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(15) Terrell, Nicholas. "STEM Occupations," *Occupational Outlook Quarterly*, Spring 2007: 26-33. For other articles on employment in the Information, and Business and Professional Services sectors see the Notes to: Hecker, Daniel. "High-tech employment: A NAICS-based update." *Monthly Labor Review* (July 2005): 57-72

(16) Eleven percent (11%) of waiting list students live in the Delta, a 16-county region. Eighteen percent (18%) reside in Pulaski County. These numbers are similar to current enrollment, which includes 17% from Pulaski County, and 12% from the Delta. The Delta counties are Arkansas, Ashley, Bradley, Chicot, Cleveland, Crittenden, Desha, Drew, Jefferson, Lee, Lincoln, Lonoke, Monroe, Phillips, Prairie and St. Francis.

About The Author

Greg Kaza is an economist. He has served as executive director of the Arkansas Policy Foundation since January 2001. His research has been published in peer-reviewed academic journals in North America, Europe and Asia.