THE STATE NEW ECONOMY INDEX

Benchmarking Economic Transformation in the States

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Technology & New Economy Project

July 1999

ACKNOWLEDGMENTS

We wish to thank our colleagues at the Progressive Policy Institute for their insights and editorial guidance, particularly Chuck Alston, Jenny Bates, Debbie Boylan, Will Marshall, and Steven Nider.

We would also like to thank those who provided data and background information for the *Index*, including the Center for Strategic and International Studies (CSIS); Charles E. Krider, the Institute for Public Policy and Business Research, University of Kansas; Craig Jerald, *Education Week*; Jennifer Montana, Collaborative Economics; William Parsons, Corporate Demographics; Michelle Richards, National School Boards Association; and the Bureau of Labor Statistics' Occupational Employment Statistics Program.

Finally, we want to express our gratitude and appreciation to those who served as outside reviewers: Lou Glazer, Michigan Futures; Don Hicks, University of Texas; Walt Plosila, Battelle Labs; Andrew Reamer, Reamer and Associates; William Schweke, Corporation for Enterprise Development; and Roger Stough, George Mason University.

“It is not the strongest of the species that survive,
nor the most intelligent,
but the ones most responsive to change.”

— Charles Darwin

In the last 15 years, a "New Economy" has emerged in the United States. Among its defining characteristics are a fundamentally altered industrial and occupational order, unprecedented levels of entrepreneurial dynamism and competition, and a dramatic trend toward globalization—all of which have been spurred to one degree or another by revolutionary advances in information technologies (IT). As these developments have swept through our national economy, they have also been restructuring and reshaping the 50 state economies. States differ, however, in the degree to which their economies are structured and operate in accordance with the tenets of the New Economy. This report uses a set of 17 economic indicators to measure these differences and assess states' progress as they adapt to the new economic order. With these indicators as a frame of reference, the report then outlines a state-level public policy framework aimed at promoting fast and widely shared economic growth.

THE TRANSFORMATION TO THE NEW ECONOMY

The previous economic order lasted from approximately 1938 to 1974. It was built on a manufacturing base that was geared toward standardized production and run by stable, hierarchical organizations that were preoccupied with incremental cost reductions and focused primarily on a national marketplace. Those factors were the bases for prosperity in most states.

As the foundations of that economic order broke down between the mid-1970s and the early 1990s, state economies underwent a series of seismic shocks that shook many to their very foundations. As industries restructured, states had to react to rolling regional recessions based in large part on sectoral crises—autos and steel in the Midwest, textiles in the South, minicomputers and defense in New England, farming in the Plains states, oil and gas in places like Texas and Oklahoma, lumber and wood products in the Pacific Northwest, and defense in California, to name a few. Moreover, within states, some urban and rural areas were particularly hard hit with higher rates of unemployment and outward migration. And during this period all states faced a dramatic slowdown in productivity and wage growth—from near 3 percent productivity growth nationwide in the 1950s and 1960s, to less than 1.25 percent through the first half of the 1990s. But these crises were more than episodic or random. They represented a turbulent period of transition from an old economic order to a new one.

Today, a New Economy is clearly emerging: it is a knowledge and idea-based economy where the keys to wealth and job creation are the extent to which ideas, innovation, and technology are embedded in all sectors of the economy.

Some of the most obvious signs of change in the New Economy are in fact among the root causes of it: revolutionary technological advances, including powerful personal computers, high-speed telecommunications, and the Internet. But the New Economy is about more than high technology and the Internet. Most firms, not just those producing technology, are organizing work around it. The New Economy is a metal casting firm in Pittsburgh that uses computer-aided manufacturing technology to cut costs, save energy, and reduce waste. It is a farmer in South Dakota who sows genetically altered seeds and drives a tractor with a global satellite positioning system. It is an insurance company in Iowa that uses software to flatten managerial hierarchies and give its workers broader responsibilities and autonomy. It's a textile firm in Georgia that uses the Internet to take orders from customers around the world.

The New Economy is as much about new organizational models as it is about new technologies. It is the Miller Brewing Company's brewery in Trenton, Ohio, which produces 50 percent more beer per worker than the company's next-most-productive facility, in part because a lean, 13-member crew has been trained to work in teams to handle the overnight shift with no oversight.[1]

One of the most striking structural changes in the New Economy is the degree to which dynamism, constant innovation, and speed have become the norm. Autos that took 6 years from concept to production in 1990 now take 2 years. The Minnesota Mining & Manufacturing Company, which markets everything from pressure-sensitive adhesive tapes and abrasives to medical devices, now receives 30 percent of its revenues from products less than four years old. In the frenetic Internet economy, people now talk about technological evolution in "Web years" (which amounts to roughly one fiscal quarter) because the rules of the game seem to change that quickly. In this market environment, a new generation of fast-growing firms has become the key to economic growth. Nearly three quarters of all net new jobs are being created by 350,000 of these "gazelle" firms (firms that have increased annual sales revenue by 20 percent for four straight years).

With entrepreneurial growth, however, comes risk. Almost a third of all jobs are in flux every year (meaning they have either recently been added, or will soon be eliminated from the economy).[2] This "churn" effect is being spurred by new technology, but also by increasing competition—a trend that is, in turn, partly a product of increasing globalization. (Between 1960 and 1997, U.S. imports and exports grew one-and-a-half times faster than GDP.[3])

Amid this constant economic churning, new jobs and industries have replaced older ones. States' economic bases have evolved beyond traditional manufacturing to include high-tech manufacturing, traded services, and increasingly globally oriented e-busi-

nesses. The trend is strikingly apparent in the changing occupational mix of the New Economy: Between 1969 and 1995, virtually all the jobs lost in the production or distribution of goods have been replaced by office jobs.[4] Today, almost 93 million American workers (holding approximately 80 percent of all jobs) do not spend their days making things—instead, they move things, process or generate information, or provide services to people.

As these changes have swept through the U.S. economy as a whole, they have also begun restructuring and reshaping the 50 state economies, though some more than others. The purpose of this report is to examine each state's economy in the context of the underlying structural foundations of the New Economy. It is not intended to rank state business climates, economic performance, or economic development capacities or policies in the traditional sense. Nor is it intended to crown "winners" or stigmatize "losers." Rather, our intent is to highlight differences among the structural foundations of state economies and to focus attention on a policy framework to promote economic development in the New Economy.

NEW STATE ECONOMIES, NEW ECONOMIC STRATEGIES

A state's economic structure is in no small part determined by historical factors. Some states that did well in the old economy have been slow to adapt to the New Economy. For example, states that have relied on natural resources and older manufacturing industries (like West Virginia, Wyoming, or Missouri), along with states that have relied on their ability to use low costs to attract firms (such as Mississippi, Alabama, or Louisiana), tend to score poorly on New Economy indicators. In contrast, states that industrialized later (such as California, Colorado, Utah, Arizona, New Mexico, and Washington) tend to have high New Economy indicator scores. States that underwent industrial transformation in the 1950s and 1960s and have since rebounded on a new high-tech and advanced services economic base (such as Massachusetts, Connecticut, New Jersey, and Delaware) also tend to score well.

Yet, while history shapes the hand a state is dealt, public policy determines how that hand is played. For example, policies that promote technological innovation and improve education can boost a state's innovative capacity and create a more dynamic and productive workforce. Some of the states with rankings in the middle of the pack in this report (such as Kansas, Maine, and Rhode Island) could see improvements over the next decade as recently enacted forward-looking economic policies begin to bear fruit. In contrast, some higher ranking states may be resting on their laurels and not making the kinds of investments and policy changes needed to maintain strong economic foundations. (California's relative decline in K-12 education performance is a leading case in point.) Just as New Economy businesses constantly scramble to embrace new practices and innovations, states must continually improve their policies and governmental operations.

For most states, the factors that drive growth today are very different than they were 25 years ago. In the old economy, the preconditions for states' economic success were things like low costs; abundant, basically skilled labor; and good transportation and other physical infrastructures. And the standard bag of state-level economic policy tricks included things like giveaways, tax holidays, and other business incentives. But both the playing field and the rules of the game have changed in the New Economy. Some conditions no longer ensure success (for example, low costs), while others are nearly ubiquitous in all states (like good transportation). So now economic policy must change, too.

In the New Economy, states' economic success will increasingly be determined by how effectively they can spur technological innovation, entrepreneurship, education, specialized skills, and the transition of all organizations—public and private—from bureaucratic hierarchies to learning networks.

After ranking the states according to the 17 economic indicators, the last section of this report outlines a progressive, innovation-oriented public policy framework designed to foster success in the New Economy. There are five key policy strategies states need to follow:

1. **Co-invest in the skills of the workforce.**
2. **Co-invest in an infrastructure for innovation.**
3. **Promote innovation- and customer-oriented government.**
4. **Foster the transformation to a digital economy.**
5. **Foster civic collaboration.**

States that focus their policy efforts in these areas will be well positioned to experience strong growth, particularly in the incomes of residents across all socioeconomic strata. And that is the true objective. Developing a vibrant New Economy is not an end in itself; it is the means to advance larger progressive goals: new economic opportunities and higher living standards, more individual choice and freedom, greater dignity and autonomy for working Americans, stronger communities, and wider citizen participation in public life.

Keys to the Old and New Economies[5]

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

Measuring the New Economy is not an easy task. The federal statistical system, which was founded largely on the notion of a stable economy with most of the output in agricultural and manufactured goods, still tends to focus on monetary measures related to managing somewhat predictable business cycles. But the New Economy is neither stable nor predictable, and business cycles appear to have changed in the wake of the IT revolution.

We attempted to illustrate what is actually new about this so-called New Economy in *The New Economy Index: Understanding America's Economic Transformation*.[6] In that report, we used indicators gathered from disparate public and private data sources to track the structural transformation of the U.S. economy along four main lines: the industrial and occupational mix, globalization, entrepreneurial dynamism and competition, and the IT revolution.

The State New Economy Index builds on this work, applying key measurers of the New Economy to the state economies. But measuring the New Economy at the state level is even more difficult than it is at the national level because many of the most useful data tend to be nationally oriented. Given that regional clusters of innovation play a more important role in the New Economy, this gap makes a detailed examination of the New Economy all the more difficult.

Due to data limitations, there are a number of New Economy factors that should be included but are not. For example, while data are available on high-tech industries, recent data are not available on the degree to which a state's industries are using advanced technologies.[7] Similarly, while data measuring the educational attainment of a state's workforce are available, there are no data measuring the degree to which a state's industries are training their workforce or reorganizing work to become high-performance organizations. Data on exports are only available for manufacturing, not services. Similarly, accurate data are largely unavailable to measure how advanced state telecommunications infrastructures are, or the degree to which residents and businesses are using "broadband" telecommunications technologies.[8]

Moreover, not all indicators in this report are perfect measures of New Economy characteristics. For example, the indicator of export orientation of manufacturing favors states whose manufacturing sectors have become global—a basic New Economy trait—but states like Alaska, which export a large share of processed natural resources, also get high marks based on old economy strengths. Likewise, the measure of office jobs not only tracks New Economy occupations such as product designers, sales and marketing managers, and financial analysts, it also includes many government jobs. However, despite these limitations, a number of factors can still be measured which, we believe, collectively paint a robust picture comparing state economies.

The 17 indicators in this report are divided into 5 categories that best capture what is new about the New Economy:

1) **"Knowledge jobs."** Separate indicators measure jobs in offices; jobs held by managers, professionals, and technicians; and the educational attainment of the workforce.
2) **Globalization.** Indicators measure the export orientation of manufacturing and foreign direct investment.
3) **Economic dynamism and competition.** Indicators measure the number of jobs in fast-growing "gazelle" companies (companies with sales growth of 20 percent or more for four straight years); the rate of economic "churn" (a product of new business start-ups and existing business failures); and the value of initial public stock offerings (IPOs) by companies.
4) **The transformation to a digital economy.** Indicators measure the percentage of adults online; the number of ".com" domain name registrations; technology in schools; and the degree to which state and local governments use information technologies to deliver services.
5) **Technological innovation capacity.** Indicators measure the number of high-tech jobs; the number of scientists and engineers in the workforce; the number of patents issued; industry investment in research and development; and venture capital activity.

In all cases, the report relies on the most recently published data available, but because of the delays in publishing federal statistics, the data may in some cases be several years old. In addition, in all cases, data are reported to control for the size of the state, using factors such as the number of workers or the gross state product as the denominator.

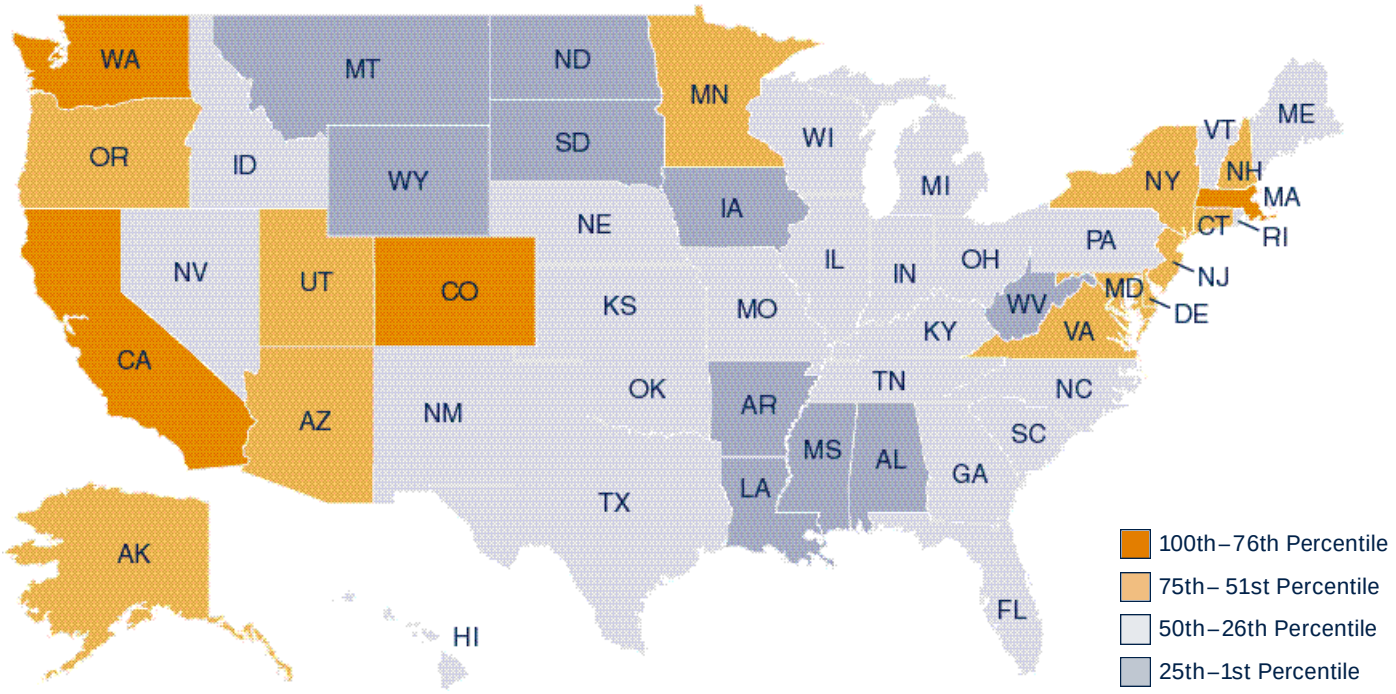
Scores in each indicator are calculated as follows: In order to measure the magnitude of the differences between the states instead of just their rank from one to 50, raw scores are based on standard deviations from the mean. Therefore, on most indicators, approximately half the states have negative scores (below the national mean) and approximately half have positive scores. The scores are equally adjusted (six is added to every score) to ensure that all are positive.

In three of the five indicator categories, and in the calculation of the overall New Economy scores, the indicators are weighted so that closely correlated ones (for example, patents, R&D spending, and high-tech workers) don't bias the results. (See Appendix A.)

The overall scores are calculated by adding the states' adjusted scores in each of the five indicator categories and then dividing that total by the sum of the highest score achieved by any state in each category. Thus, each state's final score is a percentage of the total score a state would have achieved if it had finished first in every category.

The maps were coded using the following methodology: The range between the highest and lowest scores was calculated and divided by four. That product was subtracted from the top score to calculate the range for the 100th to 76th percentile, and likewise for the other three percentile ranges. In other words, the percentiles do not necessarily divide into an equal number of states, but rather indicate which states' scores fall into a particular range.

OVERALL SCORES



Based on the scores below, the states break into percentiles as indicated on the map. See methodology for further explanation.

Rank	State	Score	Rank	State	Score	Rank	State	Score
1	Massachusetts	82.3	18	Vermont	51.9	35	Missouri	44.2
2	California	74.3	19	New Mexico	51.4	36	Nebraska	41.8
3	Colorado	72.3	20	Florida	50.8	37	Indiana	41.0
4	Washington	69.0	21	Nevada	49.0	38	South Carolina	39.7
5	Connecticut	64.9	22	Illinois	48.4	39	Kentucky	39.4
6	Utah	64.0	23	Idaho	47.9	40	Oklahoma	38.6
7	New Hampshire	62.5	24	Pennsylvania	46.7	41	Wyoming	34.5
8	New Jersey	60.9	25	Georgia	46.6	42	Iowa	33.5
9	Delaware	59.9	26	Hawaii	46.1	43	South Dakota	32.3
10	Arizona	59.2	27	Kansas	45.8	44	Alabama	32.3
11	Maryland	59.2	28	Maine	45.6	45	North Dakota	29.0
12	Virginia	58.8	29	Rhode Island	45.3	46	Montana	29.0
13	Alaska	57.7	30	North Carolina	45.2	47	Louisiana	28.2
14	Minnesota	56.5	31	Tennessee	45.1	48	West Virginia	26.8
15	Oregon	56.1	32	Wisconsin	44.9	49	Arkansas	26.2
16	New York	54.5	33	Ohio	44.8	50	Mississippi	22.6
17	Texas	52.3	34	Michigan	44.6		U.S. Average	48.1

STATE NEW ECONOMY SCORES BY OVERALL RANK

		Overall	Office Jobs		Managerial/ Professional Jobs		Workforce Education		Export Focus of Manufacturing		Foreign Direct Investment		"Gazelle" Jobs		Job Churning		IPOs	
Rank	State	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score
1	Massachusetts	82.27	2	26.4%	1	34.9%	6	69.1	5	22.7%	4	5.4%	9	15.5%	18	2.6%	21	0.26%
2	California	74.25	17	19.0%	14	26.3%	5	69.7	10	20.5%	20	3.8%	6	16.1%	2	3.6%	15	0.49%
3	Colorado	72.32	15	19.1%	4	27.9%	1	75.9	17	18.2%	25	3.5%	28	13.6%	3	3.5%	4	1.05%
4	Washington	68.99	32	16.8%	6	27.7%	4	70.8	2	31.2%	31	3.2%	40	12.6%	12	2.8%	13	0.54%
5	Connecticut	64.89	4	24.3%	2	30.3%	8	68.8	3	24.2%	7	5.1%	37	12.9%	38	1.9%	2	1.22%
6	Utah	63.98	20	18.7%	39	22.1%	3	72.4	25	17.7%	27	3.4%	4	16.7%	6	3.1%	18	0.34%
7	New Hampshire	62.45	29	17.6%	10	26.9%	9	66.5	7	21.2%	9	5.1%	5	16.2%	22	2.5%	35	0.11%
8	New Jersey	60.86	6	21.7%	15	25.7%	17	62.3	26	17.3%	5	5.3%	36	13.1%	4	3.4%	10	0.64%
9	Delaware	59.87	1	26.7%	5	27.8%	27	59.4	14	19.9%	14	4.3%	39	12.6%	20	2.5%	47	0.00%
10	Arizona	59.23	26	18.5%	24	24.5%	12	66.2	9	20.8%	39	2.7%	3	17.7%	5	3.3%	23	0.25%
11	Maryland	59.16	22	18.7%	9	27.5%	7	69.0	34	15.6%	21	3.6%	43	12.4%	9	3.0%	17	0.39%
12	Virginia	58.76	21	18.7%	3	29.6%	13	65.3	46	14.0%	12	4.4%	31	13.5%	21	2.5%	6	1.02%
13	Alaska	57.70	48	12.6%	20	25.3%	2	73.3	1	49.3%	24	3.5%	49	11.3%	42	1.8%	36	0.11%
14	Minnesota	56.53	7	21.5%	7	27.7%	14	63.6	20	18.0%	22	3.6%	35	13.2%	45	1.7%	22	0.25%
15	Oregon	56.10	31	17.1%	37	22.3%	11	66.3	8	20.9%	35	3.0%	2	17.8%	26	2.3%	24	0.22%
16	New York	54.48	3	26.4%	25	24.3%	19	61.8	19	18.0%	13	4.3%	41	12.5%	7	3.0%	12	0.59%
17	Texas	52.31	25	18.6%	47	19.5%	24	60.2	4	23.9%	26	3.5%	15	14.6%	13	2.8%	11	0.63%
18	Vermont	51.87	44	14.3%	32	23.5%	15	62.8	16	18.5%	32	3.2%	30	13.6%	47	1.5%	7	0.95%
19	New Mexico	51.43	38	15.3%	13	26.4%	21	60.7	42	14.5%	44	2.1%	24	13.9%	23	2.5%	1	1.55%
20	Florida	50.75	8	21.2%	16	25.6%	30	56.6	50	7.9%	29	3.2%	7	15.8%	16	2.8%	14	0.51%
21	Nevada	49.03	11	20.5%	50	17.8%	28	57.6	38	15.2%	33	3.1%	1	19.3%	1	4.1%	40	0.07%
22	Illinois	48.37	5	22.9%	8	27.7%	22	60.6	15	18.6%	19	4.0%	17	14.4%	24	2.4%	16	0.39%
23	Idaho	47.93	47	13.3%	46	19.9%	20	60.9	6	22.0%	46	2.0%	11	15.4%	11	2.9%	34	0.14%
24	Pennsylvania	46.72	10	20.8%	12	26.4%	43	48.3	24	17.7%	16	4.2%	34	13.4%	19	2.5%	27	0.19%
25	Georgia	46.61	18	18.8%	21	25.1%	35	54.2	40	14.8%	6	5.2%	13	14.8%	8	3.0%	19	0.31%
26	Hawaii	46.14	16	19.1%	40	22.0%	10	66.3	45	14.0%	1	8.8%	50	9.2%	10	2.9%	46	0.02%
27	Kansas	45.80	33	16.7%	11	26.4%	16	62.5	33	15.7%	30	3.2%	12	15.0%	25	2.4%	41	0.06%
28	Maine	45.62	39	15.2%	28	23.7%	34	54.3	18	18.1%	10	4.8%	22	14.0%	33	2.1%	5	1.04%
29	Rhode Island	45.31	9	21.2%	19	25.3%	29	57.2	21	18.0%	18	4.1%	25	13.8%	40	1.9%	47	0.00%
30	North Carolina	45.16	30	17.2%	22	24.9%	39	52.4	37	15.2%	3	6.2%	23	13.9%	27	2.3%	29	0.18%
31	Tennessee	45.14	19	18.8%	27	23.8%	45	47.7	32	15.7%	8	5.1%	14	14.8%	17	2.7%	39	0.07%
32	Wisconsin	44.92	23	18.6%	30	23.6%	36	53.2	27	17.3%	40	2.5%	10	15.4%	35	2.1%	26	0.19%
33	Ohio	44.77	14	20.0%	23	24.6%	40	50.8	13	20.0%	17	4.2%	29	13.6%	28	2.3%	20	0.31%
34	Michigan	44.59	24	18.6%	45	20.5%	31	56.3	11	20.4%	28	3.4%	42	12.4%	31	2.2%	38	0.08%
35	Missouri	44.24	12	20.2%	31	23.5%	38	52.7	36	15.3%	36	3.0%	8	15.5%	36	2.0%	32	0.15%
36	Nebraska	41.81	13	20.1%	18	25.4%	26	59.7	47	13.7%	45	2.0%	18	14.4%	43	1.8%	25	0.21%
37	Indiana	40.95	34	16.7%	36	22.3%	42	48.5	23	17.8%	15	4.2%	26	13.8%	32	2.2%	30	0.17%
38	South Carolina	39.69	37	15.8%	29	23.6%	41	49.7	22	18.0%	2	6.7%	44	12.3%	34	2.1%	37	0.10%
39	Kentucky	39.40	40	15.2%	34	23.1%	49	42.5	29	16.6%	11	4.8%	19	14.4%	30	2.3%	9	0.68%
40	Oklahoma	38.63	35	16.4%	26	24.2%	32	56.0	31	16.0%	43	2.3%	27	13.7%	15	2.8%	3	1.06%
41	Wyoming	34.49	50	10.7%	41	21.8%	18	62.2	43	14.3%	41	2.5%	47	11.9%	39	1.9%	42	0.05%
42	Iowa	33.51	28	17.7%	38	22.1%	37	52.7	39	14.9%	42	2.4%	46	12.1%	49	1.4%	31	0.16%
43	South Dakota	32.33	41	15.0%	48	19.5%	33	54.5	30	16.5%	49	1.4%	33	13.4%	46	1.7%	47	0.00%
44	Alabama	32.28	36	16.2%	35	22.6%	44	48.0	35	15.6%	34	3.1%	20	14.3%	29	2.3%	44	0.04%
45	North Dakota	28.99	45	14.2%	49	18.1%	25	59.8	49	12.2%	48	1.4%	45	12.3%	50	1.3%	8	0.78%
46	Montana	28.98	49	11.7%	42	21.6%	23	60.3	44	14.1%	50	1.0%	38	12.7%	48	1.5%	47	0.00%
47	Louisiana	28.22	27	18.2%	17	25.5%	46	47.5	28	17.0%	38	2.9%	32	13.5%	41	1.8%	28	0.18%
48	West Virginia	26.79	43	14.6%	33	23.1%	50	37.9	12	20.2%	23	3.5%	48	11.6%	37	2.0%	43	0.04%
49	Arkansas	26.22	42	15.0%	43	20.9%	48	42.7	41	14.7%	37	3.0%	16	14.6%	14	2.8%	45	0.04%
50	Mississippi	22.63	46	13.8%	44	20.9%	47	46.9	48	12.9%	47	1.8%	21	14.2%	44	1.7%	33	0.15%
	U.S. Average	**48.07**		**19.6%**		**24.9%**		**58.5**		**18.1%**		**3.9%**		**14.3%**		**2.7%**		**0.42%**

THE RANKINGS

State	Online Population		Commercial Internet Domains		Education Technology		Digital Government		High-Tech Jobs		Scientists and Engineers		Patents		Industry R&D Investment		Venture Capital	
	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score
MA	8	39%	3	0.35	34	1.53	14	67.7	3	7.5%	4	0.81%	4	0.83	3	3.8%	1	0.62%
CA	11	36%	2	0.45	29	1.76	22	62.8	4	6.2%	12	0.51%	7	0.75	6	3.1%	2	0.50%
CO	2	47%	6	0.32	13	2.61	30	58.5	2	7.5%	6	0.56%	12	0.60	15	1.7%	3	0.34%
WA	6	41%	8	0.30	2	3.79	1	79.7	18	4.1%	14	0.49%	21	0.46	9	2.9%	5	0.24%
CT	19	32%	18	0.26	42	1.31	24	61.0	16	4.8%	9	0.54%	2	0.88	5	3.3%	14	0.11%
UT	4	46%	5	0.32	5	3.00	19	65.7	15	4.5%	11	0.52%	13	0.59	14	1.8%	22	0.09%
NH	5	41%	10	0.29	37	1.42	35	55.3	1	7.8%	25	0.37%	8	0.73	18	1.5%	4	0.29%
NJ	24	32%	15	0.28	43	0.99	28	59.1	8	5.5%	5	0.56%	5	0.81	7	3.1%	11	0.14%
DE	17	33%	16	0.27	14	2.55	40	50.5	37	1.5%	1	1.07%	1	1.12	2	4.0%	40	0.00%
AZ	14	34%	4	0.34	33	1.60	13	68.8	12	5.3%	30	0.35%	16	0.51	23	1.3%	13	0.12%
MD	3	46%	9	0.30	40	1.38	12	69.4	10	5.1%	3	0.85%	23	0.43	33	0.8%	19	0.10%
VA	7	40%	7	0.31	26	1.88	17	67.0	6	5.2%	13	0.50%	31	0.26	32	0.8%	21	0.10%
AK	1	52%	24	0.21	1	3.81	3	76.6	44	1.6%	15	0.47%	46	0.14	44	0.1%	44	0.00%
MN	12	35%	23	0.23	7	2.92	8	71.2	7	5.5%	24	0.38%	9	0.72	11	2.0%	7	0.17%
OR	13	34%	11	0.29	9	2.82	18	65.7	9	4.8%	20	0.42%	19	0.48	29	0.9%	18	0.11%
NY	36	27%	14	0.28	41	1.36	25	60.1	17	4.6%	10	0.53%	11	0.62	20	1.5%	24	0.07%
TX	18	33%	21	0.24	25	1.93	31	58.2	11	4.8%	33	0.34%	22	0.45	26	1.2%	9	0.16%
VT	15	34%	19	0.25	12	2.64	36	55.3	5	5.2%	7	0.55%	3	0.86	13	1.8%	39	0.01%
NM	22	32%	34	0.17	44	0.96	37	52.4	22	3.3%	2	1.00%	26	0.33	4	3.6%	44	0.00%
FL	27	31%	12	0.28	21	2.23	6	72.7	25	3.4%	48	0.23%	27	0.32	25	1.2%	12	0.13%
NV	35	27%	1	0.46	47	0.78	32	56.8	45	1.7%	49	0.23%	35	0.24	37	0.7%	28	0.07%
IL	43	26%	20	0.24	38	1.42	50	39.4	21	4.0%	23	0.38%	14	0.53	17	1.6%	15	0.11%
ID	9	37%	37	0.16	16	2.54	44	48.0	13	3.2%	28	0.36%	6	0.79	8	3.1%	37	0.01%
PA	34	27%	25	0.20	45	0.93	10	70.4	26	3.3%	17	0.46%	17	0.50	16	1.7%	17	0.11%
GA	20	32%	22	0.24	35	1.51	48	44.3	19	4.1%	40	0.30%	29	0.27	38	0.6%	8	0.16%
HI	21	32%	13	0.28	3	3.63	45	46.3	46	1.5%	19	0.46%	47	0.14	50	0.0%	30	0.04%
KS	23	32%	26	0.20	27	1.81	5	72.9	30	2.6%	37	0.32%	37	0.21	30	0.9%	26	0.07%
ME	16	34%	28	0.20	8	2.92	42	48.9	36	1.8%	21	0.41%	44	0.15	28	1.0%	32	0.03%
RI	25	31%	17	0.26	32	1.61	43	48.2	24	3.6%	8	0.55%	15	0.52	10	2.1%	43	0.00%
NC	40	26%	30	0.19	24	1.93	33	56.5	23	3.6%	22	0.40%	25	0.34	27	1.2%	10	0.15%
TN	26	31%	33	0.17	20	2.34	20	63.7	42	2.0%	29	0.35%	34	0.25	34	0.7%	6	0.18%
WI	29	30%	32	0.18	22	1.99	2	79.5	35	2.5%	44	0.29%	20	0.47	24	1.3%	27	0.07%
OH	28	30%	27	0.20	36	1.49	27	59.4	32	2.7%	26	0.37%	18	0.50	22	1.4%	29	0.06%
MI	42	26%	36	0.17	39	1.40	9	70.6	34	2.4%	27	0.36%	10	0.64	1	4.9%	31	0.04%
MO	32	28%	29	0.19	28	1.78	4	73.5	27	3.0%	31	0.34%	33	0.25	19	1.5%	16	0.11%
NE	30	30%	40	0.14	4	3.16	15	67.2	20	4.1%	34	0.33%	39	0.19	41	0.3%	42	0.00%
IN	41	26%	31	0.18	23	1.94	16	67.1	33	2.5%	43	0.29%	24	0.42	12	1.8%	33	0.03%
SC	37	27%	38	0.15	30	1.75	21	63.4	41	2.2%	45	0.28%	32	0.26	31	0.9%	20	0.10%
KY	46	23%	42	0.13	6	2.97	23	62.1	38	2.1%	47	0.24%	41	0.17	39	0.5%	23	0.08%
OK	39	26%	35	0.17	50	0.42	38	52.1	29	3.0%	35	0.32%	28	0.30	40	0.4%	38	0.01%
WY	10	36%	39	0.15	10	2.75	11	69.8	50	1.0%	32	0.34%	42	0.17	43	0.2%	44	0.00%
IA	38	27%	45	0.13	11	2.72	26	59.5	31	2.6%	39	0.31%	30	0.27	21	1.4%	35	0.02%
SD	44	25%	47	0.11	17	2.45	7	71.5	14	3.4%	42	0.30%	49	0.12	46	0.1%	44	0.00%
AL	45	25%	43	0.13	48	0.75	34	56.1	28	3.0%	36	0.32%	45	0.15	35	0.7%	34	0.03%
ND	33	28%	49	0.09	15	2.55	39	50.9	39	1.6%	18	0.46%	43	0.16	48	0.1%	44	0.00%
MT	31	30%	41	0.14	19	2.35	41	49.8	49	1.2%	16	0.46%	36	0.23	47	0.1%	25	0.07%
LA	47	21%	44	0.13	49	0.68	47	45.0	48	1.4%	38	0.31%	38	0.21	49	0.1%	36	0.01%
WV	48	20%	46	0.11	18	2.38	46	46.1	43	1.8%	41	0.30%	40	0.18	36	0.7%	44	0.00%
AR	49	19%	48	0.11	31	1.67	49	41.2	40	1.9%	50	0.20%	50	0.10	42	0.3%	44	0.00%
MS	50	17%	50	0.08	46	0.90	29	58.7	47	1.7%	46	0.26%	48	0.12	45	0.1%	44	0.00%
		31%		**0.26**		**2.0**		**60.4**		**4.5%**		**0.42%**		**0.48**		**1.8%**		**0.17%**

STATE NEW ECONOMY SCORES IN ALPHABETICAL ORDER

	Overall		Office Jobs		Managerial/ Professional Jobs		Workforce Education		Export Focus of Manufacturing		Foreign Direct Investment		"Gazelle" Jobs		Job Churning		IPOs	
State	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Alabama	44	32.28	36	16.2%	35	22.6%	44	48.0	35	15.6%	34	3.1%	20	14.3%	29	2.3%	44	0.04%
Alaska	13	57.70	48	12.6%	20	25.3%	2	73.3	1	49.3%	24	3.5%	49	11.3%	42	1.8%	36	0.11%
Arizona	10	59.23	26	18.5%	24	24.5%	12	66.2	9	20.8%	39	2.7%	3	17.7%	5	3.3%	23	0.25%
Arkansas	49	26.22	42	15.0%	43	20.9%	48	42.7	41	14.7%	37	3.0%	16	14.6%	14	2.8%	45	0.04%
California	2	74.25	17	19.0%	14	26.3%	5	69.7	10	20.5%	20	3.8%	6	16.1%	2	3.6%	15	0.49%
Colorado	3	72.32	15	19.1%	4	27.9%	1	75.9	17	18.2%	25	3.5%	28	13.6%	3	3.5%	4	1.05%
Connecticut	5	64.89	4	24.3%	2	30.3%	8	68.8	3	24.2%	7	5.1%	37	12.9%	38	1.9%	2	1.22%
Delaware	9	59.87	1	26.7%	5	27.8%	27	59.4	14	19.9%	14	4.3%	39	12.6%	20	2.5%	47	0.00%
Florida	20	50.75	8	21.2%	16	25.6%	30	56.6	50	7.9%	29	3.2%	7	15.8%	16	2.8%	14	0.51%
Georgia	25	46.61	18	18.8%	21	25.1%	35	54.2	40	14.8%	6	5.2%	13	14.8%	8	3.0%	19	0.31%
Hawaii	26	46.14	16	19.1%	40	22.0%	10	66.3	45	14.0%	1	8.8%	50	9.2%	10	2.9%	46	0.02%
Idaho	23	47.93	47	13.3%	46	19.9%	20	60.9	6	22.0%	46	2.0%	11	15.4%	11	2.9%	34	0.14%
Illinois	22	48.37	5	22.9%	8	27.7%	22	60.6	15	18.6%	19	4.0%	17	14.4%	24	2.4%	16	0.39%
Indiana	37	40.95	34	16.7%	36	22.3%	42	48.5	23	17.8%	15	4.2%	26	13.8%	32	2.2%	30	0.17%
Iowa	42	33.51	28	17.7%	38	22.1%	37	52.7	39	14.9%	42	2.4%	46	12.1%	49	1.4%	31	0.16%
Kansas	27	45.80	33	16.7%	11	26.4%	16	62.5	33	15.7%	30	3.2%	12	15.0%	25	2.4%	41	0.06%
Kentucky	39	39.40	40	15.2%	34	23.1%	49	42.5	29	16.6%	11	4.8%	19	14.4%	30	2.3%	9	0.68%
Louisiana	47	28.22	27	18.2%	17	25.5%	46	47.5	28	17.0%	38	2.9%	32	13.5%	41	1.8%	28	0.18%
Maine	28	45.62	39	15.2%	28	23.7%	34	54.3	18	18.1%	10	4.8%	22	14.0%	33	2.1%	5	1.04%
Maryland	11	59.16	22	18.7%	9	27.5%	7	69.0	34	15.6%	21	3.6%	43	12.4%	9	3.0%	17	0.39%
Massachusetts	1	82.27	2	26.4%	1	34.9%	6	69.1	5	22.7%	4	5.4%	9	15.5%	18	2.6%	21	0.26%
Michigan	34	44.59	24	18.6%	45	20.5%	31	56.3	11	20.4%	28	3.4%	42	12.4%	31	2.2%	38	0.08%
Minnesota	14	56.53	7	21.5%	7	27.7%	14	63.6	20	18.0%	22	3.6%	35	13.2%	45	1.7%	22	0.25%
Mississippi	50	22.63	46	13.8%	44	20.9%	47	46.9	48	12.9%	47	1.8%	21	14.2%	44	1.7%	33	0.15%
Missouri	35	44.24	12	20.2%	31	23.5%	38	52.7	36	15.3%	36	3.0%	8	15.5%	36	2.0%	32	0.15%
Montana	46	28.98	49	11.7%	42	21.6%	23	60.3	44	14.1%	50	1.0%	38	12.7%	48	1.5%	47	0.00%
Nebraska	36	41.81	13	20.1%	18	25.4%	26	59.7	47	13.7%	45	2.0%	18	14.4%	43	1.8%	25	0.21%
Nevada	21	49.03	11	20.5%	50	17.8%	28	57.6	38	15.2%	33	3.1%	1	19.3%	1	4.1%	40	0.07%
New Hampshire	7	62.45	29	17.6%	10	26.9%	9	66.5	7	21.2%	9	5.1%	5	16.2%	22	2.5%	35	0.11%
New Jersey	8	60.86	6	21.7%	15	25.7%	17	62.3	26	17.3%	5	5.3%	36	13.1%	4	3.4%	10	0.64%
New Mexico	19	51.43	38	15.3%	13	26.4%	21	60.7	42	14.5%	44	2.1%	24	13.9%	23	2.5%	1	1.55%
New York	16	54.48	3	26.4%	25	24.3%	19	61.8	19	18.0%	13	4.3%	41	12.5%	7	3.0%	12	0.59%
North Carolina	30	45.16	30	17.2%	22	24.9%	39	52.4	37	15.2%	3	6.2%	23	13.9%	27	2.3%	29	0.18%
North Dakota	45	28.99	45	14.2%	49	18.1%	25	59.8	49	12.2%	48	1.4%	45	12.3%	50	1.3%	8	0.78%
Ohio	33	44.77	14	20.0%	23	24.6%	40	50.8	13	20.0%	17	4.2%	29	13.6%	28	2.3%	20	0.31%
Oklahoma	40	38.63	35	16.4%	26	24.2%	32	56.0	31	16.0%	43	2.3%	27	13.7%	15	2.8%	3	1.06%
Oregon	15	56.10	31	17.1%	37	22.3%	11	66.3	8	20.9%	35	3.0%	2	17.8%	26	2.3%	24	0.22%
Pennsylvania	24	46.72	10	20.8%	12	26.4%	43	48.3	24	17.7%	16	4.2%	34	13.4%	19	2.5%	27	0.19%
Rhode Island	29	45.31	9	21.2%	19	25.3%	29	57.2	21	18.0%	18	4.1%	25	13.8%	40	1.9%	47	0.00%
South Carolina	38	39.69	37	15.8%	29	23.6%	41	49.7	22	18.0%	2	6.7%	44	12.3%	34	2.1%	37	0.10%
South Dakota	43	32.33	41	15.0%	48	19.5%	33	54.5	30	16.5%	49	1.4%	33	13.4%	46	1.7%	47	0.00%
Tennessee	31	45.14	19	18.8%	27	23.8%	45	47.7	32	15.7%	8	5.1%	14	14.8%	17	2.7%	39	0.07%
Texas	17	52.31	25	18.6%	47	19.5%	24	60.2	4	23.9%	26	3.5%	15	14.6%	13	2.8%	11	0.63%
Utah	6	63.98	20	18.7%	39	22.1%	3	72.4	25	17.7%	27	3.4%	4	16.7%	6	3.1%	18	0.34%
Vermont	18	51.87	44	14.3%	32	23.5%	15	62.8	16	18.5%	32	3.2%	30	13.6%	47	1.5%	7	0.95%
Virginia	12	58.76	21	18.7%	3	29.6%	13	65.3	46	14.0%	12	4.4%	31	13.5%	21	2.5%	6	1.02%
Washington	4	68.99	32	16.8%	6	27.7%	4	70.8	2	31.2%	31	3.2%	40	12.6%	12	2.8%	13	0.54%
West Virginia	48	26.79	43	14.6%	33	23.1%	50	37.9	12	20.2%	23	3.5%	48	11.6%	37	2.0%	43	0.04%
Wisconsin	32	44.92	23	18.6%	30	23.6%	36	53.2	27	17.3%	40	2.5%	10	15.4%	35	2.1%	26	0.19%
Wyoming	41	34.49	50	10.7%	41	21.8%	18	62.2	43	14.3%	41	2.5%	47	11.9%	39	1.9%	42	0.05%
U.S. Average		**48.07**		**19.6%**		**24.9%**		**58.5**		**18.1%**		**3.9%**		**14.3%**		**2.7%**		**0.42%**

THE RANKINGS

State	Online Population		Commercial Internet Domains		Education Technology		Digital Government		High-Tech Jobs		Scientists and Engineers		Patents		Industry R&D Investment		Venture Capital	
	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score
AL	45	25%	43	0.13	48	0.75	34	56.1	28	3.0%	36	0.32%	45	0.15	35	0.7%	34	0.03%
AK	1	52%	24	0.21	1	3.81	3	76.6	44	1.6%	15	0.47%	46	0.14	44	0.1%	44	0.00%
AZ	14	34%	4	0.34	33	1.60	13	68.8	12	5.3%	30	0.35%	16	0.51	23	1.3%	13	0.12%
AR	49	19%	48	0.11	31	1.67	49	41.2	40	1.9%	50	0.20%	50	0.10	42	0.3%	44	0.00%
CA	11	36%	2	0.45	29	1.76	22	62.8	4	6.2%	12	0.51%	7	0.75	6	3.1%	2	0.50%
CO	2	47%	6	0.32	13	2.61	30	58.5	2	7.5%	6	0.56%	12	0.60	15	1.7%	3	0.34%
CT	19	32%	18	0.26	42	1.31	24	61.0	16	4.8%	9	0.54%	2	0.88	5	3.3%	14	0.11%
DE	17	33%	16	0.27	14	2.55	40	50.5	37	1.5%	1	1.07%	1	1.12	2	4.0%	40	0.00%
FL	27	31%	12	0.28	21	2.23	6	72.7	25	3.4%	48	0.23%	27	0.32	25	1.2%	12	0.13%
GA	20	32%	22	0.24	35	1.51	48	44.3	19	4.1%	40	0.30%	29	0.27	38	0.6%	8	0.16%
HI	21	32%	13	0.28	3	3.63	45	46.3	46	1.5%	19	0.46%	47	0.14	50	0.0%	30	0.04%
ID	9	37%	37	0.16	16	2.54	44	48.0	13	3.2%	28	0.36%	6	0.79	8	3.1%	37	0.01%
IL	43	26%	20	0.24	38	1.42	50	39.4	21	4.0%	23	0.38%	14	0.53	17	1.6%	15	0.11%
IN	41	26%	31	0.18	23	1.94	16	67.1	33	2.5%	43	0.29%	24	0.42	12	1.8%	33	0.03%
IA	38	27%	45	0.13	11	2.72	26	59.5	31	2.6%	39	0.31%	30	0.27	21	1.4%	35	0.02%
KS	23	32%	26	0.20	27	1.81	5	72.9	30	2.6%	37	0.32%	37	0.21	30	0.9%	26	0.07%
KY	46	23%	42	0.13	6	2.97	23	62.1	38	2.1%	47	0.24%	41	0.17	39	0.5%	23	0.08%
LA	47	21%	44	0.13	49	0.68	47	45.0	48	1.4%	38	0.31%	38	0.21	49	0.1%	36	0.01%
ME	16	34%	28	0.20	8	2.92	42	48.9	36	1.8%	21	0.41%	44	0.15	28	1.0%	32	0.03%
MD	3	46%	9	0.30	40	1.38	12	69.4	10	5.1%	3	0.85%	23	0.43	33	0.8%	19	0.10%
MA	8	39%	3	0.35	34	1.53	14	67.7	3	7.5%	4	0.81%	4	0.83	3	3.8%	1	0.62%
MI	42	26%	36	0.17	39	1.40	9	70.6	34	2.4%	27	0.36%	10	0.64	1	4.9%	31	0.04%
MN	12	35%	23	0.23	7	2.92	8	71.2	7	5.5%	24	0.38%	9	0.72	11	2.0%	7	0.17%
MS	50	17%	50	0.08	46	0.90	29	58.7	47	1.7%	46	0.26%	48	0.12	45	0.1%	41	0.00%
MO	32	28%	29	0.19	28	1.78	4	73.5	27	3.0%	31	0.34%	33	0.25	19	1.5%	16	0.11%
MT	31	30%	41	0.14	19	2.35	41	49.8	49	1.2%	16	0.46%	36	0.23	47	0.1%	25	0.07%
NE	30	30%	40	0.14	4	3.16	15	67.2	20	4.1%	34	0.33%	39	0.19	41	0.3%	42	0.00%
NV	35	27%	1	0.46	47	0.78	32	56.8	45	1.7%	49	0.23%	35	0.24	37	0.7%	28	0.07%
NH	5	41%	10	0.29	37	1.42	35	55.3	1	7.8%	25	0.37%	8	0.73	18	1.5%	4	0.29%
NJ	24	32%	15	0.28	43	0.99	28	59.1	8	5.5%	5	0.56%	5	0.81	7	3.1%	11	0.14%
NM	22	32%	34	0.17	44	0.96	37	52.4	22	3.3%	2	1.00%	26	0.33	4	3.6%	44	0.00%
NY	36	27%	14	0.28	41	1.36	25	60.1	17	4.6%	10	0.53%	11	0.62	20	1.5%	24	0.07%
NC	40	26%	30	0.19	24	1.93	33	56.5	23	3.6%	22	0.40%	25	0.34	27	1.2%	10	0.15%
ND	33	28%	49	0.09	15	2.55	39	50.9	39	1.6%	18	0.46%	43	0.16	48	0.1%	44	0.00%
OH	28	30%	27	0.20	36	1.49	27	59.4	32	2.7%	26	0.37%	18	0.50	22	1.4%	29	0.06%
OK	39	26%	35	0.17	50	0.42	38	52.1	29	3.0%	35	0.32%	28	0.30	40	0.4%	38	0.01%
OR	13	34%	11	0.29	9	2.82	18	65.7	9	4.8%	20	0.42%	19	0.48	29	0.9%	18	0.11%
PA	34	27%	25	0.20	45	0.93	10	70.4	26	3.3%	17	0.46%	17	0.50	16	1.7%	17	0.11%
RI	25	31%	17	0.26	32	1.61	43	48.2	24	3.6%	8	0.55%	15	0.52	10	2.1%	43	0.00%
SC	37	27%	38	0.15	30	1.75	21	63.4	41	2.2%	45	0.28%	32	0.26	31	0.9%	20	0.10%
SD	44	25%	47	0.11	17	2.45	7	71.5	14	3.4%	42	0.30%	49	0.12	46	0.1%	44	0.00%
TN	26	31%	33	0.17	20	2.34	20	63.7	42	2.0%	29	0.35%	34	0.25	34	0.7%	6	0.18%
TX	18	33%	21	0.24	25	1.93	31	58.2	11	4.8%	33	0.34%	22	0.45	26	1.2%	9	0.16%
UT	4	46%	5	0.32	5	3.00	19	65.7	15	4.5%	11	0.52%	13	0.59	14	1.8%	22	0.09%
VT	15	34%	19	0.25	12	2.64	36	55.3	5	5.2%	7	0.55%	3	0.86	13	1.8%	39	0.01%
VA	7	40%	7	0.31	26	1.88	17	67.0	6	5.2%	13	0.50%	31	0.26	32	0.8%	21	0.10%
WA	6	41%	8	0.30	2	3.79	1	79.7	18	4.1%	14	0.49%	21	0.46	9	2.9%	5	0.24%
WV	48	20%	46	0.11	18	2.38	46	46.1	43	1.8%	41	0.30%	40	0.18	36	0.7%	44	0.00%
WI	29	30%	32	0.18	22	1.99	2	79.5	35	2.5%	44	0.29%	20	0.47	24	1.3%	27	0.07%
WY	10	36%	39	0.15	10	2.75	11	69.8	50	1.0%	32	0.34%	42	0.17	43	0.2%	44	0.00%
		31%		**0.26**		**2.0**		**60.4**		**4.5%**		**0.42%**		**0.48**		**1.8%**		**0.17%**

The two states that are farthest along the path to the New Economy are Massachusetts and California. Both are quintessential high-tech states. Massachusetts boasts a concentration of software, hardware, and biotech firms supported by world class universities such as MIT and Harvard in the Route 128 region around Boston. California's Silicon Valley has become synonymous with innovation and technology, while for sheer number of technology companies, Southern California is a force to be reckoned with. But they and the other top ten New Economy states (Colorado, Washington, Connecticut, Utah, New Hampshire, New Jersey, Delaware, and Arizona) have more in common than just high-tech firms. They tend to have a high concentration of managers, professionals, and college-educated residents working in "knowledge jobs" (jobs that require at least a two-year degree). With one or two exceptions, their manufacturers tend to be more geared toward global markets, both in terms of export orientation and the amount of foreign direct investment. Most are at the forefront of the IT and Internet revolutions, with a large share of their institutions and residents embracing the digital economy. Most have a solid "innovation infrastructure" that fosters and supports technological innovation. Many have experienced high levels of domestic in-migration of highly mobile, highly skilled knowledge workers seeking good employment opportunities coupled with a good quality of life. Moreover, while they tend to be richer states (there is a positive correlation of 0.71 between their rankings and their per capita income), wealth is not a simple proxy for advancement toward the New Economy. Some states with higher incomes lag behind in their scores (for example, New York, Illinois, Michigan), while other states with lower incomes do relatively well (such as New Mexico, Utah, and Arizona).

Finally, the top-ranked economies don't score well simply because they have found ways to get the right mix of companies, individuals, and institutions. They also score well because they tend to adapt quickly. A high rate of "creative destruction"—the shedding of old practices while embracing the new—is the key to economic transformation in the private, public, and non-profit sectors. In fact, the degree to which businesses close in a state is positively correlated with total New Economy scores and employment growth from 1986 to 1996 (0.35 and 0.30, respectively).

The two states that are still most firmly rooted in the old economy are Mississippi and Arkansas. Other states with low scores include West Virginia, Louisiana, Montana, North Dakota, Alabama, South Dakota, Iowa, and Wyoming. Historically, these and other Southern and Plains states lagged behind in industrialization, and many have made limited investments in education and R&D. Their economies have often depended on natural resources or on mass production manufacturing, and have tended to rely on low costs rather than innovative capacity to gain advantage. But innovative capacity (derived through universities, R&D investments, scientists and engineers, and entrepreneurial drive) is increasingly what drives competitive success in the New Economy.

While lower-ranking states face challenges, they can also take advantage of new opportunities. The IT revolution gives companies and individuals more geographical freedom, making it easier for businesses to relocate, or start up and grow, in less densely populated states, farther away from existing agglomerations of industry and commerce. But a key policy challenge will be to find a way to extend advanced telecommunications infrastructure to these places.

Regionally, the New Economy has taken hold most strongly in the Northeast, the mid-Atlantic, the Mountain West, and the Pacific regions; 17 of the top 20 states are in these four regions. (The three exceptions are Minnesota, Texas, and Florida.) In contrast, 17 of the 20 lowest-ranking states are in the Midwest, Great Plains, and the South.

Given some states' reputations as technology-based, New Economy states, their scores seem surprising at first. For example, Georgia and North Carolina rank 25th and 30th, respectively, in spite of the fact that the regions around Research Triangle Park and Atlanta boast top universities, a highly educated workforce, cutting-edge technology companies, and global connections. In both cases, however, the parts of the state outside these metropolitan regions are more rooted in the old economy—with more jobs in traditional manufacturing, agriculture, and lower-skilled services; a less educated workforce; and a less developed innovation infrastructure. As these examples reveal, most state economies are in fact a composite of many regional economies that differ in the degree to which they have adapted to the New Economy.

How closely do high scores correlate with economic growth? States that score higher appear to create jobs no faster than states that score lower. Between 1991 and 1996, there was in fact a slightly negative correlation (-0.04) between employment growth and New Economy score.

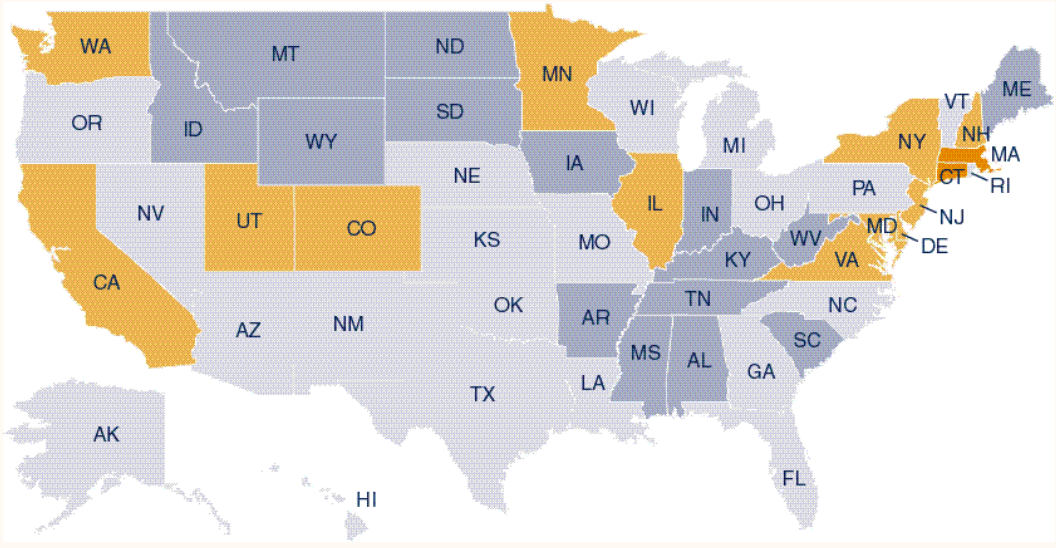
However, its not clear that job growth is the true measure of a state's economic well-being. (Rapidly growing states are likely to experience rising home prices, traffic congestion, declining open space, and increasing environmental pollution, among other negative impacts.) Change in per-capita income is a more accurate measure of the economic well-being of the residents of a state. Higher New Economy scores were positively (though weakly) correlated with growth in state per-capita incomes between 1992 and 1997 (0.13). It is possible that this relationship would be even stronger if inflation-adjusted per-capita income growth data were available, since nominal measures may overstate income growth in some faster growing states with lower overall scores, particularly those in the South. In addition, many high scoring states, such as California, Massachusetts, Washington, Colorado, and Connecticut, suffered economic slowdowns in the early 1990s due to defense downsizing. As the New Economy continues to take hold over the next decade, higher scoring states can be expected to experience faster per-capita economic income growth than lower scoring states.

KNOWLEDGE JOBS

In the old economy, states prospered by having workers who were skilled with their hands and who could reliably work in repetitive and often physically demanding jobs. In the New Economy, states will prosper if their workers are good with their minds, because knowledge and information-based jobs are driving the New Economy. Many of these jobs are in offices. They tend to be managerial, professional, and technical positions held by individuals with at least two years of college. Moreover, skill requirements are going up in most industries and occupations, not just the high-tech sector.

The "knowledge jobs" indicators in this section measure three things: 1) the percentage of the workforce working in offices; 2) the share of the workforce employed in managerial, professional, and technical positions; and 3) the education level of the workforce.

Aggregated Knowledge Jobs Scores



Rank	State	Score
1	Massachusetts	11.48
2	Connecticut	9.94
3	Colorado	9.08
4	Delaware	8.74
5	Virginia	8.15
6	New York	8.15
7	Minnesota	8.11
8	Maryland	8.08
9	Illinois	8.07
10	California	7.95
11	Washington	7.95
12	New Jersey	7.53
13	New Hampshire	7.43
14	Utah	7.23
15	Arizona	7.02
16	Nebraska	6.81
17	Alaska	6.78
18	Florida	6.75
19	Rhode Island	6.73
20	Kansas	6.65
21	Hawaii	6.57
22	Oregon	6.21
23	New Mexico	6.13
24	Pennsylvania	5.87
25	Georgia	5.83
26	Missouri	5.57
27	Ohio	5.57
28	Vermont	5.49
29	Oklahoma	5.34
30	Wisconsin	5.32
31	North Carolina	5.23
32	Texas	5.17
33	Louisiana	5.01
34	Michigan	4.96
35	Nevada	4.85
36	Tennessee	4.75
37	Maine	4.73
38	Iowa	4.73
39	South Carolina	4.32
40	Wyoming	4.26
41	Idaho	4.22
42	Montana	4.19
43	Indiana	4.07
44	Alabama	3.97
45	North Dakota	3.85
46	South Dakota	3.74
47	Kentucky	3.22
48	Mississippi	2.93
49	Arkansas	2.70
50	West Virginia	2.56
	U.S. Average	6.00

Source: Authors' calculations based on the states' scores in three indicators—office jobs; managerial, professional, and technical jobs; and workforce education.

OFFICE JOBS

Jobs in offices as a share of the total number of jobs in each state.

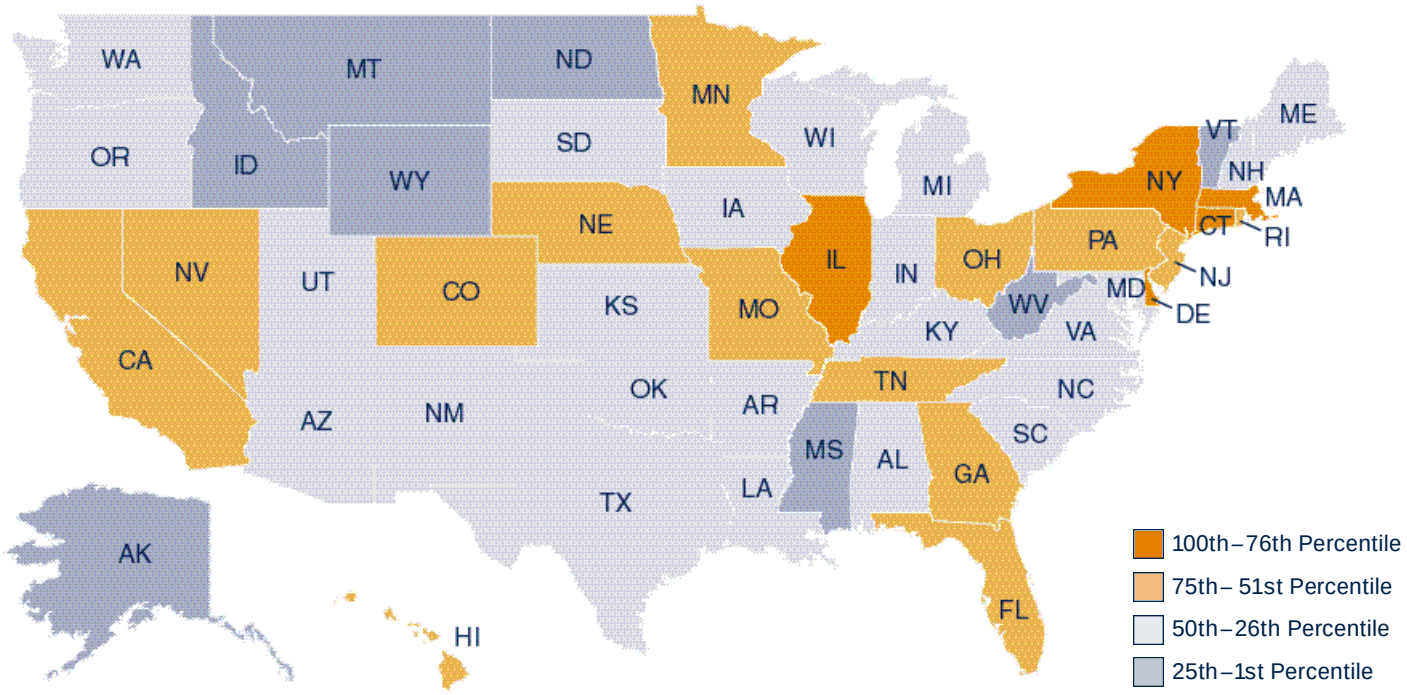
Why Is This Important? The New Economy is a services, high-tech, and office economy. This is not to say that mass production manufacturing or agriculture are unimportant, or that the United States produces fewer manufactured goods or food. In fact, we produce more than ever. But higher rates of productivity growth in manufacturing and agriculture have meant that almost 93 million workers (80 percent of the U.S. workforce) do not spend their days making things—instead, they work in jobs that require them to *move* things, process or generate information, or provide services to people. The tools most Americans use are now more likely to be the fax, copier, telephone, or personal computer than the riveter or lathe. As competitive advantage increasingly stems from customization, design quality, and customer service, the office has become the factory floor of the New Economy: it is where an increasing share of the value added is produced.

The Rankings: States with a large share of jobs in offices tend to have more than their share of financial services, high-tech, or corporate or regional headquarters. States with relatively few jobs in offices tend to have economies rooted in agriculture, natural resources, or branch-plant manufacturing.

The top five:		Percentage of jobs in offices:
1	Delaware	26.7%
2	Massachusetts	26.4%
3	New York	26.4%
4	Connecticut	24.3%
5	Illinois	22.9%
	U.S. Average	19.6%

Source: Cognetics, 1997 data.

"The tools most Americans use are now more likely to be the fax, copier, telephone, or personal computer than the riveter or lathe."



MANAGERIAL, PROFESSIONAL, AND TECHNICAL JOBS

Managers, professionals, and technicians as a share of the total workforce.

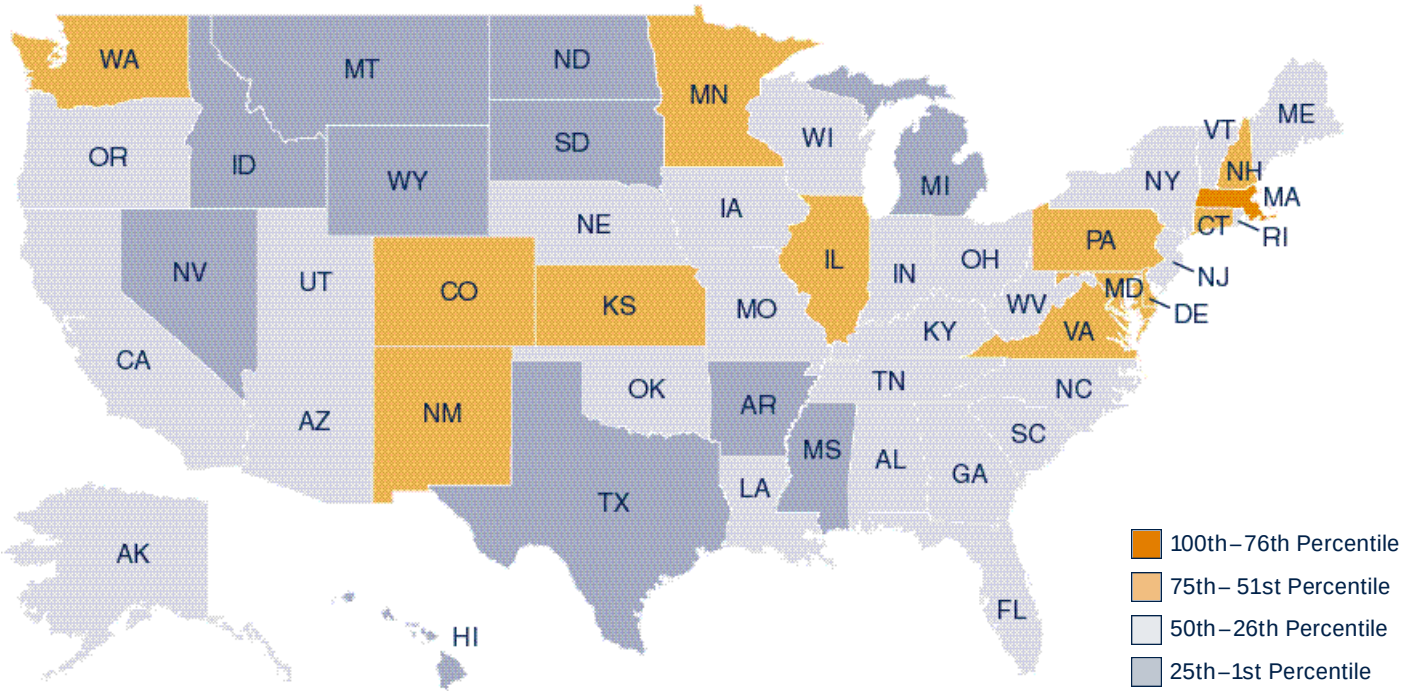
Why Is This Important? The rise of new industries has meant the rise of new jobs, while new technology and new ways of organizing work have transformed many existing jobs. Both trends have changed the occupational mix in America. In particular, managerial and professional jobs have increased as a share of total employment from 22 percent in 1979 to 28.4 percent in 1995. These workers include, among others, managers, engineers and scientists, health professionals, lawyers, teachers, accountants, bankers, consultants, and engineering technicians.[9]

The top five:		Percentage of jobs held by managers, professionals, and technicians:
1	Massachusetts	34.9%
2	Connecticut	30.3%
3	Virginia	29.6%
4	Colorado	27.9%
5	Delaware	27.8%
	U.S. Average	24.9%

Source: Bureau of Labor Statistics, 1997 data.

The Rankings: States with high rankings tend to have a large number of corporate or regional headquarters. In Connecticut, for example, Hartford is home to insurance and defense headquarters, while southwestern Connecticut is dominated by corporate headquarters (such as Pitney Bowes), financial services, and high-tech jobs—many of which have moved out of New York City. Some states that score well in the office jobs indicator (such as Florida, Nevada, New Jersey, and Rhode Island) don't do as well on managerial and professional jobs, suggesting many of the office jobs are "back office" processing jobs (for example, insurance and banking in Rhode Island). In contrast, states such as Kansas, New Mexico, Virginia, and Washington have larger agricultural and manufacturing industries, but score well because they have headquarters and/or government jobs which employ a large number of managers.

" Managerial and professional jobs have increased as a share of total employment from 22 percent in 1979 to 28.4 percent in 1995."



WORKFORCE EDUCATION

A weighted measure of the educational attainment of the workforce (advanced degrees, bachelor's degrees, associate's degrees, or some college course work).[10]

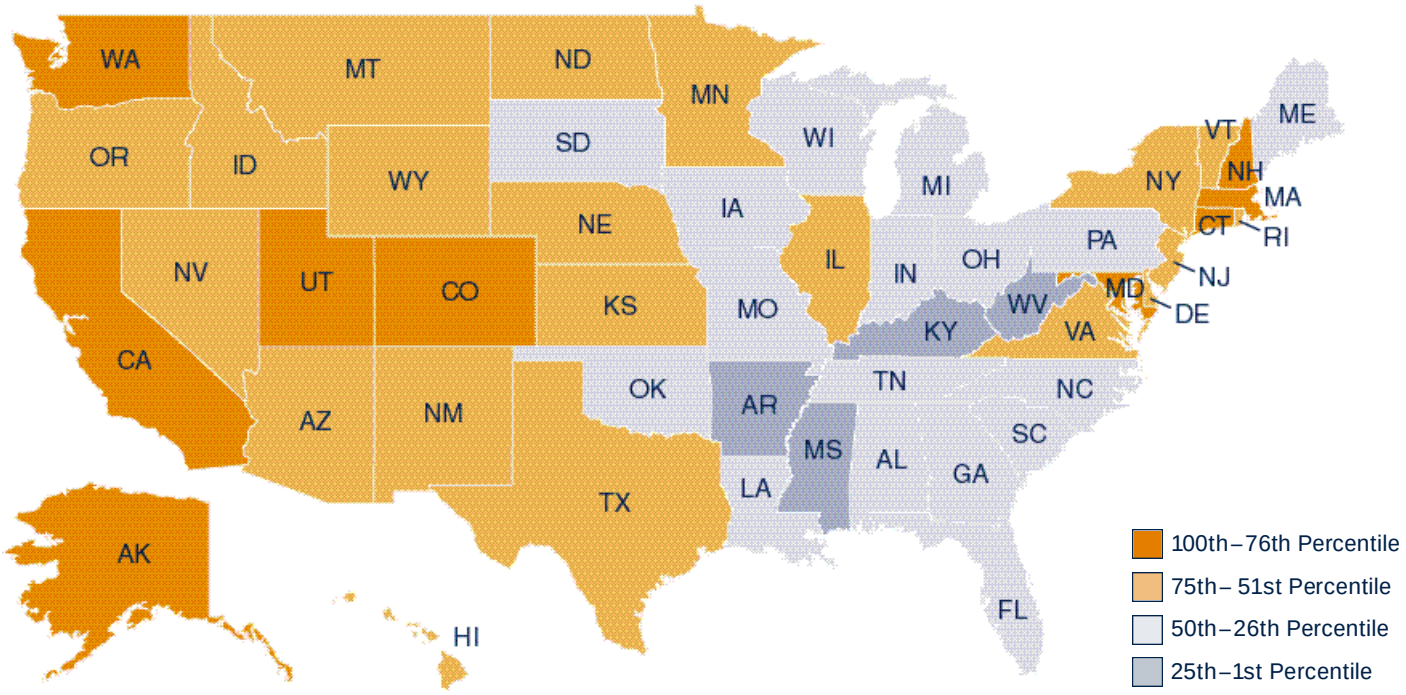
Why Is This Important? In the New Economy, which puts a premium on speed and flexibility, an educated workforce is critical to increasing productivity and fostering innovation. In fact, knowledge-based jobs (those requiring post-secondary, vocational, or higher education) grew from around 27 percent of total employment in the United States in 1983 to 31 percent in 1993, and are expected to grow to 33 percent in 2006. States with a more educated workforce are better positioned to capitalize on this trend. For individuals, educational attainment equals opportunity. Since the 1970s, those with a college degree have seen their wages go up, while those with only a high school degree or less have seen their wages fall.

"For individuals, educational attainment equals opportunity."

The Rankings: Demographic studies have shown that highly educated individuals are more geographically mobile than less-educated individuals.[11] As a result, states that have attracted large numbers of people from other states generally have a more educated workforce. (The top five states are all in the West.) Similarly, states that have strong education systems, particularly higher education (such as Connecticut, Massachusetts, Minnesota, and Virginia), also score well. Meanwhile, many states with a less educated workforce have high net out-migration (for example, West Virginia, Pennsylvania, and South Dakota), or have historically invested less in education (like Mississippi, Louisiana, and Alabama).

The top five:		Composite score:
1	Colorado	75.9
2	Alaska	73.3
3	Utah	72.4
4	Washington	70.8
5	California	69.7
	U.S. Average	58.5

Source: U.S. Census, 1990 data.



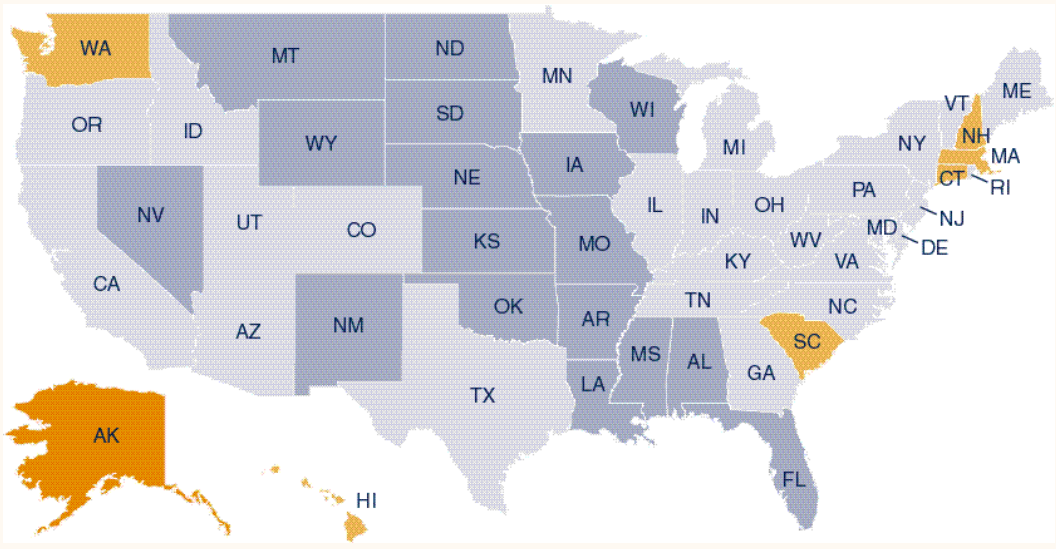
GLOBALIZATION

While the old economy was national in its scope, the New Economy is global. It is estimated that more than $21 trillion of the world economy's combined output will be open to global competition in 2000, up from $4 trillion in 1995.[12] This growth will be driven by global capital markets, reduced economic and trade barriers, and—perhaps most importantly—technological change, which makes it easier to locate enterprises and sell products and services almost anywhere.

When the old economy emerged in the 1930s, the winners were states whose businesses sold to national markets, as opposed to local or regional ones. At the beginning of the 21st century, the winners will be the states whose businesses are most integrated into the world economy. Despite the current slowdown in many nations, a global orientation ensures expanding markets for a state's industries. Since the workforce of globally oriented firms also earns more than other firms, a global orientation means that a state's workforce will have a higher standard of living.

The globalization indicators in this section measure two things: 1) the extent to which the state's manufacturing workforce is employed producing goods for export[13] and 2) the share of the workforce employed by foreign-owned companies.

Aggregated Globalization Scores



Rank	State	Score
1	Alaska	11.30
2	Hawaii	8.90
3	South Carolina	8.10
4	Connecticut	8.09
5	Massachusetts	8.00
6	Washington	7.94
7	New Hampshire	7.52
8	North Carolina	7.31
9	New Jersey	7.03
10	Texas	6.86
11	Maine	6.82
12	Delaware	6.73
13	Ohio	6.68
14	Tennessee	6.61
15	Kentucky	6.52
16	Georgia	6.51
17	California	6.49
18	New York	6.41
19	Indiana	6.36
20	Illinois	6.30
21	Pennsylvania	6.30
22	Rhode Island	6.29
23	West Virginia	6.27
24	Michigan	6.19
25	Oregon	6.04
26	Minnesota	5.90
27	Colorado	5.88
28	Arizona	5.80
29	Virginia	5.78
30	Utah	5.73
31	Vermont	5.72
32	Idaho	5.50
33	Maryland	5.49
34	Louisiana	5.28
35	Kansas	5.26
36	Alabama	5.16
37	Nevada	5.13
38	Missouri	5.06
39	Wisconsin	5.05
40	Arkansas	4.95
41	Oklahoma	4.68
42	Iowa	4.53
43	Wyoming	4.52
44	New Mexico	4.26
45	South Dakota	4.10
46	Nebraska	4.09
47	Florida	3.93
48	Mississippi	3.80
49	Montana	3.42
50	North Dakota	3.40
	U.S. Average	6.00

Source: Authors' calculations based on the states' scores in two indicators—export focus of manufacturing and foreign direct investment.

EXPORT FOCUS OF MANUFACTURING

The share of jobs in manufacturing companies dependent upon exports.

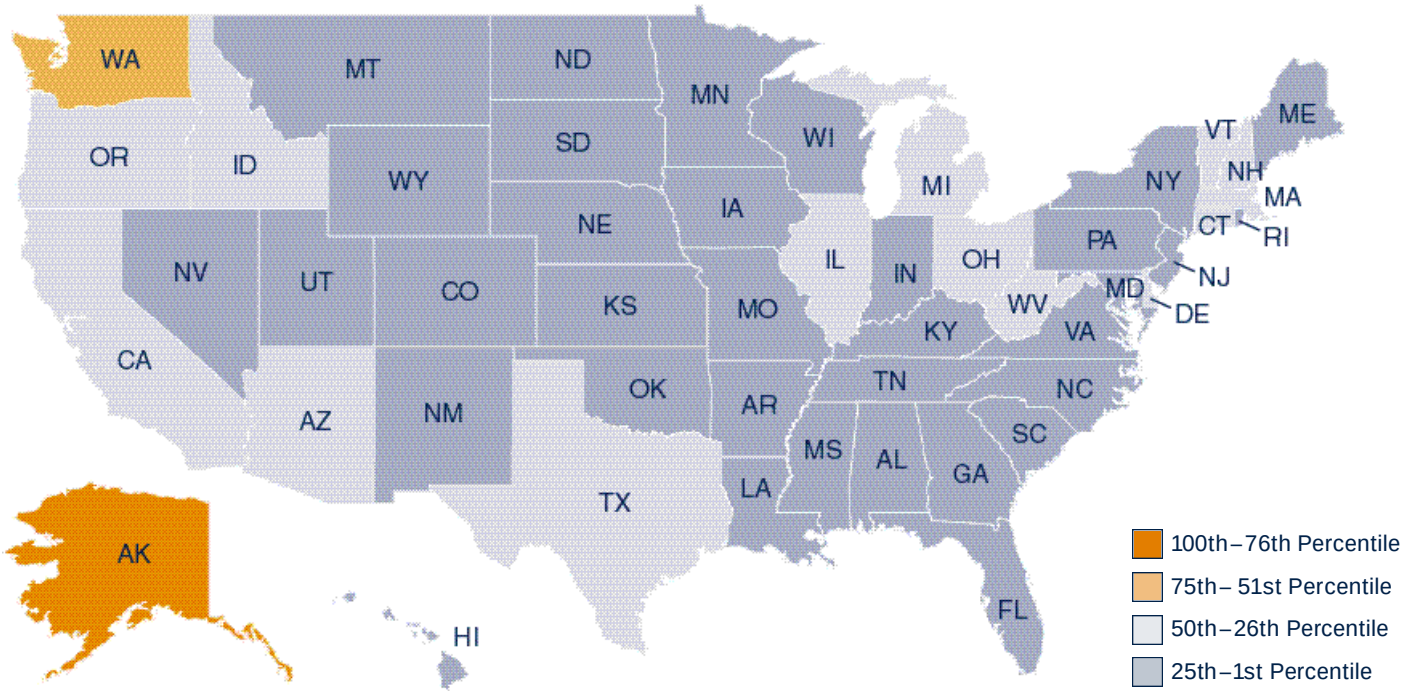
Why Is This Important? Trade has become an integral part of the U.S. and world economies. The combined total of U.S. exports and imports has increased from less than 5.5 percent of GDP in 1950, to 11 percent in 1970, to 25 percent in 1997. Moreover, the United States is increasingly specializing in more complex, higher value-added goods and services, which is reflected in the fact that the average weight of a dollar's worth of American exports is less than half of what it was in 1970. That focus on higher value-added goods and services is benefitting many American workers. Workers employed in export-oriented firms earn 10 percent more than workers in similar firms that export less, or that don't export at all.[14] As a result, states whose companies are not global traders will be left behind, as will their workforces.

The Rankings: There are three types of states with high rankings in the export orientation indicator: states such as Alaska and Idaho, which export processed natural resources (enduring old economy strengths); states such as Massachusetts, Texas, and California, which export high-tech equipment; and states such as Michigan, Ohio, Illinois, Delaware, and West Virginia, which produce high value-added, durable manufactured goods or chemicals. Some states, such as Oregon, Washington, and New Hampshire, have high rankings because of both high-tech and natural resource exports. In contrast, states with low rankings tend to have more traditional manufacturing industries that compete directly with lower-wage nations, making it more difficult to export (as in Mississippi, Virginia, and Arkansas).

"Workers employed in export-oriented firms earn 10 percent more than workers in similar firms that export less."

The top five:		Percentage of manufacturing jobs dependent on exports:
1	Alaska	49.3%
2	Washington	31.2%
3	Connecticut	24.2%
4	Texas	23.9%
5	Massachusetts	22.7%
	U.S. Average	18.1%

Source: U.S. Census, 1992 data.



FOREIGN DIRECT INVESTMENT

The percentage of each state's workforce employed by foreign companies.

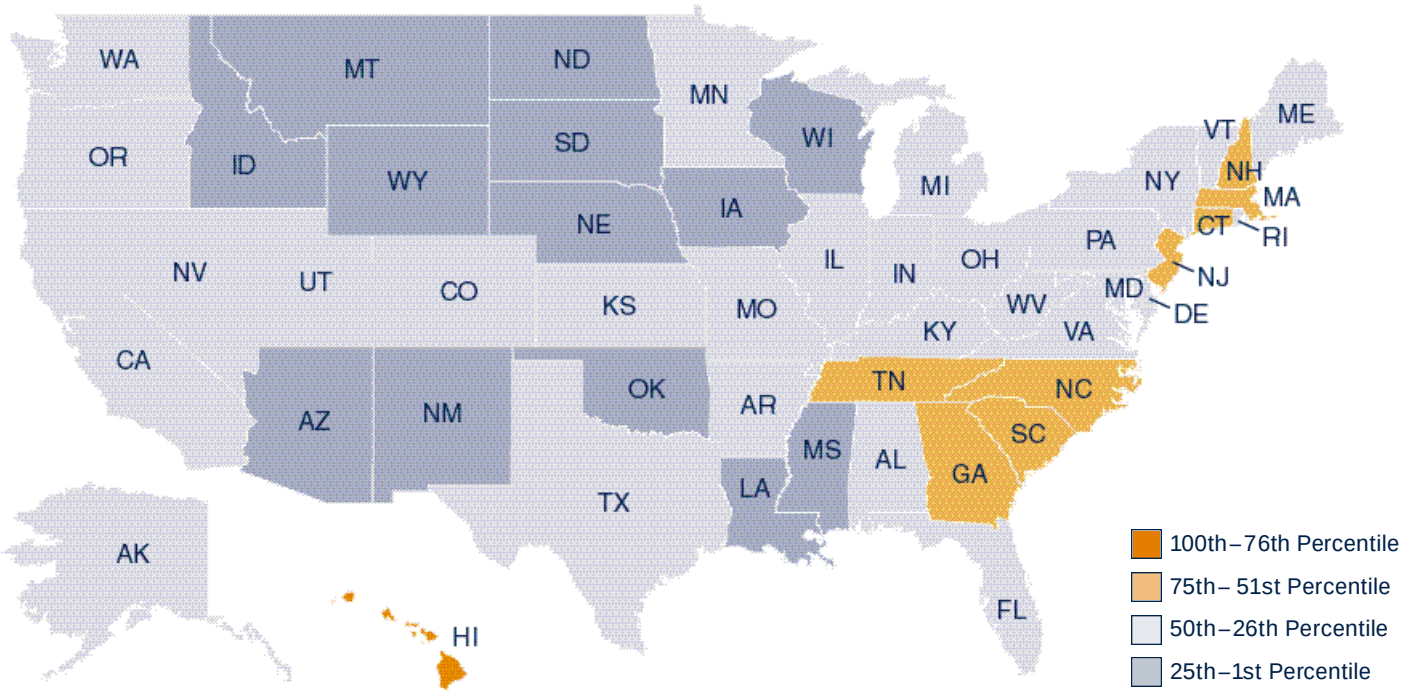
Why Is This Important? Foreign direct investment (FDI) includes significant investments by foreign companies, such as construction of production facilities or ownership stakes taken in U.S. companies. FDI not only creates new jobs, it can also lead to an infusion of innovative technologies, management strategies, and workforce practices. For example, some have argued that Japanese automobile plants in the Midwest spurred American companies to adopt more modernized manufacturing practices.[15] Foreign direct investment has been on the rise in the United States and around the world since the 1970s. In the United States, incoming FDI has grown from $134 billion for all of the 1970s to $312 billion in just the first half of the 1990s (in constant 1992 dollars), and from .32 percent of GDP to .69 percent.

"Incoming FDI has grown from $134 billion for all of the 1970s to $312 billion in just the first half of the 1990s (in constant 1992 dollars)."

The Rankings: With the exception of Hawaii, which has the top score because of its proximity to Asia, most states that score well are on the East Coast. This is in large part because most FDI comes from Europe and Canada. In 1996, Europe accounted for two-thirds of all FDI in the United States, with Asia accounting for less than 15 percent. European companies have invested in East Coast states in part because of their proximity to their corporate headquarters, and because of the access to densely populated markets.

The top five:		Percentage of workforce employed by foreign companies:
1	Hawaii	8.8%
2	South Carolina	6.7%
3	North Carolina	6.2%
4	Massachusetts	5.4%
5	New Jersey	5.3%
	U.S. Average	3.9%

Source: Bureau of Economic Analysis, 1996-1997 data.



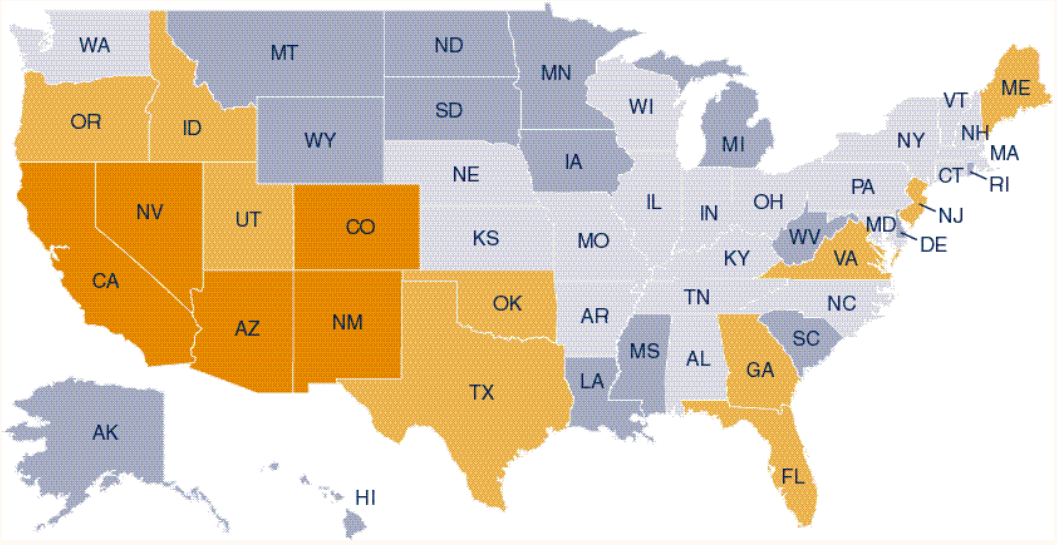
ECONOMIC DYNAMISM

Rank	State	Score
1	Nevada	10.98
2	California	9.56
3	Colorado	9.48
4	Arizona	9.29
5	New Mexico	9.22
6	Utah	8.55
7	Oklahoma	8.31
8	Florida	8.00
9	New Jersey	7.86
10	Texas	7.77
11	Virginia	7.64
12	Oregon	7.63
13	Maine	7.36
14	Georgia	7.30
15	Idaho	7.02
16	Massachusetts	6.84
17	Connecticut	6.84
18	Kentucky	6.82
19	New Hampshire	6.75
20	New York	6.74
21	Washington	6.37
22	Illinois	6.36
23	Tennessee	6.16
24	Arkansas	6.11
25	Maryland	6.10
26	Vermont	5.90
27	Wisconsin	5.78
28	Kansas	5.77
29	Missouri	5.67
30	Ohio	5.45
31	Pennsylvania	5.37
32	North Carolina	5.32
33	Alabama	5.14
34	Indiana	5.05
35	Nebraska	4.82
36	Delaware	4.40
37	Mississippi	4.38
38	Louisiana	4.30
39	North Dakota	4.24
40	Minnesota	4.06
41	Michigan	4.04
42	Rhode Island	4.02
43	South Carolina	3.89
44	South Dakota	3.50
45	Hawaii	3.24
46	Wyoming	3.12
47	West Virginia	3.12
48	Alaska	2.84
49	Montana	2.81
50	Iowa	2.72
	U.S. Average	6.00

The old economy was epitomized by large companies facing limited competition in stable, cost-based markets. The New Economy is all about economic dynamism and competition—epitomized by the fast-growing, entrepreneurial companies that are one of its hallmarks. The ability of firms to innovate and get to market faster is becoming a more important determinant of competitive advantage. Likewise, the ability of state economies to rejuvenate themselves through the formation of new, innovative companies is a key to determining their economic vitality. This is reflected in the fact that the number of jobs in "gazelle" firms in 1997 (companies with sales growth of 20 percent or more for four straight years) was the indicator most closely correlated with growth in overall employment in the previous ten years (a correlation of 0.52). It was also closely correlated (0.31) with growth in per-employee gross state product (GSP).

The dynamism and competition indicators in this section measure three things: 1) the share of jobs in fast growing gazelle firms; 2) the degree of job churning (which is a product of new business start-ups, and existing business failures); and 3) the value of companies' IPOs.

Aggregated Economic Dynamism Scores



Source: Authors' calculations based on the states' scores in three indicators—jobs in gazelle companies, job churning, and IPOs.

"GAZELLE" JOBS

Jobs in gazelle companies (companies with annual sales revenue that has grown 20 percent or more for four straight years) as a share of total employment.

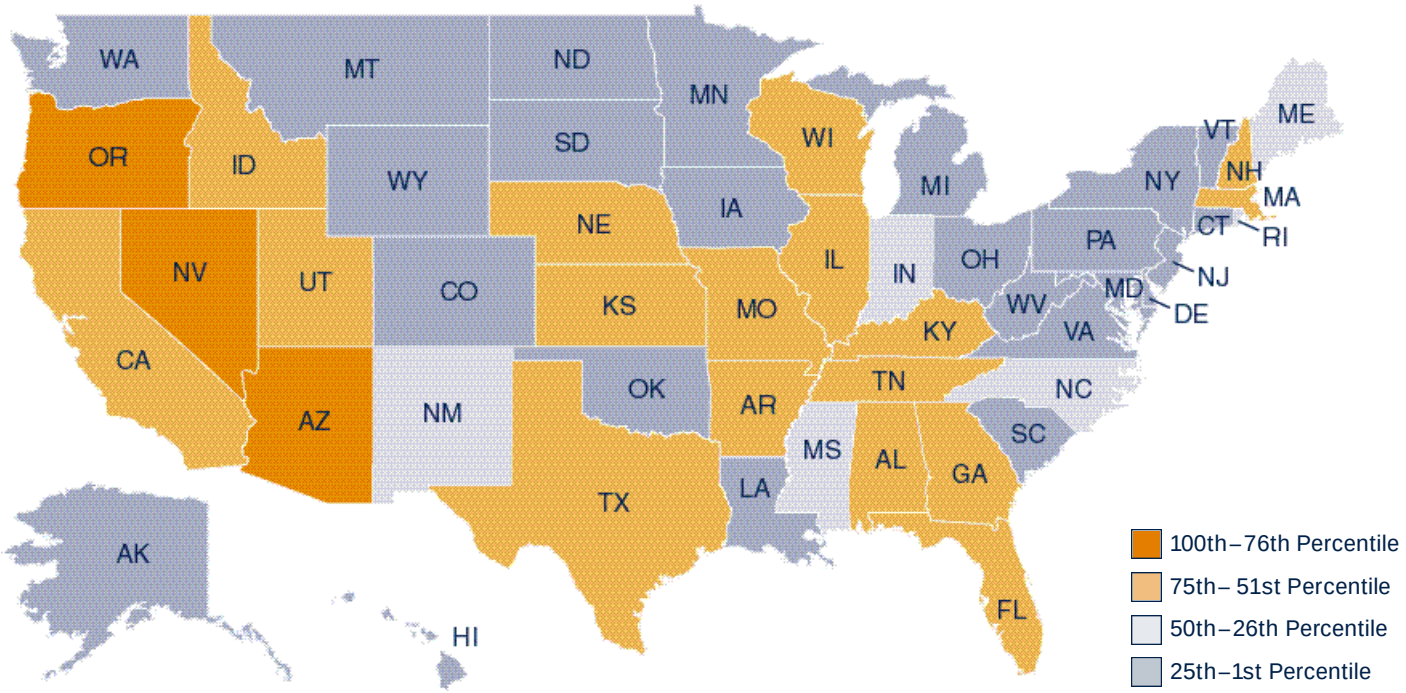
Why Is This Important? The degree to which a state's economy is composed of new, rapidly growing firms known as gazelles is indicative of the degree to which the state's economy is dynamic and adaptive, which is a key driver of the New Economy. It is not small firms per se that are the key, it is the relatively small number of fast-growing firms of all sizes that account for the lion's share of new jobs created in the 1990s. Between 1993 and 1996, the number of gazelles grew 40 percent, to over 355,000. Those companies were responsible for creating 70 percent of the new jobs added to the economy in that period.

"Gazelles were responsible for creating 70 percent of the net new jobs in America between 1993 and 1996."

The Rankings: High ranking states tend to be Western and Southern states experiencing high rates of overall job growth. But some states with slower overall growth rates, such as New Hampshire, Missouri, and Wisconsin, also have large numbers of gazelle firms. For the most part, agricultural and older industrial states, and states whose economies are dominated by larger, more established firms, such as New York, Michigan, Delaware, and Ohio, produce fewer gazelles.

The top five:		Jobs in fast-growing companies as a percentage of total employment:
1	Nevada	19.3%
2	Oregon	17.8%
3	Arizona	17.7%
4	Utah	16.7%
5	New Hampshire	16.2%
	U.S. Average	14.3%

Source: Cognetics, 1997 data.



JOB CHURNING

The number of new start-ups and business failures, combined, as a share of all companies in each state.

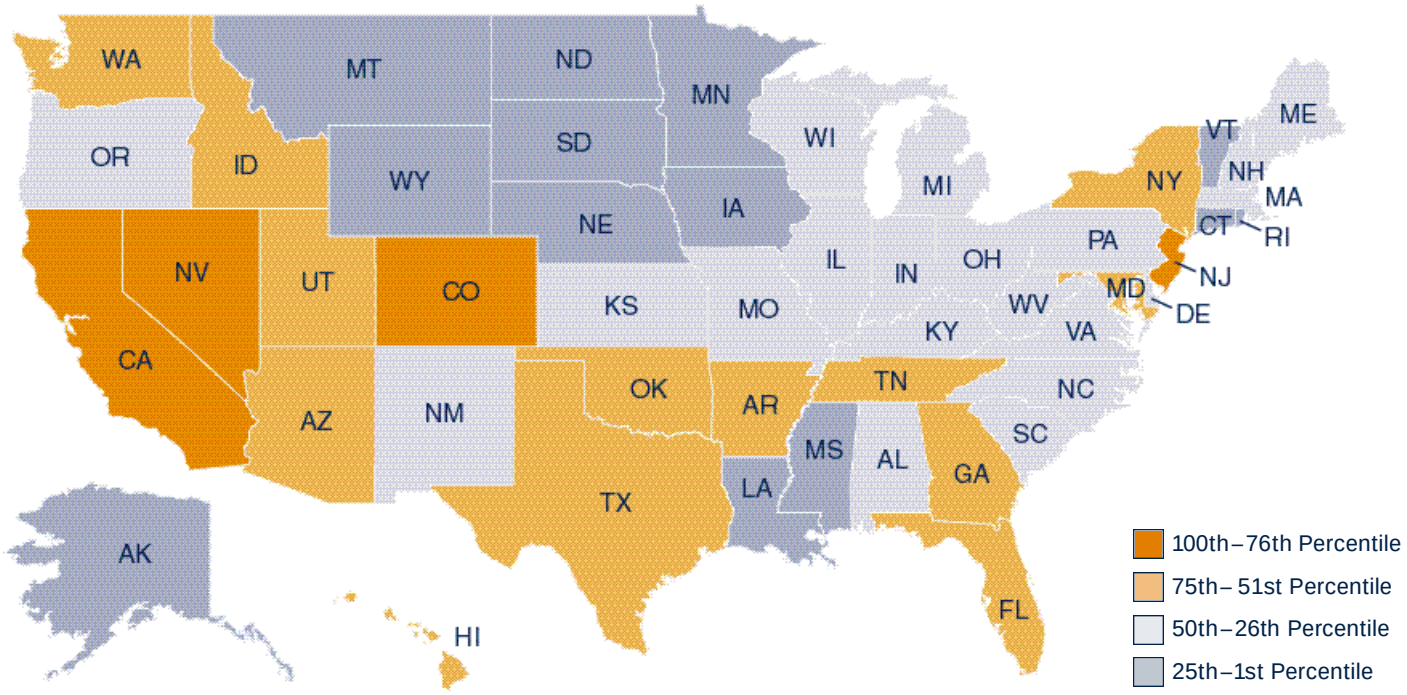
Why Is This Important? Steady growth in employment masks the constant churning of job creation and destruction, as less innovative and efficient companies downsize or go out of business and more innovative and efficient companies grow and take their place. A total of 3.5 million private-sector jobs were added to the U.S. economy between 1994 and 1995, but that was after new firms had created 5.7 million jobs, failing firms had eliminated 4.5 million jobs, expanding firms had added 10.5 million jobs, and contracting firms had eliminated 8.2 million others. This churning has accelerated as the number of new start-ups and existing business failures per year has grown. While such turbulence increases the economic risk faced by workers, companies, and even regions, it is also a major driver of economic innovation and growth.

"While [churn] increases the economic risk faced by workers, companies, and even regions, it is also a major driver of economic innovation and growth."

The Rankings: Some fast-growing states (like Nevada, Colorado, Arizona, and Utah) have seen a great deal of churning. In part, this is because fast-growing economies produce more start-ups, especially in locally focused industries (such as restaurants, dry cleaning, or accounting). But a high churn rate also reflects a dynamism that leads to the death of old, outmoded firms and the creation of innovative new companies that sell outside the state. States with slower overall growth rates, but with dynamic business sectors, such as New Jersey, Maryland, and California, also see high rates of churn.

The top five:		Business start-ups and failures as a percentage of total companies:
1	Nevada	4.1%
2	California	3.6%
3	Colorado	3.5%
4	New Jersey	3.4%
5	Arizona	3.3%
	U.S. Average[16]	2.7%

Source: Dun & Bradstreet, 1995-1996 data.



INITIAL PUBLIC OFFERINGS

The value of the initial public stock offerings of companies as a share of gross state product.

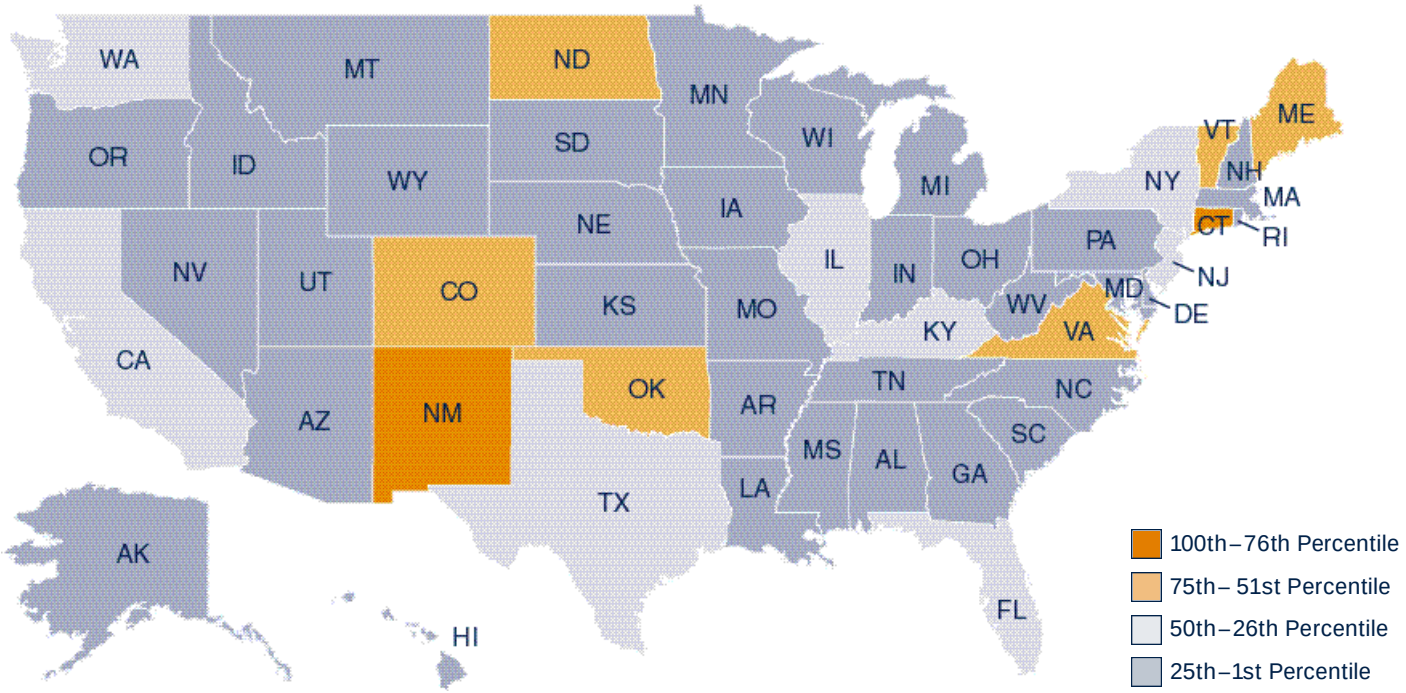
Why Is This Important? In the last two decades, financial markets have embraced entrepreneurial dynamism. The number of initial public offerings (first rounds of companies' stock sold when they make their debut in public markets) has risen by 50 percent between the 1960s and the 1990s. IPOs are important because they indicate the degree to which an economy is producing companies that have long-term and substantial growth potential.

The Rankings: Some states score well on the IPO indicator because they are producing a large number of start-ups with growth potential (such as California, Virginia, Colorado, Florida, and Texas). Others are helped by the fact that they are close to major financial centers (as in Connecticut, New Jersey, New York, and Illinois). Still others score well for reasons somewhat particular to the state (for example, New Mexico, Maine, Oklahoma, North Dakota).

"The number of initial public offerings has risen by 50 percent between the 1960s and the 1990s."

The top five:		The value of IPOs as a percentage of gross state product:
1	New Mexico	1.55%
2	Connecticut	1.22%
3	Oklahoma	1.06%
4	Colorado	1.05%
5	Maine	1.04%
	U.S. Average	0.42%

Source: Hale & Dorr, 1997 data.



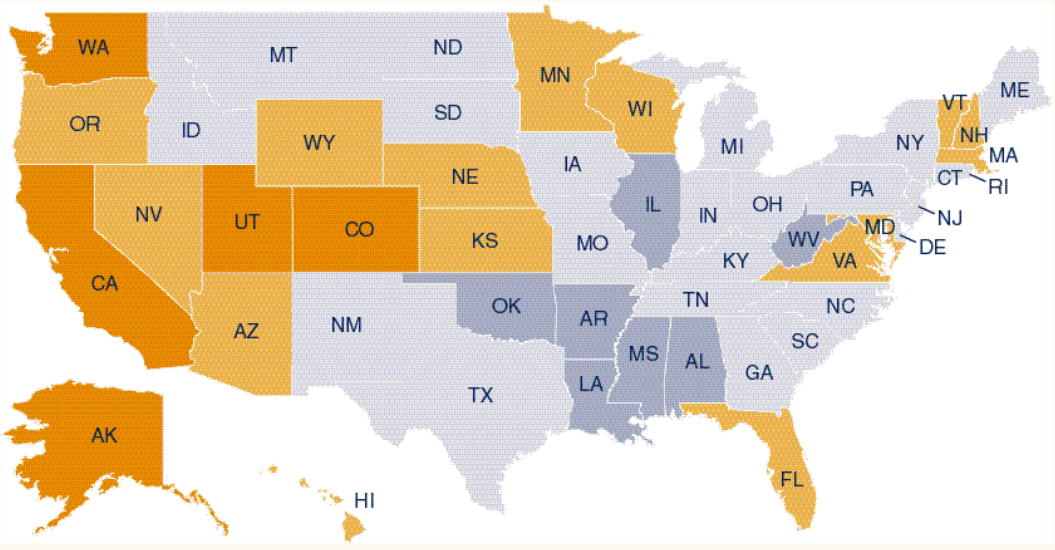
THE DIGITAL ECONOMY

Rank	State	Score
1	Alaska	12.19
2	Washington	11.96
3	Utah	10.77
4	Colorado	9.73
5	California	9.34
6	Maryland	9.21
7	Massachusetts	8.77
8	Virginia	8.76
9	Minnesota	8.62
10	Oregon	8.53
11	Arizona	8.22
12	Florida	8.09
13	Wyoming	7.46
14	Wisconsin	7.22
15	New Hampshire	7.11
16	Hawaii	6.99
17	Vermont	6.90
18	Kansas	6.88
19	Nebraska	6.71
20	Nevada	6.63
21	Delaware	6.41
22	Missouri	6.20
23	Texas	6.13
24	Tennessee	6.01
25	Connecticut	5.87
26	Maine	5.85
27	New Jersey	5.61
28	Indiana	5.41
29	Idaho	5.39
30	New York	5.39
31	South Dakota	5.38
32	Pennsylvania	5.07
33	Michigan	5.01
34	Kentucky	4.95
35	Ohio	4.94
36	Iowa	4.89
37	Rhode Island	4.84
38	South Carolina	4.62
39	North Carolina	4.38
40	Georgia	4.19
41	Montana	4.10
42	New Mexico	3.65
43	North Dakota	3.57
44	Illinois	2.86
45	Alabama	2.40
46	Oklahoma	2.24
47	West Virginia	2.11
48	Mississippi	1.11
49	Arkansas	0.71
50	Louisiana	0.63
	U.S. Average	6.00

In the old economy, virtually all economic transactions involved the transfer of physical goods and paper records, and often face-to-face interactions. In the emerging digital economy, a significant share of both business and government transactions will be conducted through digital electronic means. The U.S. Internet economy was recently estimated to have generated some $300 billion in revenue in 1998—supporting over a million jobs—after growing at a compound annual rate of 174.5 percent over the previous three years.[17] But when the digital economy really takes off (i.e., when we are close to ubiquitous Internet penetration and key enabling systems like digital authentication systems and broadband telecommunications are in widespread use), the productivity and income gains will be enormous. In terms of productivity gains and increased standards of living, the digital economy is likely to do as much to foster state economic growth in the 21st century as the Industrial Revolution did in the early and mid-20th century.

The digital economy indicators in this section measure four things: 1) the percentage of adults online; 2) commercial (".com") Internet domain names per firm; 3) deployment and use of information technology in K-12 public schools; and 4) the use of digital technologies to deliver state government services.

Aggregated Digital Economy Scores



Source: Authors' calculations based on the states' scores in four indicators—online population, ".com" domain name registrations, technology in schools, and digital government.

ONLINE POPULATION

The percentage of adults with Internet access in each state.

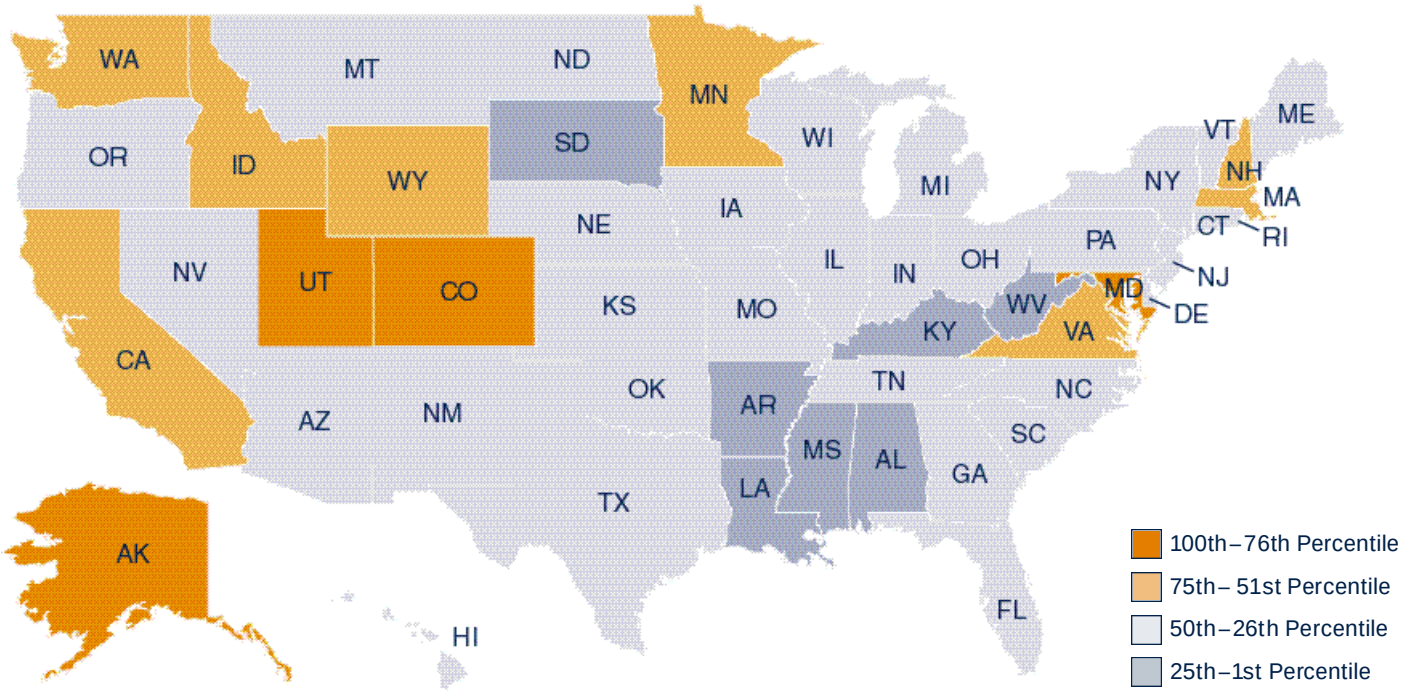
Why Is This Important? The number of people online is probably the most basic indication of a state's progress toward the digital economy. In 1997, 25 percent of households were online nationwide; by the end of 1998, the percentage was up to 33; by the end of 1999, it is projected to be 38 percent; and by 2003, it's projected to be well over half.[18] (The percentage of adults online is even higher than the percentage of households because some people have access at work, or through colleges or universities, and not at home.) Moreover, as technology becomes cheaper (companies have even begun to give away PCs if individuals subscribe to Internet access services), a broader range of Americans are getting online. The average income of Internet users is dropping, as is the average education level. Both trends suggest that the online population is looking more and more like the American population in general.[19]

The Rankings: States differ significantly in the degree to which their residents are online. As of the end of 1998, approximately one-third of the U.S. population was online. This reflected a range from 52 percent in Alaska and 47 percent in Colorado to 19 percent in Arkansas and 17 percent in Mississippi. In general, residents of Southern and Plains states are less likely to be online, while residents of Pacific, Mountain, and Northeast states are more likely.

The top five:		Percentage of adults online:
1	Alaska	52%
2	Colorado	47%
3	Maryland	46%
4	Utah	46%
5	New Hampshire	41%
	U.S. Average[20]	31%

Source: Cyber Dialogue, December 1998 data.

"By 2003, well over half of American households are expected to be online."



COMMERCIAL INTERNET DOMAIN NAMES

The number of commercial Internet domain names (".com") per firm.

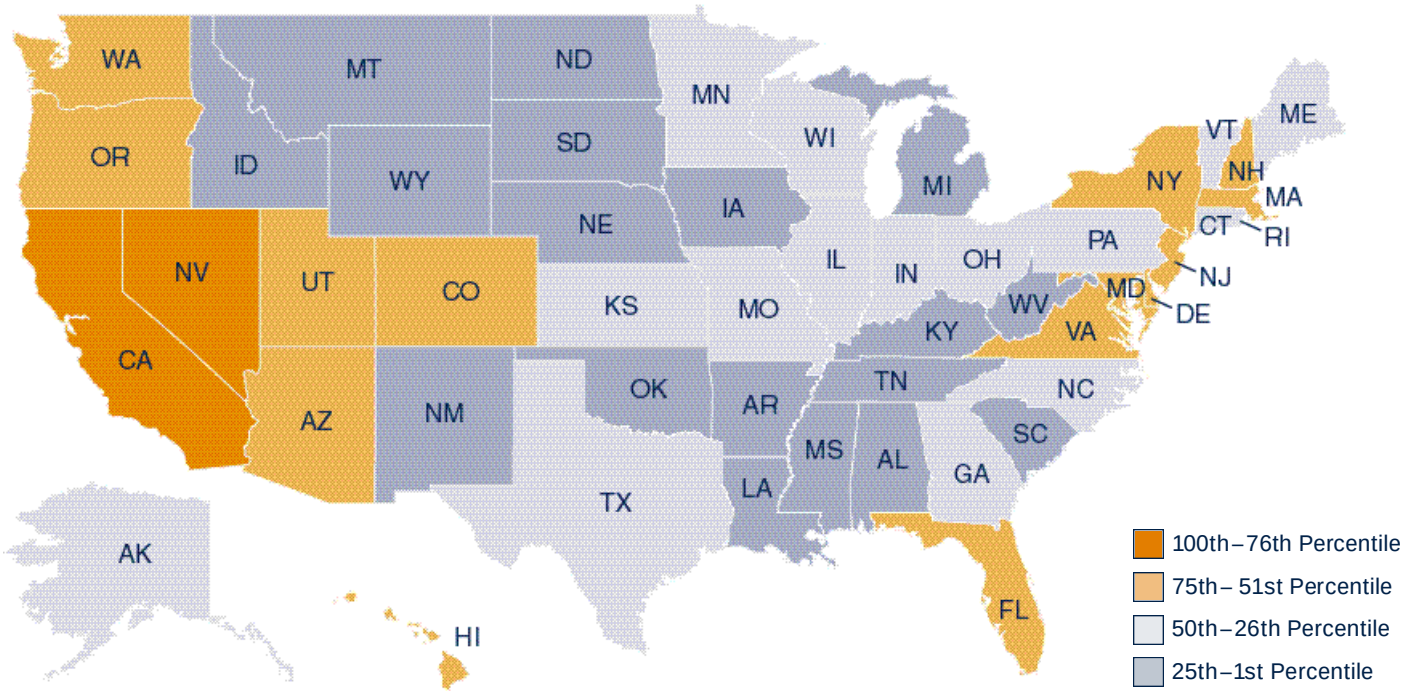
Why Is This Important? The New Economy is not just about the hippest, high-flying Internet firms in Silicon Valley. It's also about all of the ways companies everywhere are putting computers and information technology to work. One way to quantify that is to look at the number of companies that have created a presence for themselves on the World Wide Web. Probably the most effective measure is the number of ".com" domain names registered in each state.[21] An Internet domain is an organization's unique name combined with a "top level" domain designation such as ".com," ".org," or ".edu," denoting commercial sites, non-profit organizations, or educational or research organizations, respectively. According to the most recent data, there are some 2,228,000 ".com" domain names registered in the United States.

"The New Economy is about the ways companies everywhere are putting computers and information technology to work."

The Rankings: The number of ".com" domains registered per firm varies significantly from state to state. The highest-ranking state, Nevada, has almost six times more than the lowest-ranking state, Mississippi. Nevada's first place finish could well be a dubious distinction: it may be attributable to a large number of gambling and pornographic sites. But most of the other top finishers, including California, Massachusetts, Utah, Colorado, Virginia, and Washington, are among the most high-tech states by almost any measure.

The top five:		".com" domains per firm:
1	Nevada	.46
2	California	.45
3	Massachusetts	.35
4	Arizona	.34
5	Utah	.32
	U.S. Average	.26

Source: Anthony Townsend, Department of Urban Studies and Planning, Massachusetts Institute of Technology. 1999 data.



TECHNOLOGY IN SCHOOLS

A weighted measure of the percentage of classrooms wired for the Internet, teachers with technology training, and schools with more than 50 percent of teachers having school-based e-mail accounts.

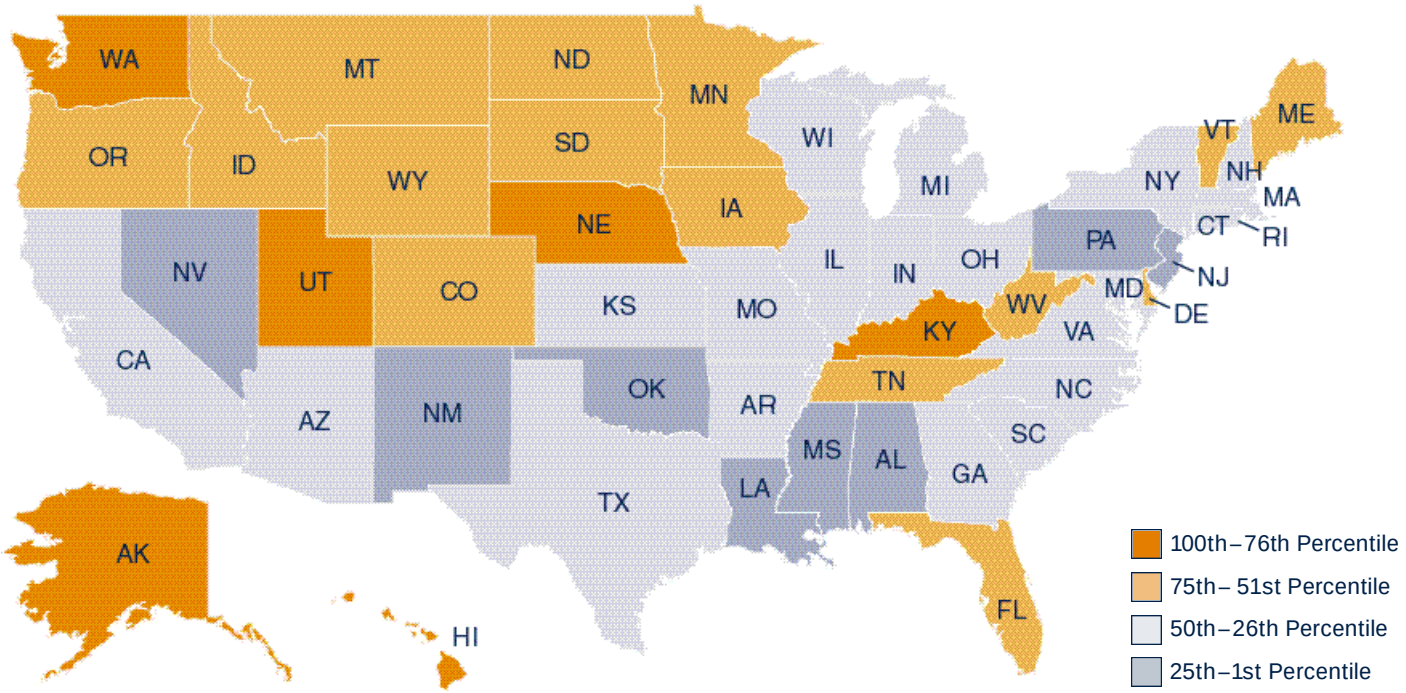
Why Is This Important? While the jury is out on exactly how to best integrate technology in the classroom, many believe computers and the Internet can play a key role in improving education. In the meantime, the use of information technology in America's schools is growing. The percentage of schools with at least one Internet connection has increased rapidly, from 35 percent in 1994 to 78 percent in 1997. The percentage of classrooms with Internet access has gone from 3 percent in 1994, to 27 percent in 1997, to 44 percent in 1998.[22]

"The percentage of classrooms with Internet access has gone from 3 percent in 1994, to 27 percent in 1997, to 44 percent in 1998."

The Rankings: States that are farthest ahead in integrating information technology into schools appear to be less populated and more geographically dispersed, suggesting that a motivating factor is the desire to establish better connections to information and resources in other parts of the nation and the world. Political leaders in those states may recognize that the IT revolution is an important key to their future prosperity and that it is essential to properly train the next generation of workers. Of the top 20 states, only one, Delaware, could be considered to be densely populated. Many of the most densely populated East Coast and Midwest states (including New York, New Jersey, Connecticut, Maryland, Michigan, and Ohio) rank near the bottom.

The top five:		Weighted score:
1	Alaska	3.81
2.	Washington	3.79
3.	Hawaii	3.63
4.	Nebraska	3.16
5.	Utah	3.00
	U.S. Average	2.00

Source: Education Week, 1997-1998 data.



DIGITAL GOVERNMENT

A measure of the utilization of digital technologies in state governments.

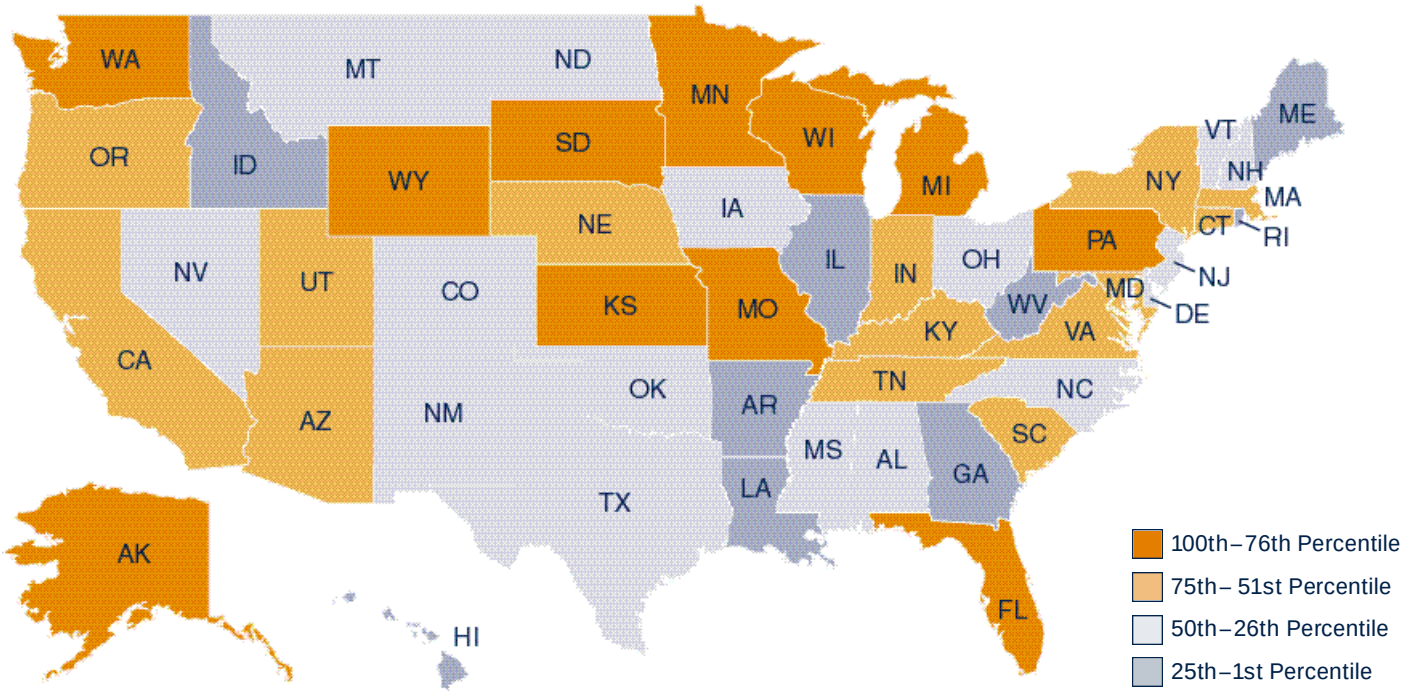
Why Is This Important? State governments that fully embrace the potential of networked information technologies will not only increase the quality and cut the costs of government services, but also help to foster broader use of information technologies among residents and businesses, leading to faster economic growth. Government can play a key role in advancing the digital economy by refocusing its procurement power and providing a critical mass of digital services, from smart cards for welfare recipients to online tax filing and voting. But for these efforts to work, they must be intimately linked to reengineering government itself.

"Information technologies will increase the quality and cut the costs of government services."

The Rankings: States with a tradition of progressive "good government" appear to have gone farther along the path toward digital government than states without this tradition. But this relationship is not completely predictive. In part, this may be because digital government efforts appear to be driven by the efforts of particular individuals—governors, secretaries of state, legislative committee chairmen—who believe that their states should go in this direction.

The top five:		Total score:
1	Washington	79.7
2	Wisconsin	79.5
3	Alaska	76.6
4	Missouri	73.5
5	Kansas	72.9
	U.S. Average	60.4

Source: Progress & Freedom Foundation, 1998 data.



Digital Government: Driving the Next Generation of Reinventing Government

The U.S. economy is in the midst of the transformation from an industrial to a digital economy, in which an increasing share of economic functions will be conducted electronically and traditional paper and face-to-face transactions will become less frequent. This transformation is leading to significantly increased economic efficiencies, which in turn are reversing the nearly three-decades-old slowdown in productivity and wage growth.

This revolution is not only transforming many industries — particularly those focused on information processing or consumer transactions — it is also transforming governments. Many states and localities provide information online for everything from zoning and building permit regulations to the times that government offices are open. But an increasing share have taken the next step: providing government services electronically. The state of Washington allows individuals to renew professional licenses online. Utah is about to allow all court documents to be filed over the Internet. Massachusetts lets citizens renew their drivers' licenses online. Georgia residents can apply for boating, fishing, or hunting licenses over the Net.

But the potential for digital government has only begun to be explored. Within a few years, citizens in many states will be able to pay taxes, file regulatory documents, pay parking tickets, conduct title searches, communicate with their children's teachers and check homework assignments, take courses, and even vote online. Businesses will be able to file all taxes electronically, submit permit and regulatory information in an integrated way online, and even start a new business by filling out only one electronic form. Government workers will be able to use technology to enable them to do their jobs better, faster, and cheaper. For example, police will be able to securely log into court sites to find out when they must appear in court, while social workers will be able to file reports and access files remotely.

State and local governments need to embrace digital government for several reasons. First, digital government will give citizens and businesses more reasons to get online and use digital technologies, thus broadening and deepening the IT revolution. Second, governments can use digital technologies to dramatically cut their costs, while increasing the quality of their services. Online ordering and filing can cut the costs to government by over 90 percent compared to in-person methods. For example, filing court documents electronically eliminates the time and money spent by court clerks entering and coding documents. It also cuts storage costs, as evidenced by the fact that one Utah court alone spends over $1 million per year just to store paper documents.

Most importantly, citizens will benefit by access to higher quality services and greater accessability (24 /7 government services). Studies have found that citizens prefer filing applications online than doing it in person or by mail. Just as consumers now expect "on-my-schedule" service from business, they will expect the same performance from government. Instead of creating one-stop government, the IT revolution enables *non*-stop government, where people can access government from anywhere, at anytime.

In addition, digital governments would be able to pass the savings along to citizens in the form of lower taxes, rebates, and discounts. Finally, digital government initiatives can improve access and transparency of government, giving citizens greater sense of ownership and participation.

The technology exists today to fundamentally transform much of the business of state and local government. It is really only a matter of governments rising to the challenge. Transforming bricks-and-mortar government into digital government requires a vision of what government can be, and a willingness to innovate and take risks.

To really promote digital government, state and local governments need to embrace to the following principles:

1) **Think customer, not government agency.** Digital government is all about being customer-focused. Too often, public agencies organize services and programs according a political or bureaucratic logic. In contrast, the Internet enables the seamless integration of government services organized around what citizens need.

2) **Focus on digital transactions between citizens and government.** Net-enabled government services should be a key driver in government reengineering efforts.

3) **Pass savings on to citizens by offering rebates or discounts for interacting with government electronically.** Digital government can generate significant savings for government, and in order to encourage citizens to use these low-cost systems, government should pass some of the savings back to them.

4) **Invest money now to save money tomorrow.** Elected officials and agency heads often view spending on digital government as simply one more item competing with others for limited funds. In fact, because they cut costs, expenditures on digital government usually pay for themselves in relatively short periods of time.

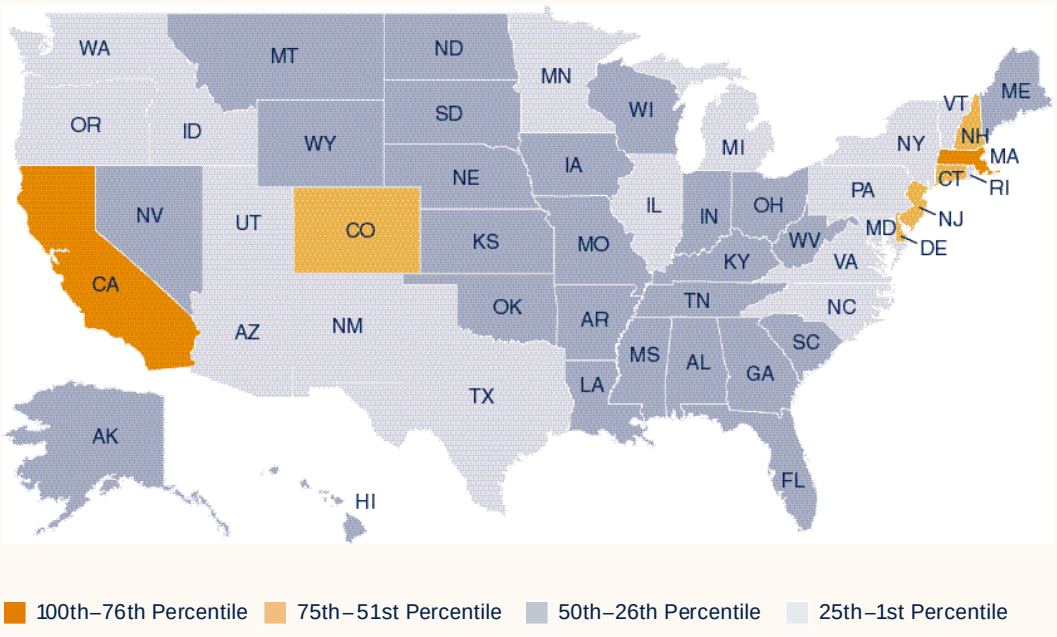
INNOVATION CAPACITY

Rank	State	Score
1	Massachusetts	16.25
2	California	12.99
3	Delaware	11.08
4	Colorado	10.97
5	New Hampshire	10.17
6	New Jersey	9.95
7	Connecticut	9.76
8	Washington	8.84
9	New Mexico	8.83
10	Minnesota	8.58
11	Vermont	8.37
12	Maryland	8.04
13	Idaho	7.79
14	Utah	7.66
15	Michigan	7.63
16	New York	7.31
17	Texas	6.72
18	Arizona	6.64
19	Illinois	6.60
20	Oregon	6.59
21	Pennsylvania	6.54
22	Rhode Island	6.40
23	Virginia	6.34
24	North Carolina	5.94
25	Ohio	5.31
26	Georgia	5.25
27	Missouri	5.11
28	Florida	4.89
29	Indiana	4.68
30	Wisconsin	4.68
31	Tennessee	4.64
32	Iowa	4.05
33	Kansas	4.02
34	South Carolina	3.84
35	Maine	3.71
36	Nebraska	3.66
37	Montana	3.57
38	Oklahoma	3.54
39	Alabama	3.48
40	South Dakota	3.46
41	Hawaii	3.09
42	Kentucky	3.09
43	North Dakota	3.03
44	Nevada	3.01
45	Alaska	2.90
46	West Virginia	2.66
47	Louisiana	2.39
48	Wyoming	2.17
49	Mississippi	1.90
50	Arkansas	1.90
	U.S. Average	6.00

In the old economy, economic growth stemmed from increases in the supply of capital, labor, or natural resources. Growth in the New Economy stems from increases in knowledge and innovation and its widespread adoption. Technological innovation, in particular, is one of the fundamental drivers of growth in the New Economy. Studies show that technological innovation is responsible for over two-thirds of per-capita economic growth.[23] States that score well on innovation indicators actually show lower rates of job growth between 1991 and 1996 (there is an overall correlation of -0.15 for the 50 states). However, they score much higher on rates of growth in per-capita income (a correlation of 0.24). In other words, the higher the score on innovation capacity, the faster the income of the residents went up. As a result, if states want to boost the incomes of their residents, embracing technological innovation is a key path.

The innovation capacity indicators in this section measure five things: 1) share of jobs in high-tech industries; 2) scientists and engineers as a share of the workforce; 3) the number of patents relative to the size of the workforce; 4) industry R&D as a share of GSP; and 5) venture capital invested as a share of GSP.

Aggregated Innovation Capacity Scores



Source: Authors' calculations based on the states' scores in five indicators—high-tech jobs, scientists and engineers, patents, industry investment in R&D, and venture capital.

HIGH-TECH JOBS

Jobs in high-tech electronics manufacturing, software and computer-related services, and telecommunications as a share of total employment.

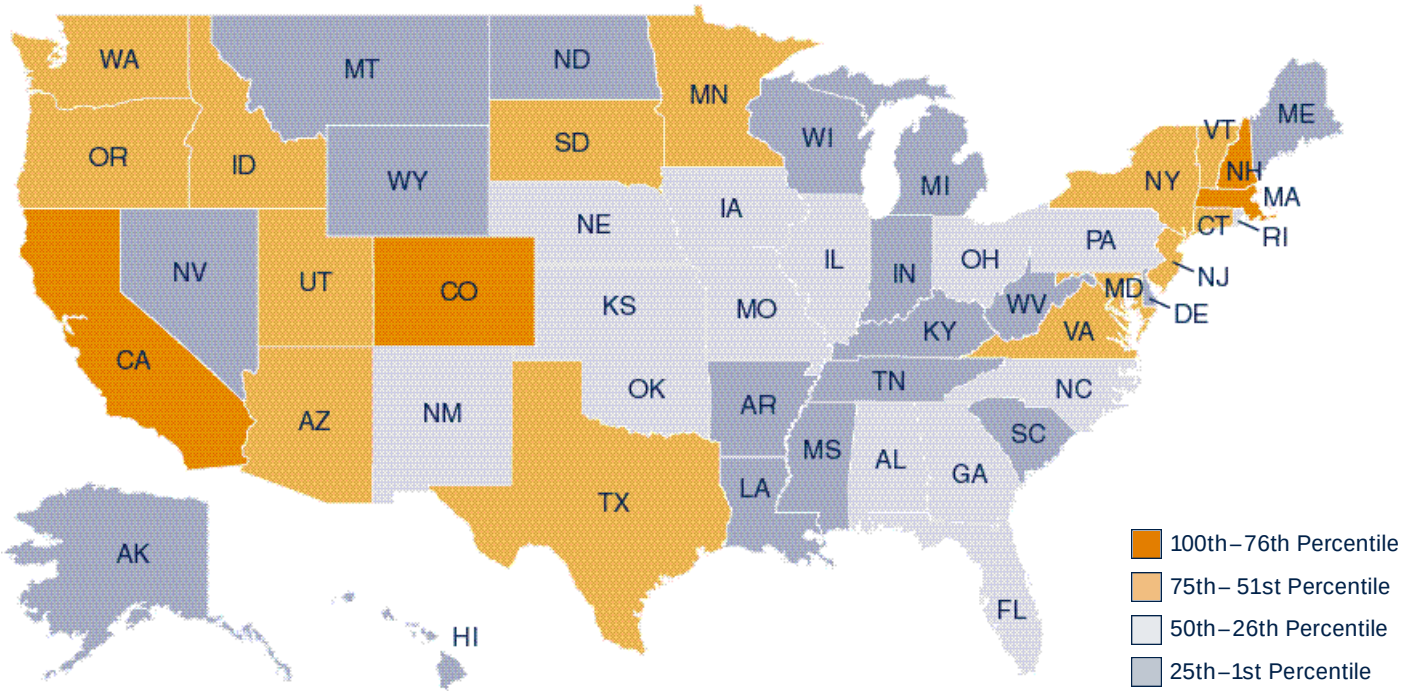
Why Is This Important? Within both the manufacturing and service sectors, technology companies have become more important. High-tech manufacturing's share of value added in manufacturing has grown from 18 percent in 1970 to 24 percent in 1994.[24] High-tech output as a whole has increased from 5.5 percent of GDP in 1990 to 6.2 percent in 1996, and average wages in the high-tech sector are 77 percent higher than in the rest of the economy.[25] Moreover, while these industries make up less than 7 percent of the overall economy's output, they are key drivers of the New Economy. Just as capital and machinery-intensive industries (autos, chemicals, and steel) drove growth in the 1950s and 1960s, high-tech firms (computer hardware and software, telecommunications, and biotech) are the growth engines of the New Economy.

"High-tech firms (computer hardware and software, telecommunications, and biotech) are the growth engines of the New Economy."

The Rankings: The high-tech focus of states varies significantly, from a high of 8.2 percent of the workforce in New Hampshire to 1 percent in Wyoming. While all states have high-tech jobs, the leaders tend to be in the Northeast, the Mountain States, and the Pacific region. High-tech jobs are often concentrated in particular regions of a state: information technology in southern New Hampshire; software around Provo, Utah, and Seattle; Internet and telecommunications in the Washington, DC region of Maryland and Virginia; telecommunications in Denver; semiconductors in Phoenix; and a broad mix of technologies in Silicon Valley and Los Angeles.

The top five:		High-tech jobs as a percentage of all jobs:
1	New Hampshire	8.2%
2	Colorado	8.0%
3	Massachusetts	7.7%
4	California	6.9%
5	Vermont	6.3%
	U.S. Average[26]	4.5%

Source: American Electronics Association, 1997 data.



SCIENTISTS AND ENGINEERS

Civilian scientists and engineers as a percentage of the workforce.

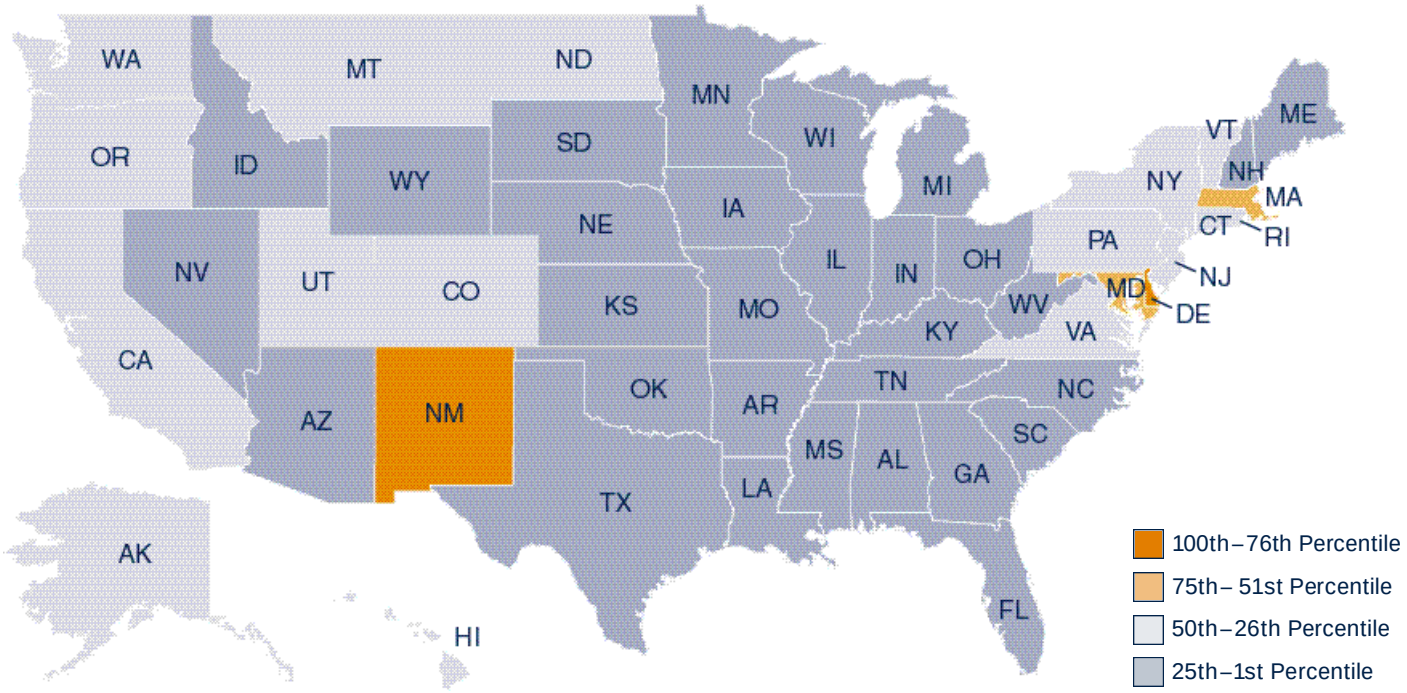
Why Is This Important? In the New Economy, the key engines of growth—technology and research-based companies and industries—are fueled by a large and high-caliber scientific and engineering workforce. So growing or attracting a high-quality, scientific workforce is critical to continued economic growth in states. These workers allow state economies to boost innovation and technological change (in both new products and production processes), and in so doing create higher value added and higher-wage jobs.

"Growing or attracting a high-quality, scientific workforce is critical to continued economic growth in states."

The Rankings: States with the highest rankings tend to be high-tech states (such as Massachusetts, California, and Utah); states with significant corporate R&D laboratory facilities (such as Delaware, New Jersey, Connecticut, New York); or states with significant federal laboratory facilities (like New Mexico, Maryland, and Rhode Island).

The top five:		Scientists and engineers as a percentage of all jobs:
1	Delaware	1.07%
2	New Mexico	1.00%
3	Maryland	0.85%
4	Massachusetts	0.81%
5	New Jersey	0.56%
	U.S. Average	0.42%

Source: National Science Foundation, 1995 data.



PATENTS

The number of patents issued to companies or individuals per 1,000 workers.

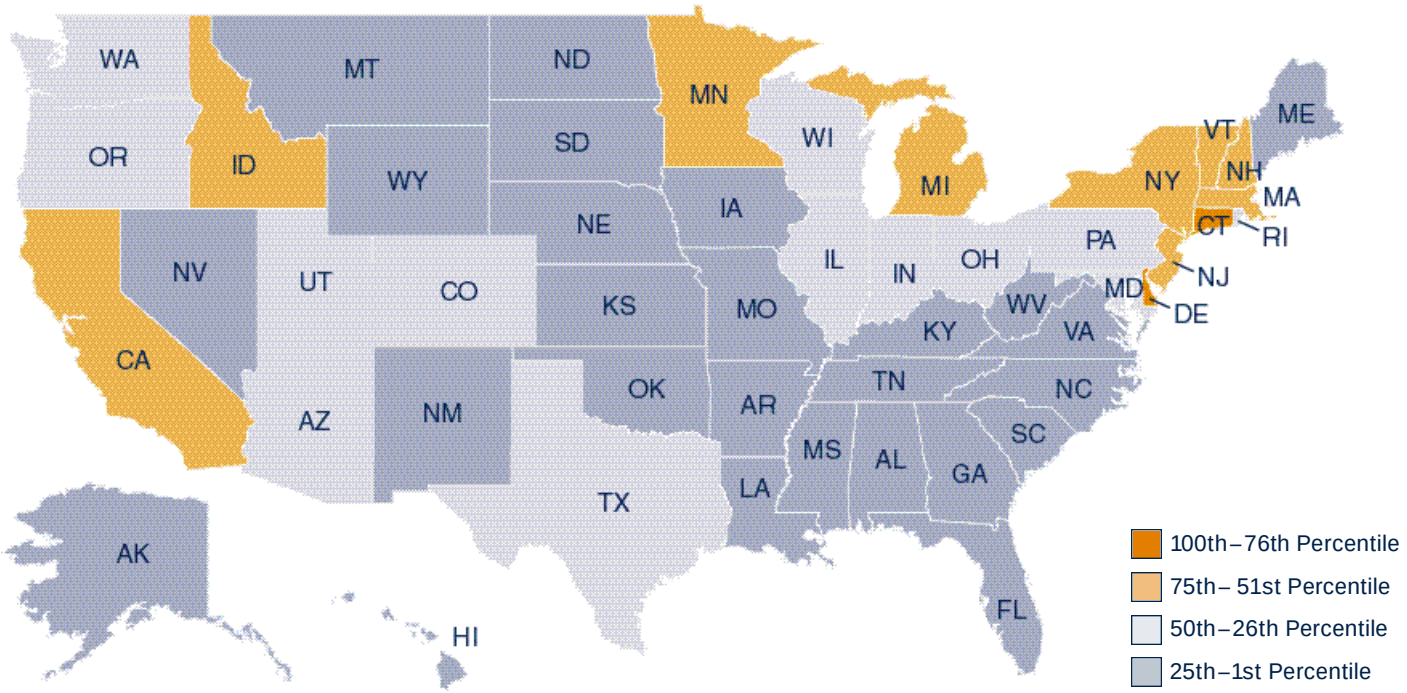
Why Is This Important? The capacity of firms to develop new products will determine their competitive advantage and ability to pay higher wages. One indicator of the rate of new product innovation is the number of patents issued. As technological innovation has become more important, the number of patents issued per year in the United States has grown from 58,000 in 1984 to over 110,000 in 1995.

"Patents issued per year in the United States have increased from 58,000 in 1984 to over 110,000 in 1995."

The Rankings: States with an above-average share of high-tech jobs—and states where these jobs are in either corporate headquarters or R&D labs, as opposed to production facilities—tend to use the highest numbers of patents. The Northeastern states lead the nation, partly because of DuPont, in Delaware.

The top five:		Patents per 1,000 workers:
1	Delaware	1.12
2	Connecticut	0.88
3	Vermont	0.86
4	Massachusetts	0.83
5	New Jersey	0.81
	U.S. Average	0.48

Source: U.S. Patent and Trademark Office, 1996-1997 data.



INDUSTRY INVESTMENT IN R&D

Private sector investment in research and development as a share of Gross State Product.

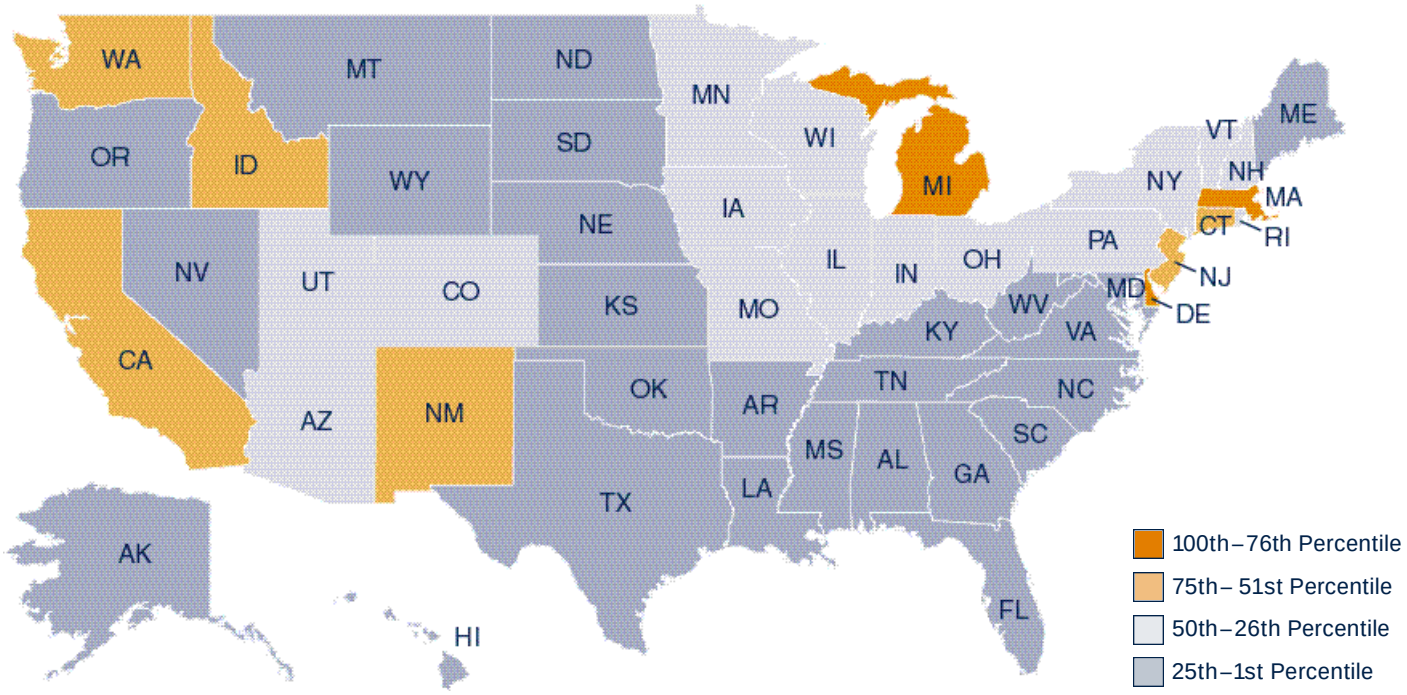
Why Is This Important? Research and development (R&D), which yields new product innovations and adds to the knowledge base of industry and the marketplace as a whole, is a key driver of economic growth. Business provides more than two-thirds of all R&D funding. After steadily rising in the 1980s, and falling in the early 1990s, business-funded R&D as a share of GDP has recently resumed its upward climb, reaching its highest levels ever in 1997. However, most of that growth is in funding for development, with basic and applied research increasing little.

"Research and development is a key driver of economic and income growth."

The Rankings: Michigan leads the nation in corporate R&D —with well over twice the national average—much of which is automobile-related. In general, the states that are ranked the highest tend to be either high-tech states (such as Massachusetts, California, or Washington); states with significant corporate R&D laboratory facilities (like Michigan, Delaware, New Jersey, and Connecticut); or states with significant federal laboratory facilities (as in New Mexico, Idaho, and Rhode Island), which may further stimulate corporate R&D.

The top five:		R&D as a percentage of GSP:
1	Michigan	4.9%
2	Delaware	4.0%
3	Massachusetts	3.8%
4	New Mexico	3.6%
5	Connecticut	3.3%
	U.S. Average	1.8%

Source: National Science Foundation, 1995 data.



VENTURE CAPITAL

Venture capital invested as a percentage of Gross State Product.

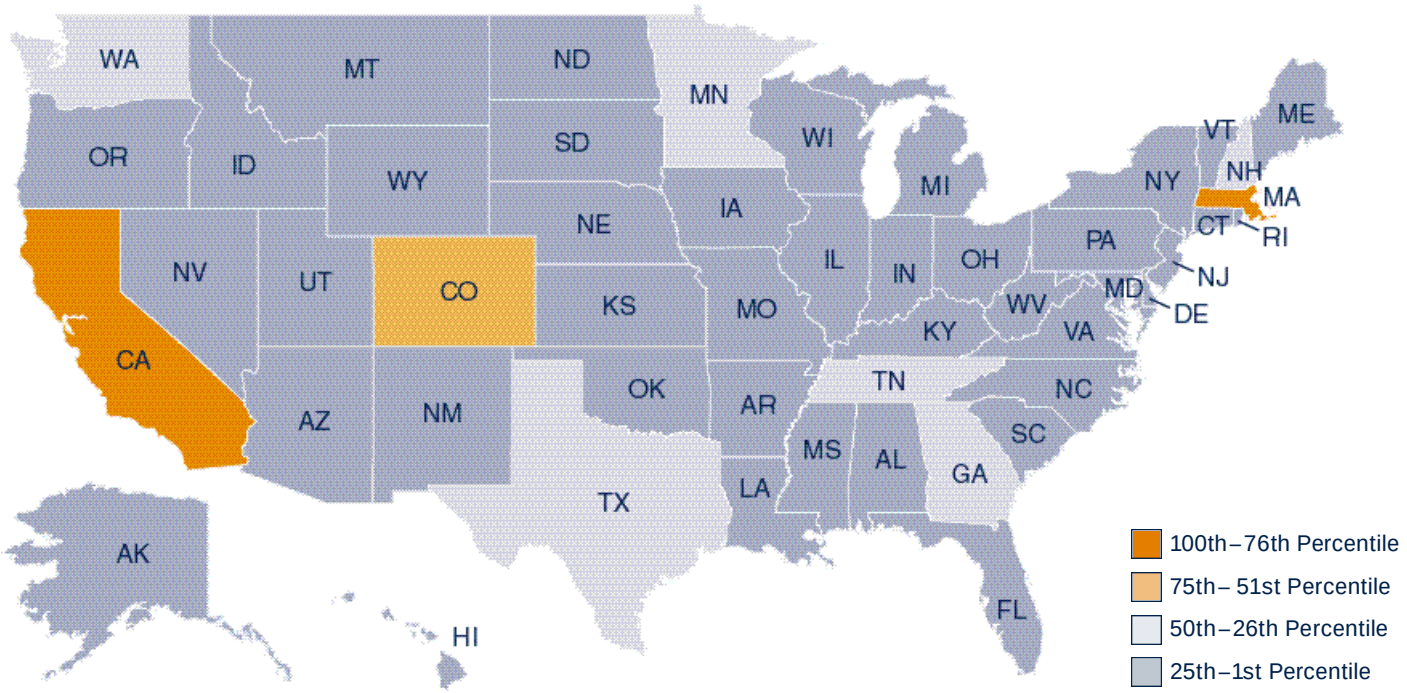
Why Is This Important? In relative terms, venture capital (funds invested in new and unproven businesses) amounts to a small share of the overall capital markets, but its value goes beyond a simple dollar figure. Venture capital spurs growth at the critical early stages of growing companies' development. Moreover, venture capitalists don't just throw their money at startup companies hoping to get lucky and pick a winner. They become involved as board members and management advisors, suggesting strategic partnerships, and helping to refine business plans. And venture-based companies are a key source of job growth—employment in venture-backed companies increased 34 percent annually between 1991 and 1995, while employment in Fortune 500 companies declined 3.6 percent. In the nation as a whole, venture capital investments have increased from an average of $6 billion in the early 1980s to $12 billion in 1997 (in constant 1992 dollars), and from 0.10 percent to 0.16 percent of GDP. In 1997, it was disbursed to some 2,485 companies, five times more than in 1980.[27]

The Rankings: Venture capital investments are highly concentrated in a few states, particularly states with strong university engineering and science programs and an existing base of high-tech companies, both of which can be the source of many entrepreneurial start-ups or spinoffs. But as venture capital investments have increased, even middle-ranking states obtain significant amounts of venture capital.

The top five:		Venture capital as percentage of GSP:
1	Massachusetts	0.62%
2	California	0.50%
3	Colorado	0.34%
4	New Hampshire	0.29%
5	Washington	0.24%
	U.S. Average	0.17%

Source: Pricewaterhouse Coopers LLP, 1997 data.

"Employment in venture-backed companies increased 34 percent annually between 1991 and 1995, while employment in Fortune 500 companies declined 3.6 percent."



In the New Economy, the ticket to faster and broader income growth is innovation. The New Economy puts a premium on what Nobel Laureate economist Douglas North calls "adaptive efficiency," which refers to the ability of institutions to innovate, continuously learn, and productively change. As markets fragment, technology accelerates, and competition comes from unexpected places, learning, creativity, and adaptation have become the principal sources of competitive advantage in many industries. Enabling constant innovation needs to become the goal of all organizations committed to prospering. Similarly, the goal for states must be to foster innovation and adaptation—in infrastructure, in institutions, and on the part of individuals.

These efforts need to be proactive and designed for the long-term. States need to challenge all economic sectors and institutions, including their own institutions of government, to become cultures of innovation. The consequences for any state that does not respond to this challenge are low productivity, stagnant living standards, and reduced opportunity for its citizens.

Innovation and change mean uncertainty and disruption. But it is becoming increasingly clear that dynamism is critical to growth. (You can't have upward mobility if no one is on the move.) The more churning in a state, in terms of new business start-ups and existing business failures, the faster the state's rate of economic growth. In fact, of all of the indicators in this report, churn is the second-most-strongly correlated with state employment growth (behind jobs in gazelle companies). This means that states need to promote change and innovation, not retard it.

In this New Economy, traditional rationales and goals for economic development need to give way to new ones. With the national unemployment rate at a 30-year low of around 4 percent, and the highest unemployment rate of any individual state at 6.6 percent (West Virginia), job creation is at least temporarily no longer job one.

The challenge now is to create a progressive economic policy framework that will encourage a new era of higher per-capita income growth, while promoting and enabling a broad-based prosperity that produces the widest possible winners' circle.

Despite recent strong gains (over 2 percent per year for the last two years), productivity and per-capita income growth have each barely exceeded 1 percent per year over the last 25 years—their lowest levels in a half century.[28] Moreover, income growth has been unequal: while well-paying jobs increased by 20 percent in the last 10 years, moderate wage jobs did not grow, and low-wage jobs grew 10 percent. In addition, growth has been geographically uneven in many states, with innovation-oriented, knowledge jobs concentrating in a few metropolitan areas, while other areas often languish. The recent strong productivity gains and wage growth across all income groups are welcome news, but states need to ensure that the trend continues well into the 21st century.

To achieve these new goals, states will need to overhaul their familiar approaches to economic development. In the old economy, fixed assets, financing, and labor were the principle sources of competitive advantage for firms. That's why states focused on physical infrastructure for factories, gap financing for big industrial projects, and marketing and incentives to attract industry. But following a low cost, industrial recruitment strategy—cutting taxes and services in hopes of making a state attractive to companies—is no longer the path to raising wages and quality of life.

In the New Economy, states need to shift their focus from "hunting and gathering" (industrial recruitment) to "gardening" (promoting growth from within).

Tomorrow's jobs will come from fast-growing entrepreneurial firms, and not from the small number of business relocations. States that ignore entrepreneurial growth in favor of expensive zero-sum industrial recruitment will do so at their own peril. A case in point is Iowa, which in the early 1980s chose not to provide a loan and business assistance to Ted Waitt, a twenty-something fledgling entrepreneur seeking to start a new firm, since his was not a large firm nor a big industrial recruitment prospect. Waitt, who had an idea of selling computers by mail order, stayed in the same metropolitan area, but went just across the state border to South Dakota, which was more than happy to help him grow his company. Today, that company, Gateway, is one of the largest employers in South Dakota.

Unfortunately, many states continue to pursue Industrial Age economic development strategies that seek to attract out-of-state investments through corporate tax subsidies, abatements, and assurances of low labor costs. To make matters even worse, many states subsidize companies that pay very low wages. These strategies are increasingly out of touch with the factors that constitute success in the New Economy: good public education, an R&D infrastructure, availability of job-specific skills training, quality of life, quality government, and innovative economic development efforts. This is not to say that fiscal discipline should not be a cornerstone of government in the New Economy. But low costs with a poor quality of life are not the tickets to success.

Rather than simply trying to cut costs, pass out incentives, or react to each new economic gyration, states should instead invest in the

foundation areas for growth in the New Economy. A progressive, innovation-oriented state policy framework for this New Economy should rest on five pillars: 1) *Co-investment in the skills of the workforce;* 2) *Co-investment in an infrastructure for innovation;* 3) *Reinvention—and digitization—state and local governments;* 4) *Foster the growth of the digital economy,* and 5) *Foster civic collaboration*.

CO-INVEST IN THE SKILLS OF THE WORKFORCE

Lack of progress in education is cause for concern. Nationwide, K-12 performance has simply failed to keep up with the pressing need for a skilled workforce—in spite of continued increases in spending.[29] And industry has cut back its expenditures on training.[30] States need to adopt policies to ensure that American companies have the skilled workers they need to be productive, while simultaneously ensuring that American workers have the skills they need to navigate, adapt, and prosper in the New Economy. States can do several things to improve K-12 performance and foster skills of the workforce:

Hold all students to high standards. Standards-based K-12 reform is already bearing fruit in many states. States that have adopted rigorous standards and are assessing progress against them have seen significant increases in school performance, especially among underprivileged students. Particularly noteworthy are Kentucky, North Carolina, and Texas, which have all made considerable progress as a result of standards-based reform. High standards and meaningful assessments mean real accountability for school systems, administrators, teachers, and students.

Adopt sensible public school choice policies. Charter schools, inter-district public school choice, and open enrollment are all tools that states are using to stimulate competition, give parents options, and raise the quality of public schools. There are charter school laws on the books in 34 states and the District of Columbia, and more than 1,100 charter schools are in operation nationwide. Public school choice—with real and meaningful choices for parents—is critical to improving schools.

Overhaul antiquated K-12 public school funding systems. Public school choice and high standards will be meaningless if resource allocation isn't modernized. The reliance on the property tax to fund schools results in gross inequities between affluent and impoverished communities, and is particularly inequitable to rural areas. Currently, 17 states have school finance litigation in their courts and are wrestling with changing their finance structures. In addition, eight states, including Texas, Arizona, and Arkansas, have overhauled their systems in the past three years. Money alone will not solve educational problems; however, neither will a lack of resources. In addition, outmoded funding systems hamstring charter schools and efforts to increase public school choice.

Provide incentives for the creation of math and science charter high schools specifically focused on serving disadvantaged students. K-12 education needs to give students the math and science skills they need to succeed in the New Economy. In the last 15 years, states such as North Carolina and Illinois have established math and science magnet high schools, but these schools have generally not focused on disadvantaged students. If states are to encourage students—including minority students—that have not traditionally gone into science and engineering fields, they need to target their efforts.

Co-invest in industry-led regional skills alliances. A number of states, including Pennsylvania, Rhode Island, and Wisconsin, are shifting the focus of workforce training efforts to support industry-led skills alliances. For example, as part of the Wisconsin Regional Training Partnership, a number of metalworking firms, in conjunction with the AFL-CIO, used an abandoned mill building to set up a teaching factory to train workers with needed skills. In order to jump start and add to the scale of these efforts, the Progressive Policy Institute has proposed that the federal government provide matching funds for industry-led regional skills alliances (RSAs). Bipartisan legislation has been introduced in Congress, and as part of the Administration's "Life-Long Learning" agenda, Vice President Gore recently announced a proposal to commit up to $60 million in the FY 2000 budget to promote RSAs.[31] States should play active roles in the creation and co-funding of these alliances.

Rationalize programs funded under the 1998 Workforce Investment Partnership Act to create one-stop shops for all employment and training services. The Act gives states significant authority to craft comprehensive workforce development systems. But states must make these programs as user-friendly as possible. States should consolidate the welfare-to-work systems now being created so they do not end up with two separate bureaucracies focused on training disadvantaged workers. States should also take advantage of the authority granted in the Act to provide training and re-employment vouchers to individuals in need of services, and the vouchers should be coupled with "consumer report cards" to track the performance of training providers.

Increase scholarships for students attending public or private technical schools. A number of states have introduced legislation to address businesses' needs for more technically skilled workers by having the state pick up the students' tab for community college tuition and technical training. Governors in at least 16 states have proposed establishing, increasing, or expanding scholarship programs this year. For example, a bill introduced in the Michigan Senate would provide a $300 state tax credit to cover the balance of a student's Michigan community college tuition that is not covered by the federal Hope Scholarship tax credit. The state tax credit would be available to all students from two-parent households with incomes under $100,000 and single-parent families with less than $50,000 in annual income. In Delaware, the House Education Committee unanimously approved a bill that would allow any Delaware student who graduates from a public or private high school with at least a 3.0 grade point average to attend the Delaware Technical and Community College free for two years. Students must be accepted and enrolled as a technology student.

CO-INVEST IN AN INFRASTRUCTURE FOR INNOVATION

Innovation drives growth in the New Economy. Two-thirds of per-capita economic growth stems from technological innovation. While states that score well on innovation indicators actually showed lower rates of job growth between 1991 and 1996 (there is an overall correlation of -0.15 for the 50 states), they scored much higher on rates of growth in per-capita income (a correlation of 0.24). In other words, the higher the score on innovation capacity, the faster the incomes of the residents went up. As a result, if states want to boost the incomes of their residents, embracing technological innovation is a key path. And technology jobs are not just in Silicon Valley. In fact, the fastest growing high-tech areas of the country are places like Lancaster, Pennsylvania, and Boise, Idaho.

States can do several things to foster innovation, including:

Invest in higher education, particularly in science and engineering. The United States is not educating enough scientists and engineers, particularly computer scientists and technical engineers. The number of students receiving bachelor of science degrees in engineering has fallen to a 17-year low. Between 1986 and 1998, they declined by 19.8 percent, while the overall number of students receiving bachelor's degrees increased by nearly 20 percent. Not only do investments in engineering and science programs produce the type of knowledge-based workforce that states need in order to prosper, but strong science and engineering departments are critical to fostering industry/university partnerships and commercializing technology.

Boost efforts to link industry, universities, and government laboratories. All 50 states invest in initiatives to foster collaborative R&D (through research "centers of excellence," for example). But state investments in these initiatives have increased little in the last 10 years as states have pursued more expensive—and often dubious—industrial recruitment incentives.

Boost R&D tax credits, or create them if they don't exist. In 1996, 35 states offered an R&D tax credit, but most were modest, averaging less than 5 percent. At 22.5 percent, Rhode Island has the highest rate in the nation. Studies show that the R&D tax credit is an effective way of stimulating private-sector R&D.[32]

Support the commercialization of innovation. Increasingly, states are focusing not just on fostering the development of new technologies, but on helping businesses to grow by commercializing the technologies (developing, producing, and marketing new products). States such as Oklahoma, Kansas, Florida, and North Dakota have all recently developed initiatives such as commercialization centers or technology business assistance programs to help entrepreneurs commercialize technology.

Encourage "co-opetition." Competition for market position has been increasing, but so has the frequency of collaboration among competitors. In fact, management expert Peter Drucker and others have suggested that the organizational dynamic of networks, partnerships, and collaborative ventures is a main organizing principle in the New Economy. This kind of coopetition, as Harvard business professor Michael Porter and others have shown, is often regional (for example, optics in Rochester, Minnesota; furniture in Tupelo, Mississippi; hosiery in western North Carolina; and information technology in Silicon Valley). As Berkeley professor AnnaLee Saxenian notes in *Regional Advantage: A Study of Boston's Route 128 and Silicon Valley*, "Innovation is a collective process as well as an individual one."[33] States should support all kinds of collaborative partnerships and networks by reorienting their economic development and training programs to support regional industrial clusters. For example, Rhode Island's Samuel Slater Innovation Fund provides matching funds to industry clusters focused on improving their competitive position.

PROMOTE INNOVATION- AND CUSTOMER-ORIENTED GOVERNMENT

States with the most innovative, customer-oriented institutions (businesses, non-profits, and governments alike) will be the winners in the New Economy. But current government organization in most states has been borrowed from the mass production, hierarchical model, tending to produce many (if not more) of the same rigidities, inefficiencies, quality problems, and customer dissatisfaction that plague similarly structured businesses.[34] If Industrial Age state governments do not transform into Information Age governments, they will impede rather than advance progress.

Old, managerial, command-and-control models don't work anymore in business, and they don't work in government either.[35] Developing customer-oriented government is important not just because it cuts costs, but also because it improves the quality of life in a state. And both are critical because states' ability to retain and attract highly educated and skilled "knowledge workers" will help shape competitive success. In order to grow or attract the kinds of knowledge-based industries driving economic growth today, a state must first be attractive to these mobile, well-educated, knowledge workers.

States should:

Be on the forefront of providing government services online. The motto "online, not in line" should guide state efforts to use digital technologies. Digital government efforts simultaneously cut costs and improve services. For example, Massachusetts residents receive a $5 rebate when they renew their drivers' licences online because of the cost savings and efficiency gains for the Department of Motor Vehicles. But a large share of state government functions can be conducted online. Every state's Department of Administration should conduct a study of significant business-to-government or citizen-to-government interactions and assess the potential for conducting those transactions electronically.

FOSTER THE TRANSFORMATION TO A DIGITAL ECONOMY

As the Internet has mushroomed and the cost of computing and telecommunications technologies continues to plummet, a digital economy is beginning to emerge in the United States, with a significant share of business and government transactions starting to be conducted through digital electronic means. The U.S. Internet economy was recently estimated to have generated some $300 billion in revenue and to have supported over a million jobs in 1998.[36] But if the digital economy is to reach its full potential, government regulatory, tax, and procurement policies must be aimed first at not hindering and then, where possible, at proactively fostering this transformation.

While the digital economy will be driven by the private sector, there are a number of things states can do to foster its growth:

Work together to establish a uniform legal framework to encourage electronic commerce. Since the Internet knows no borders, it would be counterproductive for individual states to create legislation affecting the Internet in isolation. Of particular concern are issues like spam (unsolicited commercial e-mail), business and professional licensing (for doctors, for example), and taxation. Another important issue is the use of digital signatures, which allow individuals to authenticate themselves online. (There are currently more than 20 states with some kind of digital signature law on the books or pending.) All of this legislation should be consistent with model legislation created by the National Commission on Uniform State Laws so that all states sign onto the same policy framework. Otherwise, the risk is a digital-era Tower of Babel with 50 different sets of laws dictating how companies sell goods or provide services over the Net. It is true that states have historically enjoyed a degree of autonomous authority over such matters of commerce, but if they do not coordinate and establish a common framework for governing digital commerce, affected industries will rightly go to Washington to press for federal preemption. One way or another, the Internet will acquire uniform rules.

Ensure that laws and regulations do not harm the growth of the digital economy and the Internet. One of the first things states can do is examine their existing laws and regulations and amend any that discriminate against electronic commerce. But it will be just as important going forward to avoid creating new laws that will place a drag on the Internet economy. For example, states should not tax the use of the Internet itself—for example, by imposing taxes on the fees consumers pay to Internet Service Providers to access the Internet. In 1998, over 800 bills related to the Internet were introduced in the states, and over 500 have been introduced so far in 1999. Some of these bills are carefully crafted and well thought out, but many are not. Some Internet-related state legislation can be particularly counterproductive. For example:

- A proposed bill in New Jersey would let individuals sue their Internet Service Providers (ISPs) for unsolicited commercial E-mail that other individuals or companies transmit over the ISP's network.

- Tennessee is considering legislation that would make ISPs liable for blocking access to specific web sites that post sexually-explicit content not suitable for minors. The fact that most ISPs have customers in multiple states, and sometimes even countries, means that they would have to find some way to block some sites for some customers, and others for other customers.

The costs and confusion resulting from these types of laws can be significant. Moreover, both measures would turn ISPs into Internet cops.

States need to resist pressures from businesses and interest groups threatened by the Internet. These groups must not be allowed to use the power of government to protect themselves against economic change that benefits all consumers. Among recent examples:

- The Unauthorized Practice of Law Committee in Texas recently won a ruling that could lead to a ban on the sale of Quicken Family Lawyer, a software package that lets consumers create legal forms such as wills and simple contracts without the help of a lawyer.

- Wine distributors in many states have lobbied successfully for rulings making it illegal—a felony in some states—to buy wine over the Internet. In contrast, some states have made it legal to sell wine provided the buyers pay the sales tax and show proof of age when the item is delivered.

- In Washington, university faculty have protested against distance learning online. More recently, the American Federation of Teachers began running ads opposing distance learning.

- State professional licensing requirements that do not recognize licenses from other states limit the practice of tele-medicine and other kinds of online professional services.

In these and other cases, entrenched business and professional interests have raised barriers against new forms of commerce, and in so doing have effectively raised prices and reduced access for residents in their state. States that facilitate this sort of entrenched resistance are only impeding progress for themselves and the nation.

Encourage faster deployment of broadband telecommunications technologies. The lack of high bandwidth telecommunications capacity, especially to the home, is a barrier to progress in the Information Age. State telecommunication regulations need to remove barriers to market-led investments in broadband infrastructure. One thing states can do to ensure this is avoid applying the existing telephone universal service regulations to the Internet and broadband telecommunications. Applying this old economic framework would likely have the unintended effect of slowing down the deployment of these technologies.

Support Internet access at public facilities. At least for the next several years, most Americans will not have Internet access at home. Yet, public access is currently limited. For example, only half of American libraries (47.9 percent) offer Internet access, while only 9.2 percent offer access in all their local branches. Ensuring that places like libraries, schools, community centers, employment centers, and other public agencies (particularly those in lower income areas) provide sufficient free access to the Internet will enable all individuals to access these technologies.

Actively encourage widespread use of digital signatures. Individuals must be able to verify their identity online if there is ever to be a truly robust digital economy. Digital signatures are an important part of the solution. But institutions cannot begin offering services that will require digital signatures (such as online loan applications by banks) until a large number of citizens actually have digital signatures. And yet a large number of people will not have digital signatures until they need them for electronic transactions. States could play the critical role of solving this "chicken or egg" conundrum by enabling their Departments of Motor Vehicles to begin issuing digital signature certificates to all citizens who choose to apply for them. This is a similar to the function DMVs already perform by issuing drivers' licenses and state ID cards. Unlike in those cases, however, DMVs should not monopolize the process; citizens should also be able to obtain digital certificates from private sector sources.[37]

FOSTER CIVIC COLLABORATION

In the New Economy, "an infrastructure for collaboration" is a key component of success. As Harvard Business School Professor Rosabeth Moss Kantor writes in her book *World Class*, "Politics involves battles over distribution: who gets which slices of the pie. A community's social infrastructure, in contrast, offers the prospect for expanding the pie. Yet, the social infrastructure (for collaboration) is too often neglected, allowing the area to remain fragmented and balkanized."[38]

This social capital—the ability of people to work together for a common purpose in groups and organizations—is a characteristic of successful regional economies around the world, from Silicon Valley in California to the Emilia Romanga region in central Italy. These places have begun to work collectively and to see their competition as coming not from another part of the state, but from outside the state or region.

For example, Silicon Valley was so concerned that a growing "culture of blame" was inhibiting collective problem solving that the region created a partnership of business, government, and community-based organizations called "Joint Venture Silicon Valley" to collectively address issues standing in the way of the area's future progress. Numerous other regions and states, including San Diego, Pittsburgh, Kansas, Indiana, and Rhode Island, have also developed similar public-private councils to foster economic and community development.

In the New Economy, the successful states and regions are the ones with the most effective collaborative networks that craft and implement innovative solutions to public policy questions, placing the public interest above a narrow interest in maintaining the status quo.

States should:

Form economic policy councils that bring together key leaders in business, government, labor, civic groups, and higher education to provide in-depth analysis of the economy, develop creative economic strategies, and build widespread consensus for action.

Foster sub-state regional collaborative efforts that bring all the parties to the table to collectively develop and implement economic strategies for their regions.

SUMMARY

The New Economy is here to stay—there's no going back. It brings enormous potential for the growth of state economies, but also introduces challenges. If states do not invest in a knowledge infrastructure—world class education, training, and technology—companies will not have the skilled workers and cutting edge tools needed to grow and create well-paying jobs. If states erect barriers to the growth of the Internet and the digital economy instead of facilitating it, the real incomes of their residents will ultimately suffer from lost growth potential. And if Industrial Age state governments do not transform themselves into Information Age governments, they will impede, rather than advance growth. Simply put, states that meet the challenges of the New Economy—focusing on innovation, learning, and constant adaption-will be the ones that succeed and prosper.

Page 14 Indicator: **Office Jobs**
Sources: Office employees: David Birch, Anne Haggerty, and William Parsons, *Corporate Demographics: America's Office Economy: 1997-2007,* (Cambridge, MA: Cognetics, 1997), p. 26. Overall 1997 employment: Bureau of Labor Statistics.

Page 15 Indicator: **Managerial, Professional, Technical Jobs**
Sources: Bureau of Labor Statistics specific occupational employment data and overall employment data, 1997 (http://www.bls.gov.oes).

Page 16 Indicator: **Workforce Education**
Sources: U.S. Census Bureau, *Statistical Abstract of the United States: 1997* (117th edition.) (Washington, DC: 1997), p. 161. Data based on 1990 U.S. Census.

Page 18 Indicator: **Export Focus of Manufacturing**
Sources: Center for Strategic & International Studies, (Data based on 1992 U.S. Census Bureau figures, *Exports from Manufacturing Establishments*, (Washington, D.C.: 1992).

Page 19 Indicator: **Foreign Direct Investment**
Sources: Employment by non-bank U.S. affiliates by state, 1996: Mahnaz Fahim-Nader and William J. Ziele, "Foreign Direct Investment in the United States—New Investment in 1997 and Affiliate Operations in 1996," *Survey of Current Business*, Bureau of Economic Analysis (June 1998) table 13, p. 53. Overall employment: Bureau of Labor Statistics.

Page 21 Indicator: **Gazelle Jobs**
Sources: David Birch, Anne Haggerty, and William Parsons, *Corporate Demographics: Corporate Almanac* (Cambridge, MA: Cognetics, 1998), pp. 21 & 53. This indicator shows the number of gazelle firm employees for 1997 as a share of total establishment employment (an establishment is defined as a place of work, a physical location).

Page 22 Indicator: **Job Churning**
Sources: Business starts: The Dun & Bradstreet Corporation, *1995-1996 Business Starts Record*, (New Jersey, 1997). Business failures: The Dun & Bradstreet Corporation, *1996 Preliminary Business Failure Record*, (New Jersey, 1997).

Page 23 Indicator: **Initial Public Offerings**
Sources: State IPO totals: Timothy Gallagher, *1997 New England IPO Report*, (Boston, MA: Hale & Dorr, LLP, 1998). Gross State Product: Department of Commerce, Bureau of Economic Analysis, Regional Economic Analysis Division, *Gross state product, by component and industry, 1977-96* (Washington, D.C., June, 1998).

Page 25 Indicator: **Online Population**
Sources: Cyber Dialogue, *Interactive Consumers*, (NY: April 1999) (www.cyberdialogue.com).

Page 26 Indicator: **Commercial Internet Domain Names**
Sources: Domain names: Anthony Townsend, Department of Urban Studies and Planning, MIT. 1999 counts are aggregated from ZIP code level data provided by www.domainsondisc.com. Firms: David Birch, Anne Haggerty, and William Parsons, *Corporate Demographics: Corporate Almanac*, (Cambridge, MA: Cognetics, 1998), p. 20. (A firm is a legal entity, while an establishment is a place of work.)

Page 27 Indicator: **Technology in Schools**
Sources: Classroom Internet access and teacher e-mail: *Education Week*, "Technology Counts '98: Putting School Technology To the Test" (October 1998). Teacher technology training: Education Week, "Technology Counts: Schools and Reform In the Information Age" (October 1997). (http://www.edweek.org/sreports/).

Page 28 Indicator: **Digital Government**
Sources: The Progress & Freedom Foundation, *The Digital State 1998: How State Governments Are Using Digital Technology* (Washington, DC: September 1998), p. 88.

Page 30 Indicator: **High-Tech Jobs**
Sources: American Electronics Association, *Cyberstates 3.0: A State-by-State Overview of the High-Technology Industry* (Washington, DC: 1999), p. 91.

Page 31 Indicator: **Scientists and Engineers**
Sources: Scientists & Engineers: National Science Foundation, *Science and Engineering State Profiles: 1998 Data Update*, (NSF 99-311), (Arlington, VA, 1998). Employment: Bureau of Labor Statistics.

Page 32 Indicator: **Patents**
Sources: Patents: U.S. Patent and Trademark Office. Data are for utility patents. Employment: Bureau of Labor Statistics.

Page 33 Indicator: **Industry Investment in R&D**
Sources: Total Industry R&D 1995: National Science Foundation, *Research and Development in Industry 1995-96,* (NSF 99-312), (Arlington, VA, 1998). Gross State Product: Department of Commerce, Bureau of Economic Analysis, Regional Economic Analysis Division.

Page 34 Indicator: **Venture Capital**
Sources: Pricewaterhouse Coopers LLP, *Money Tree Report 1997* (Boston, MA: 1998). Gross State Product: U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Analysis Division.

WEIGHTING METHODOLOGY

Raw scores were calculated for each state for each indicator. In the composite analyses, the indicators were weighted so that closely correlated ones wouldn't bias the results. In addition, to measure the magnitude of differences between states and not just their ranks, in each indicator, scores were based on the standard deviation of each from the mean score of all of the states.

Weighting factors for final score:

KNOWLEDGE JOBS	Weight
Office Jobs	.75
Professional and Managerial Jobs	.75
Educational Level	1.0
TOTAL	**2.5**

GLOBALIZATION	
Export Orientation	1.0
FDI	1.0
TOTAL	**2.0**

DYNAMISM AND COMPETITION	
Gazelles	1.0
Churn	1.0
IPOs	1.0
TOTAL	**3.0**

DIGITAL TRANSFORMATION	
Classrooms with Internet	.33
Teachers with E-mail	.33
Teacher Tech Training	.33
Adults on Internet	1.0
Digital Government	1.0
".com" Domain Names	1.0
TOTAL	**4.0**

INNOVATION INFRASTRUCTURE	
High-tech Workers	.75
Scientists and Engineers	.75
Patents	.75
R&D	.75
Venture Capital	1.0
TOTAL	**4.0**

1. Bob Davis and David Wessel, *Prosperity* (New York: Times Books, 1998), p. 8.
2. Robert D. Atkinson and Randolph H. Court, *The New Economy Index: Understanding America's Economic Transformation* (Washington, D.C.: Progressive Policy Institute, 1998). http://www.neweconomyindex.org.
3. Ibid.
4. Ibid.
5. A similar set of old and New Economy characteristics has also been developed by John Doer, of Kleiner, Perkins, Caulfield & Byers (Menlo Park, California). We recognize that the factors represented in this table are generalizations that do not apply to every organization or individual. But they describe the overall changes we believe have taken place in the economy.
6. Atkinson and Court, *op. cit*.
7. The Census Bureau last surveyed manufacturers on their use of manufacturing technology in 1993. We have chosen not to use these data because the information is now over 6 years old and more recent data are not available.
8. Data are available on the number of Internet "backbones" per state, which are positively correlated (0.44) with overall New Economy scores. (Backbones are connections between "network access points," which are the junction points where major Internet service providers interconnect with each other.) However, backbone data do not work well as economic indicators because it is difficult to find suitable figures to use as denominators to control for the size and geographic characteristics of the states. The most useful measure would be to know the average distance of citizens and businesses from the nearest backbone. But, for practical purposes, this is incalculable.
9. Managerial and professional jobs were calculated using two of the Bureau of Labor Statistics' top-level occupational categories: "Managerial and Administrative Occupations," and "Professional, Paraprofessional, and Technical Occupations."
10. Each state's residents were classified by education level. The percentage of residents with more than a high school degree but no four-year college degree was weighted with a multiplier of 0.5. The multiplier for the percentage of residents with a college degree was 1, and the multiplier for graduate degrees was 2. The weighted percentages were added to find each state's total score. In other words, a state where 10 percent of the residents had a high school degree and some college (earning a weighted score of 5), 20 percent with a bachelor's degree (a weighted score of 20), and 10 percent with a graduate degree (a weighted score of 20), would earn a total score of 45.
11. Stuart A. Rosenfeld and Robert D. Atkinson, "Engineering Regional Growth," *Growth Policy in the Age of High Technology*, edited by Jurgen Schmandt and Robert Wilson (Boston: Unwin Hyman, 1990).
12. "What's New About Globalization," *The McKinsey Quarterly*, No. 2, 1997, p. 179.
13. Data on exports by state are available only for manufacturing.
14. Andrew B. Bernard and J. Bradford Jensen, "Exporters, Jobs, and Wages in U.S. Manufacturing: 1976-1987," *Brookings Papers in Microeconomics*, 1995, pp. 67-119.
15. Richard Florida and Martin Kenney, *Beyond Mass Production: The Japanese System and Its Transfer to the U.S.* (New York: Oxford Univ Press, 1993).
16. This U.S. average includes the District of Columbia.
17. The Center for Research in Electronic Commerce, University of Texas at Austin (http://www.InternetIndicators.com).
18. Forrester Research, Cambridge, Massachusetts.
19. David Moschella and Robert D. Atkinson, *The Internet and Society: Universal Access, Not Universal Service* (Washington, D.C.: Progressive Policy Institute, 1998). http://www.dlcppi.org/adobe/tech/society.pdf.
20. This U.S. average includes the District of Columbia.
21. The number of ".com" domains registered in a state will not be an exact measure of the number of businesses with Web sites for a number of reasons. For one thing, not all registered domains are actually in use. (Sometimes organizations register names they think they might use. And some domain names are held by speculators hoping to sell them.) Further, many ".com" domain names are registered by individuals for non-commercial purposes, to create personal Web pages, fan sites, and the like. And, of the domains registered to businesses, not all of them are for commercial purposes, per se. (Some companies create rudimentary Web pages simply to make sure they're on the map, just as they might place an ad in the Yellow Pages. Others invest hundreds of thousands or millions of dollars building elaborate e-commerce systems in order to sell to markets around the world.) Nonetheless, these factors will be true across all states, and thus should cancel each other out.
22. *Education Week*, "Technology Counts '98: Putting School Technology To the Test" (October 1998).
23. Kenan Patrick Jarboe and Robert D. Atkinson, *The Case for Technology in the Knowledge Economy: R&D, Economic Growth, and the Role of Government* (Washington, D.C.: Progressive Policy Institute, 1998). http://www.dlcppi.org/texts/tech/casefortech.pdf.
24. Organization for Economic Cooperation and Development, *The Knowledge Economy* (Paris: OECD, 1996), p. 9.
25. American Electronics Association, *Cyberstates* (Washington, D.C.: AEA, 1999).
26. This U.S. average includes the District of Columbia.
27. Atkinson and Court, *op. cit*.
28. Notwithstanding the fact that federal government measurements of economic output and productivity appear to undercount both, the magnitude of the mismeasurement does not appear to be large enough to completely offset the nominal productivity slowdown that has occurred.
29. Atkinson and Court, *op. cit*.
30. Ibid.
31. Senator Joe Lieberman (D-CT) was instrumental in placing language in the 1998 Workforce Investment Act that authorizes the U.S. Department of Labor to create a regional skills alliance program. As this report goes to press, the Labor Department is crafting a request for proposals to allocate the funds.
32. Robert D. Atkinson, *Boosting Technological Innovation Through the Research and Experimentation Tax Credit* (Washington, DC: Progressive Policy Institute, May 1999). http://www.dlcppi.org/texts/tech/boosting.htm.
33. Anna-Lee Saxenian, *Regional Advantage: Culture and Competition in Silicon Valley and Route 128* (Cambridge, MA: Harvard University Press, 1996).
34. Joseph Cortright, "Reinventing Economic Development," Staff Report to the State of Oregon's Legislative Committee on Trade and Economic Development, October, 1994.
35. David Osborne and Peter Plastrik, *Banishing Bureaucracy* (Reading, MA: Addison-Wesley Publishing Company, Inc., 1997).
36. The Center for Research in Electronic Commerce, op. cit.
37. Marc Strassman and Robert D. Atkinson, *Jump Starting the Digital Economy (with Department of Motor Vehicles-Issued Digital Certificates)* (Washington, D.C.: Progressive Policy Institute, June 1999).
38. Rosabeth Moss Kantor, *World Class: Thriving Locally in the Global Economy* (New York: Simon & Schuster, 1995).

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