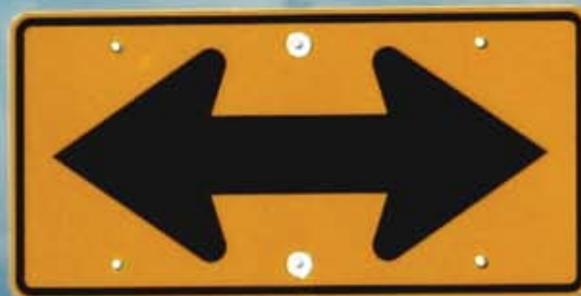


We're at a
turning point.

Where we go from here will determine the economic future of Arkansas.

Contents

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- 24 The end of “business as usual”
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policy to actions
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STATUS QUO

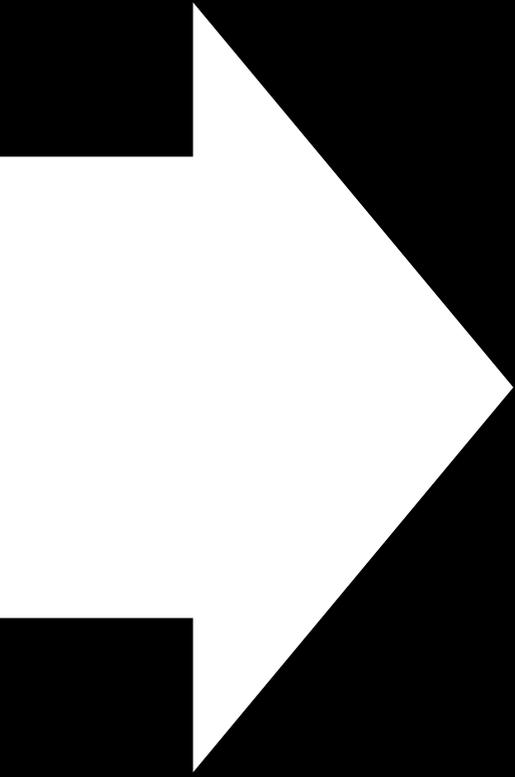
(-) **Arkansas at a crossroad** In 2005, in Arkansas; There were 2,775,708 people, ranking us 32nd in population in the U.S. Total personal income was \$74.06 billion, ranking us 33rd in total personal income in the U.S. Total personal income per capita was \$26,681, ranking us 47th in total personal income per capita in the U.S. Clearly, our personal income per capita ranking is not desirable. In order to be competitive economically, we must change.

KNOWLEDGE

STATISTICS

QUO

(+) Where will we go from here? The vision of Accelerate Arkansas is an economy accelerated by knowledge-based institutions, partnerships, industries and knowledge-workers. Its mission is to foster economic growth in Arkansas by using the essential building blocks of the knowledge-based economy, and to create an environment supporting entrepreneurship and continuous innovation.



Building a Knowledge-based Economy in Arkansas: Strategic Recommendations by Accelerate Arkansas

**A Report of The
Accelerate Arkansas
Strategic Planning
Committee:**

Mark Saviers, *Chairman*

Jerry Adams

John Ahlen, Ph.D.

James Hendren, Ph.D.

Uvalde Lindsey

Emon Mahony

Tim McFarland

Ted Moskal

Henry Torres

Sam Walls



Preface

A Message from Our Chairman

We want you to read and study our report. Then, we want you to decide how you fit into moving the state forward. It is up to US, not someone else. We all have to do our part in making our state competitive and successful for us and our successors.

Accelerate Arkansas is a statewide group of leaders who have volunteered their time and resources to focus on how to move this state forward in the 21st Century economy. Accelerate Arkansas grew from two parallel initiatives in the early 2000s: the Arkansas Department of Economic Development's Taskforce for the Creation of Knowledge-Based Jobs and the leadership of the Arkansas Venture Forum. This volunteer organization has grown to over 60 persons across the state.

This document is a roadmap for the future economic success of Arkansas developed by Accelerate Arkansas. It provides a direction to move the state forward and close the gap in per capita income between Arkansas and the remainder of the U.S.

The plan is a result of more than 5,500 hours and 2 years of hard work from more than 200 Arkansans, almost all of whom are volunteers. Contributions to the plan came from community leaders from all regions of the state and experts in the fields related to each of the core strategies developed in the course of creating this plan. To our knowledge, this kind of volunteer effort by community leaders throughout the state – focused on creating a long-term economic roadmap – has never been done before.

This project would not have happened without the thoughtful leadership and financial support from the Winthrop Rockefeller Foundation, with special thanks to both Sybil Hampton and Bill Rahn from the Winthrop Rockefeller Foundation and Leslie Lane from Arkansas Capital Corporation who coordinated the grant. Additional thanks go to the UALR Institute for Economic Advancement, and in particular to Gregory L. Hamilton, Ph.D. and Mark A. Thompson, Ph.D. for providing economic analysis; and Teresa A. McLendon for assistance in writing and for editing this report.

We see this report as a gift to the State of Arkansas. Its value will only be achieved if it is put to use and applied to our collective future for the benefit of all Arkansans.

Listed on the following pages are the citizens and organizations that helped to make this report a reality. The State of Arkansas owes each of these citizens a debt of gratitude.

A handwritten signature in black ink that reads "Jerry B. Adams". The signature is fluid and cursive.

Jerry Adams, Chairman

Accelerate Arkansas

This is a summary of the full report of Accelerate Arkansas. The full report can be found and downloaded at www.acceleratearkansas.org

A photograph of a dandelion seed head in the foreground, with several seeds floating in the air against a clear blue sky. The seeds are captured in motion, creating a sense of lightness and dispersal. The background is a soft, clear blue, and the overall mood is serene and contemplative.

WHY?

Section 1

How did we get here?

Destiny is no matter of chance. It is a matter of choice. It is not a thing to be waited for, it is a thing to be achieved.

—William Jennings Bryan

About 50 years ago, the industrial development of Arkansas began in earnest with the creation of the Arkansas Industrial Development Commission. The state's main development strategy was to recruit manufacturing plants from other parts of the U.S., and, by the 1970s, from Europe and Japan.

During the next two decades

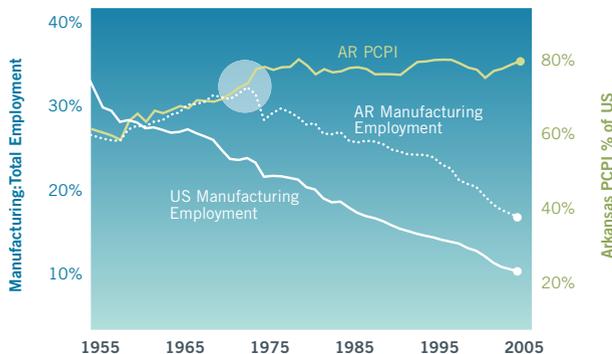
- > manufacturing employment in Arkansas as a percent of total employment increased from 27% in 1955 to 33% in 1973.
- > the per capita personal income (PCPI) in Arkansas increased from 60% of the national average in 1955 to 78% in 1978.

Over the following 30 years, between the mid-1970s and today,

- > manufacturing employment as a percent of total employment in Arkansas has shadowed its U.S. counterpart (which dropped from 34% in 1955 to 23% in 1973), declining from its high of 33% to 17%, and
- > per capita income in Arkansas (as a percent of the U.S.) has stubbornly refused to rise above 78%.

While we have continued to focus on an industrial, manufacturing-based economy in Arkansas, primarily built by recruiting, the U.S.—and the developed world—began to develop a new, knowledge-based economy, built on innovation and entrepreneurship.

Manufacturing Employment and PCPI Trends



What in the world changed?

Seven global social and economic trends have contributed to the transition from an industrial-based economy to a knowledge-based economy.

Globalization: Technological advances in telecommunications, data processing, and transportation have changed the world so that companies that used to compete regionally or nationally now may compete globally.

Increasing information technology: Improved information technology is opening up new industries and occupations, and doing away with others.

Workforce development issues: Both the skills of individual workers and the ways in which workers interact with one another have changed in recent years.

Acceptability of public-private partnerships: In today's business development environment, goals are often impossible to meet without partnerships involving many levels of government, nonprofit organizations, and business entities.

Lifestyle preferences: Today's more educated workforce demands both the goods, services, and personal interactions traditionally found in large, cosmopolitan communities, as well as the safety, security, and more natural environment traditionally found in more rural areas.

The urban-rural divide: Many rural areas are ill-equipped to provide the infrastructure needed by today's high growth firms: scarce broadband access, and highly educated workers. For many rural areas to survive, change is a necessity.

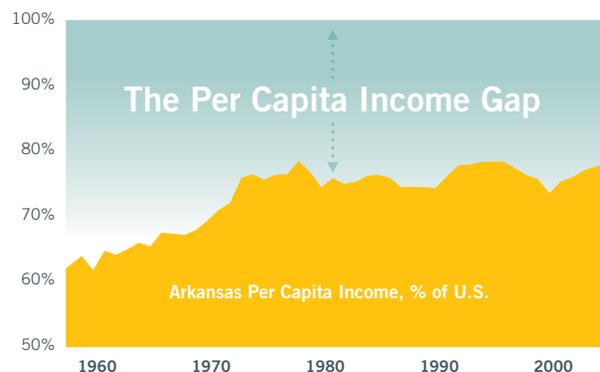
The accelerating rate of change: Increased interpersonal communication allows exchange of ideas nearly instantaneously, and the globally competitive environment of many industries makes quick adaptation the rule, rather than the exception.

The end of business as usual

These changes and others brought about what some call the end of the industrial era. To continue to compete in this new knowledge-based economy in Arkansas, we must adopt a new paradigm, based on the realities of the economy that surrounds us. We must understand the competitive environment to be able to respond to it. *We must change our goals—and change our direction.*

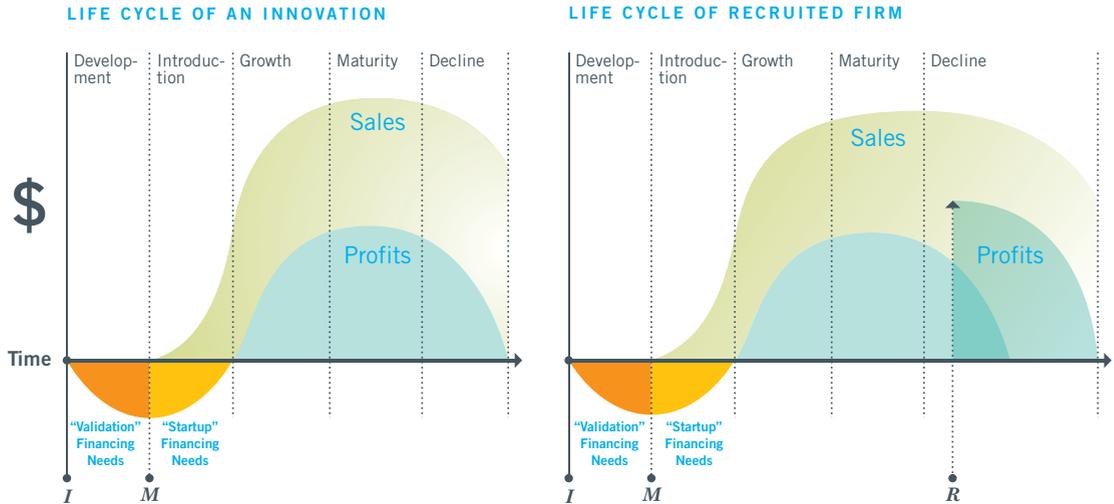
The overarching goal of Accelerate Arkansas is to position Arkansas where it can increase its per capita income to the U.S. average by 2020 and thereby increase state tax revenues by over \$2 billion on an annual basis.

The Goal: Close the Gap by 2020



Life Cycles of an Innovation and of a Recruited Firm

In the figures below, *I* is the point in time at which an innovation is created. At point *M* the innovation enters the marketplace. At point *R* the firm is recruited to Arkansas, temporarily extending its life cycle through lower costs.



Competition and technology drive business development

Every business has a life cycle. For a business with a brand new product or service, it begins at the time the product is invented (*I*). In the firm's early stages, carried on by entrepreneurs, one of the greatest hurdles for it to overcome is acquiring enough capital to carry it through the periods of product development and introduction into the market. As a business ages and the product becomes common in the marketplace, it faces competitors with similar products and services. If it is to extend its life, it only has a few choices:

- > lower selling prices by lowering the cost of production and business expenses;
- > improve productivity to lower the cost of production per unit; and/or
- > improve the product to make it more attractive to buyers than its rivals.

Arkansas' attempts to industrialize its economy coincided with rapidly rising costs of production in the industrialized Northeast and Midwest U.S., and increasing competition from Europe and Asia. By moving south to Arkansas, manufacturers in their maturity stage took advantage of our lower land and labor costs, allowing them to temporarily extend their life cycle by lowering their production costs. Many of these same firms, mostly in manufacturing industries, have moved offshore to continue their cost-cutting strategy. This highlights the weakness of Arkansas' primary economic development strategy of the 1950s forward:

The use of recruiting mature industries as the main economic development strategy only works as long as a company can produce for a lower cost in Arkansas than it can elsewhere. This strategy must be re-evaluated.

Movement of Manufacturing in the United States

1. 1950s to early 1960s:

Manufacturing begins moving South from the Northeast.

2. 1960s to 1990:

Continuation and acceleration of the movement from the Northeast and North Central United States.

3. 1990s to Present:

Movement from Arkansas to Mexico and Abroad.



A prelude to the beginning of the knowledge-based economy in the U.S., manufacturing firms from the industrialized Northeast and Midwest moved to the South to lower their production costs. Eventually, cost cutting strategies led many manufacturers to produce offshore.

There is another way to extend the business life cycle besides cutting costs.

Businesses can apply new technologies to their products—to improve their marketability—and their production processes—to improve their productivity.

The rapid creation of new technologies, via a continuing stream of research and development, has driven many of the economic changes seen in the U.S. over the past two decades. The new technologies have given rise to new products, new services, and new industries: the knowledge economy. And as technology has become more complex and rapidly changing, it has created demand for a specific kind of workforce: the knowledge workforce.

In a Knowledge-based economy, emphasis is upon technology

It could be said that the application of technology is the starting point of the business life cycle. Through it, new products are created. Technology is also used to extend the business life cycle, by improving products, reducing production costs, and increasing productivity. Today's social and economic trends have driven the changes in technology to a rate never before seen, squeezing the business life cycle and forcing firms—and whole economies—to adapt or die.

A knowledge-based economy is one that is driven by a high proportion of knowledge-based and high technology industries.

The per capita income of Arkansans lags behind the U.S. in part because we do not have a strong knowledge-based economy in the state.

In 2004 at the request of Accelerate Arkansas, the Milken Institute undertook a study of Arkansas to identify its status relative to the knowledge-based economy. In its report, Milken defined both high-technology industries and knowledge-based industries. The definitions are as follows:

[High technology] industries [are those] that reinvest a large portion of gross revenues back into R&D . . . along with those that employ an above industry-average number of technology-using occupations such as scientists, engineers, mathematicians and programmers. Each is actively engaged in the utilization of technology and innovation.

Knowledge-based industries are [other (not high-tech)] industries that pay above average annual wages in both Arkansas and the country as a whole, and utilize workers with above average skill sets. The occupational mix of the industry is also taken into consideration in determining which industrial sectors contain a sufficient knowledge component [to be considered knowledge-based].¹

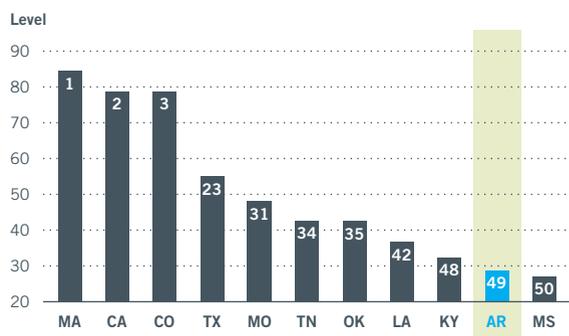
The knowledge base in a region determines the technologies that can be applied and the rate at which new technologies are adopted and created, and in the U.S., those regions that have a greater knowledge base are growing more rapidly, and generating higher incomes, than elsewhere.

Arkansas lacks a strong knowledge base. On the overall 2004 State Technology and Science Index, Arkansas ranked only 49th, and with the exception of Mississippi, all of the states surrounding Arkansas ranked higher.

State Technology & Science Index

Top Three, Arkansas and Peer States, 2004

Source: Milken Institute





STEPS

Section 2

How can we reach a knowledge-based economy?

It is change, continuing change, inevitable change, that is the dominant factor in society today. No sensible decision can be made any longer without taking into account not only the world as it is, but the world as it will be.

—Isaac Asimov

The stepping stones to a knowledge-based economy are:

- > knowledge creation through research and development,
- > intellectual property development,
- > commercialization of new technologies,
- > growth of entrepreneurial knowledge-based firms,
- > growth of a knowledge workforce, and
- > the evolution of clusters of knowledge-based firms (i.e., a critical mass) into a strong, vibrant knowledge-based economy.

The mission of Accelerate Arkansas is to foster economic growth in Arkansas by using the essential stepping stones of the knowledge-based economy, and to create an environment supporting entrepreneurship and continuous innovation.

The stepping stones to a
knowledge-based economy

6. Cluster of knowledge-based firms

5. Knowledge workforce

4. Entrepreneurship

3. Commercialization

2. Intellectual property development

1. Knowledge creation

To build a knowledge-based economy in the state, Accelerate Arkansas has adopted five Core Strategies.

The Core Strategies of Accelerate Arkansas are to:

1. Support job-creating research.
 - > Research and development drive technical developments in engineering, physical and biological sciences, mathematics and computer science, spurring economic growth resulting from new products and new businesses.
 - > Arkansas received only \$1 out of every \$5,000 the federal government spent on research in 2000. Academic research in Arkansas is 48th in the nation. Private sector spending in Arkansas is primarily devoted to food and paper processing, with some electronic component research, and still places the state 8th from the bottom among all the states.
2. Develop risk capital that is available for all stages of the business cycle, especially the funding gap.
 - > In 2002 the average U.S. venture capital share of Gross State Product (GSP) was 0.2 percent, and venture capital accounted for only 0.014 percent of Arkansas' GSP, about one-seventh of the national average.
 - > In 2004, federal Small Business Investment Corporation (SBIC) funding averaged 0.05 percent of Gross State Product in the nation, while in Arkansas, SBIC funds accounted for only 0.0009 percent of Arkansas' GSP.
3. Encourage entrepreneurship and accelerated new enterprise development.
 - > New business development is an important component of a knowledge-based economy, and should be cultivated throughout the early formation stages until the business is stable enough to stand alone.
4. Increase the education level of Arkansans in science, technology, engineering and math.
 - > The competitive pressures of today require a more highly skilled labor force than ever before. According to the Bureau of Labor Statistics 80% of the fastest-growing jobs in the United States require some sort of higher education after high school, and many of these jobs require a strong foundation in math and science.²
 - > Employers of today and tomorrow need a workforce that is flexible and adaptable, with the ability to continue education in different technologies throughout an entire working lifetime.
5. Sustain successful existing industry through advancing technology and competitiveness.
 - > Many firms were founded in the state, have their roots in the state, or have been tied to the state for generations. By helping these firms continue to remain competitive in their own industries, through advancing their own technology usage, we can increase their chances for continued success in Arkansas.

*This is a summary of the full report of Accelerate Arkansas.
The full report can be found and downloaded at www.acceleratearkansas.org*

A white paper airplane is shown in flight, angled upwards and to the right. The background is a solid, light blue color. The word "DIRECTION" is written in large, white, bold, sans-serif capital letters across the middle of the image, partially overlapping the paper airplane.

DIRECTION

Section 3

Charting a new course

The first step to getting the things you want out of life is this: *Decide what you want.*

—Ben Stein

A successful economic development plan for the new, knowledge-based economy must:

- > Be bold and unconventional;
- > Call for investments that are large enough in scale to make a real difference;
- > Suggest actions that are not path dependent, but are innovative, workable, and future oriented;
- > Instill a “best in class” mindset that results in bold decisions followed by investments at scale and aggressive action.

The strategic planning approach undertaken by Accelerate Arkansas was aimed at adopting innovative programs and action plans that define a new approach to economic growth. During the process, more than 200 stakeholders representing every region of Arkansas and 95 stakeholder groups participated in creating the objectives and action items that make up the heart of the plan. The process included:

Reviews of relevant literature. A wide variety of reports and plans from more than a dozen other states, regions, cities and countries was reviewed and evaluated during the process. Best practices for rural economic development from the literature were summarized in *Closing the Gap*, a research report commissioned by Accelerate Arkansas.

Analysis of statistical top performers. *Closing the Gap* also provided an examination of Arkansas metropolitan areas in terms of national metro areas that either have high per capita incomes or have rapidly increased their per capita incomes.

Expert and Stakeholder Ideas. Meetings with content experts, community leaders, and other stakeholder representatives validated the core strategies; added breadth with regional ranking of objectives; and added depth with recommended action steps from content experts.

The Strategic Planning Committee conducted strategic planning forums with regional leaders and decision makers in Pine Bluff, Little Rock/ North Little Rock, Fayetteville/Springdale/Rogers, Hot Springs, Fort Smith, and Jonesboro/Paragould. The participants generated six customized lists of priority objectives within each of the five core strategies.

Forums were also held in various locations throughout Arkansas with content experts and regional leaders who created a list of 703 action items for high-ranking objectives within each of the five core strategies.¹

1 A comprehensive report of the strategic planning process, a list of all the action items, and relevant literature that was reviewed, is available in the full report of Accelerate Arkansas. This can be found and downloaded at <http://www.AccelerateArkansas.com>.



**Accelerate Arkansas Strategic
Plan Development Process**

	Stage No.1 →	Stage No.2 →	Stage No.3 →	Stage No.4 →	Stage No.5
Inputs	>Task force report	>Other state plans >Closing the Gap	>Validated strategic goals >First set objectives & actions	>Prioritized objectives >2nd set objectives & actions >Balanced Scorecard	>3rd set objectives & actions
Participants	>Planning committee	>Planning committee >All AA members >Subject experts	>Planning committee >All AA members >Subject experts	>Planning committee >Community Leaders	>Planning committee >Subject Experts
Purposes	>Develop strategic goals >Develop planning process	>Review best practices >Identify top performers >Refine & confirm strategic goals	>Prioritize objectives >Identify stakeholders >Identify techniques to measure implementation progress	>Educate stakeholders & public >Explain goals & 2nd level objectives >Revise priorities for community purposes >Gain consensus & additional recommendations	>Finalize recommendations
Process	>Committee meetings	>Committee meetings >Focus group 1	>Focus group 2	>6 Regional forums	>Statewide forums >Committee meetings
Outputs	>Strategic goals	>Validated strategic goals >First set objectives & actions	>Prioritized objectives >2nd set objectives & actions	>3rd set objectives & actions	>Final reports >Legislative agenda



STRATEGY

Section 4

A roadmap for success

Plans are only good intentions unless they immediately degenerate into hard work.

—Peter Drucker

Following is a partial set of actions that can be implemented to achieve the core strategies. It is a consensus of the membership of Accelerate Arkansas about actions that should be undertaken in order to give Arkansas the best possible chance of succeeding economically in the next fifteen to twenty years. Some of the actions have already been taken, while others may take years to implement.

Core Strategy 1:

Support job-creating research.

- > Provide research and development tax credits.
- > Create an Arkansas Research Alliance.
- > Recruit research talent with an Eminent Scholars Program.
- > Increase Arkansas research funding.
- > Create an Arkansas Research Park Authority.
- > Create and focus on programs of excellence in research.
- > Establish statewide master agreements for intellectual property sharing.

Core Strategy 2:

Develop risk capital that is available for all stages of the business cycle, especially the funding gap.

- > Create an Early Enterprise Development Fund.
- > Increase the Seed Capital Investment Program.
- > Establish a Risk Capital Matching Fund.
- > Facilitate a return to the state for support of private enterprise to be used for further investment.
- > Use state retirement funds to invest in technology companies in Arkansas.
- > Revise the investment tax credit.
- > Provide small grants for support tasks for start-up technology companies.
- > Amend the State Constitution to exempt private investors from usury restrictions for start-up companies.
- > Lower the capital gains tax rate for residents of Arkansas who invest in Arkansas-headquartered targeted businesses and hold the ownership for at least 5 years.
- > Implement a competitive severance tax for oil and gas extracted from within the state, use some of the funds to expand support of start-up technology companies and reduce other taxes commensurately.
- > Amend the State Constitution to allow state economic development agencies to enhance returns for investments in start-up companies by allowing the agencies to hold equity in those companies that participate in state economic development programs of the agencies.

Core Strategy 3:

Encourage entrepreneurship and accelerated new enterprise development.

- > Establish the Arkansas Accelerator Authority.
Note: This has been adopted as the Innovate Arkansas program.
- > Redesign the Arkansas Community of Excellence (ACE) program.
- > Develop regional entrepreneurial centers.

Core Strategy 4:

Increase the education level of Arkansans in science, technology, engineering and math (STEM).

- > Provide Arkansas STEM Teacher Grants as salary supplements.
- > Expand the Environmental and Spatial Technology (EAST) Initiative.
- > Include science, technology, pre-engineering, and math content in curriculum frameworks for all appropriate grades including elementary school.
- > Develop a general science education college degree.
- > Eliminate the “opt-out” provision of the *Smart Core* curriculum.
- > Institute 75 regional STEM-specialized high schools in Arkansas.
- > Establish a large supplemented internship program for STEM teachers to work in industry and higher education research.
- > Change the alternative certification program for private sector workers to more easily become certified as STEM teachers.
- > Establish more content-specific credentialing for STEM teachers; e.g. having chemistry teachers certified in chemistry content.
- > Improve STEM instructional practices at the state’s colleges of education.
- > Establish more scholarships—for STEM college degrees—that are hard to get but easy to keep.

Core strategy 5:

Sustain successful existing industry through advancing technology and competitiveness.

- > Modify the existing *Create Rebate* program.
- > Modify the existing investment tax credit *ArkPlus*.
- > Amend Arkansas’s bond guaranty law to allow for financing of start-up technology companies.
- > Create a tax credit program for high growth, high salary, small businesses.

This is a summary of the full report of Accelerate Arkansas. The full report can be found and downloaded at www.acceleratearkansas.org



CHANGE

Section 5

The end of “business as usual”

It is an immutable law in business that words are words, explanations are explanations, promises are promises—but only performance is reality.

—Harold S. Geneen

The old industrial oriented economy is fading in the U.S., as the new knowledge-based economy grows. There are great differences between the two, as illustrated in the table below.

KEYS TO THE OLD AND NEW ECONOMIES		
Issue	Old Economy	New Economy
ECONOMY-WIDE CHARACTERISTICS:		
Markets	Stable	Dynamic
Scope of Competition	National	Global
Organizational Form	Hierarchical, Bureaucratic	Networked, Entrepreneurial
Potential Geographic Mobility of Business	Low	High
Competition Between Regions	Low	High
INDUSTRY:		
Organization of Production	Mass Production	Flexible Production
Key Factor of Production	Capital/Labor	Innovation/Knowledge
Key Technology Driver	Mechanization	Digitization
Source of Competitive Advantage	Lowering Cost Through Economies of Scale	Innovation, Quality, Time to Market, and Cost
Importance of Research/Innovation	Moderate	High
Relations with Other Firms	Go it Alone	Alliances and Collaboration
WORKFORCE:		
Principal Policy Goal	Full Employment	Higher Wages and Incomes
Skills	Job-specific Skills	Broad Skills, Cross-Training
Requisite Education	A Skill	Lifelong Learning
Labor-Management Relations	Adversarial	Collaborative
Nature of Employment	Stable	Marked by Risk and Opportunity
GOVERNMENT:		
Business-Government Relations	Impose Requirements	Assist Firms' Innovation and Growth
Regulation	Command and Control	Market Tools, Flexibility

Source: Atkinson, Robert D., Randolph H. Court, and Joseph M. Ward. *THE STATE NEW ECONOMY INDEX: Benchmarking Economic Transformation in the States*. Progressive Policy Institute, July 1999, p. 5.

These changes demand a broadening of the focus of economic development activities. Today's businesses need locations that have characteristics conducive to the availability, continuing development, and quality of life satisfaction of highly skilled, well-educated, and creative employees. In Arkansas this means that effective economic development includes not only the organizations traditionally involved in business and industrial development, but also those involved in educational, technological and community development.

The organizational structures and policies of agencies that worked in economic development in the past are cumbersome and ill-equipped to deal with the new economic realities confronting Arkansas. The plans and activities of these organizations must be closely aligned and coordinated, requiring active communication and an integrated "team" effort in order to achieve optimum success.

Accelerate Arkansas proposes the adoption of a 21st Century economic development model.

- > Begin with an in-depth evaluation of the structure and organization of development activities by state government agencies, commissions, and other organizations.
- > Redesign the process by which economic development activities are carried out.
- > Create a body with oversight and strategic management responsibilities coordinating and monitoring the development activities undertaken by state organizations.

> Agencies involved in economic development should be considered for realignment into a new organization with these features:

- *Co-location of the staff for better coordination of economic development activities.*
- *Focus of the plan on "what works" for economic development, rather than on cost savings to agencies.*
- *Presence of an overall system that knits everything together, with the funding to support it.*
- *Modification of the current system of responsibility for, and management of, economic development in Arkansas.*
- *Provision for a mechanism to reevaluate programs, mission, and organization every six years. [The state had this mechanism, but recently abandoned it.]*
- *Provision for a state economic development strategic plan that focuses how state resources and grants are to be utilized, with updates on a six-year cycle.*

Keeping score

Planners must adopt some formal monitoring approach to be responsible leaders and to be responsive to the needs and wishes of stakeholders. The metrics used to judge success must link specific actions to outcomes.

The metric system proposed by Accelerate Arkansas has two major components: a top level scorecard and an internal integrated "Balanced Scorecard."

The University of Arkansas' Center for Business and Economic Research, in Fayetteville, developed a model top-level balanced scorecard for Arkansas.

A Model Top-Level Scorecard for Arkansas

	<i>Historic</i>	<i>Peer</i>	<i>Peer Trend</i>	<i>US</i>	<i>US Trend</i>
SCIENCE, TECHNOLOGY, ENGINEERING, AND MATH (STEM)					
Math/Science proficiency	Up	Flat	Down	Down	Flat
Use of technology	Up	Up	N/A	Up	N/A
ACT math & science	Flat	Down	Up	Down	Flat
Percent of households with computers	Flat	Down	Down	Down	Down
Percent of households with home internet access	Flat	Down	Up	Down	Up
College preparedness	Up	Down	Up	Down	Up
R & D					
R & D/GSP	Flat	Down	Down	Down	Down
Academic R & D	Up	Down	Up	Down	Up
# of advanced degrees in sciences and engineering	Up	Down	Up	Down	Up
Intensity of scientists and engineers (workforce)	Flat	Down	Down	Down	Down
ENTREPRENEURIAL ACTIVITY					
SBIR phase I and II grants	Up	Flat	Up	Down	Up
Patents	Down	Down	Flat	Down	Down
Net high-technology business formations as share of all business establishments	Down	Up	Up	Up	Up
RISK CAPITAL					
Venture capital disbursed per \$1,000 of gross state product	Down	Down	Down	Down	Down
Venture capital deals as share of high-technology business establishments	Up	Up	Up	Down	Up
CORE INDUSTRY CLUSTER (CIC) SUCCESS					
Employment in core industries	Flat	N/A	N/A	N/A	N/A
Payroll growth in core industries	Up	N/A	N/A	N/A	N/A
Mass lay-offs	Up	Flat	Type	Up	Up

The model top level scorecard should communicate to policy makers and stakeholders how successful the economic development strategies are in achieving the goal of increasing per capita income by building a knowledge-based economy.

The scorecard was designed to use the broad high level metrics associated with economic indicators that correlate with higher per capita personal

income, such as progress in education (especially STEM education), research and development funding levels, entrepreneurship, risk capital availability, and total employment by industry sector and changes in income. To be more useful by Arkansas' economic development leaders, the scorecard should also track the same metrics for surrounding or peer states and the U.S. as a whole.

Section 5

Translating strategies to policy, policy to actions

The best time to plant a tree
is 20 years ago. The second
best time is now.

—*Chinese Proverb*

Accelerate Arkansas develops policy recommendations based on opportunities and available information.

This report will be the basis for future recommendations to the Governor and the General Assembly and those recommendations will be consistent with Accelerate Arkansas' mission, five core strategies, and previous recommendations.

In its effort to translate strategies to policy, Accelerate Arkansas has offered recommendations for consideration during the 2005 and 2007 regular sessions of the General Assembly. A snapshot of core strategies and highest ranked objectives is shown and policy enactments (color coded for each session) are integrated into the snapshot.

The illustration represents a policy scorecard to date. Accelerate Arkansas, however, recognizes that achieving its mission may take another decade or longer and that translating strategies to policy is only the first step. Arkansas must next turn policy to actions.

Overarching Strategy for Arkansas

Task Force for the 21st Century Economy (Act 1024 of 2007)
& Appropriation (Act 1267 of 2007)

- Passed by legislation in 2005
- Passed by legislation in 2007

Entrepreneurship

1. Promote, coordinate, inspire, and grow entrepreneurship
2. Mentor and support entrepreneurs
 - **Innovate Arkansas** (Act 1596 of 2007)
3. Provide tax incentives for entrepreneurs
4. Identify high performers

Risk Capital

1. Create incentives for early stage investors in knowledge-based companies
 - **Validation Fund** (Act 1025 of 2007)
2. Create a pool of funds to be used for risk capital investments
 - **Risk Capital Matching** (Act 1025 of 2007) & **Appropriation** (Act 1023 of 2007)
3. Link investors to new businesses
4. Improve the availability of capital for early-stage firms
 - **Seed Capital Appropriation** (Act 1023 of 2007)
 - Eliminate 2-year waiting period for investment tax credit (Act 1232 of 2005)
5. Link deals to private inventors

Science and Engineering (S&E) Research

1. Seek more federal funding for research
2. Encourage academia to collaborate in product development and partner with business
 - **Arkansas Research Alliance** (Act 563 of 2007)
3. Fund start-up research for aspiring researchers
 - **Research Appropriation** (Act 1023 of 2007)
 - Research Appropriation (Act 2092 of 2005)
4. Invest in research equipment
 - **Arkansas Research Alliance** (Act 563 of 2007)
5. Develop best practices for, and reduce impediments to university-industry collaborations

Science, Technology, Engineering and Math

K-12

1. Create accelerated learning programs
2. Improve STEM content in curriculum frameworks
3. Begin STEM education early

Higher Education

1. Create scholarships that are hard to get, but easy to keep
2. Connect the K-12 STEM curriculum to the higher education curriculum
3. Enhance teacher-training at colleges and universities

Sustain Successful Companies

1. Create competitive research and development incentives to stimulate R&D investments by existing industry
 - **Enhanced Consolidated Incentive Act** (Act 1596 of 2007)
 - **Targeted Business R&D** (Act 1232 of 2005)
 - **Extend R&D Carry Forward** (Act 1232 of 2005)
 - **Increase Cap on Tech Development Projects** (Act 1232 of 2005)
2. Create economic incentives for existing knowledge based companies to expand within the state
 - Expand Eligibility of Bond Guaranty (Act 1232 of 2005)
3. Develop incentives for universities to do targeted research for existing/emerging industries
 - **Arkansas Research Alliance** (Act 563 of 2007)
4. Develop statewide R&D networks and promote university-industry collaborations
5. Support technological training for emerging and existing industry to support high-paying jobs
 - **Ease Tuition Reimbursement Tax Credit** (Act 1232 of 2005)
 - **Expand Technical Careers Student Loan Forgiveness** (Act 1232 of 2005)
6. Improve and enhance K-16 education to keep up with evolving technology
 - **Reward STEM teachers with industry competitive salaries** (Act 564 of 2007) & **Appropriation** (Act 1266 of 2007)
7. Develop International Strategies



This is Accelerate Arkansas' policy scorecard. Arkansas must next turn policy into persistent action.

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*This is a summary of the full report of Accelerate Arkansas.
The full report can be found and downloaded at www.acceleratearkansas.org*

Endnotes

- 1 Milken Institute. *Arkansas' Position in the Knowledge-based Economy: Prospects and Policy Options*. (Milken Institute, September 2004) p. 142.
- 2 <http://www.whitehouse.gov/infocus/economy/more-20040121.html>. Accessed on 4/4/2007.

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