Purpose and Methodology

The Progress & Freedom Foundation, in conjunction with IBM's Institute for Electronic Government, has examined the extent to which digital information technologies, including Internet-based technologies, are being implemented by state and local governments. The major goals of this project were to:

- **Analyze Overall Progress by the States**
- **Identify Major Opportunities for Digital Technology Implementation**
- **Identify and Assess "Best Practices"**
- **Identify Strengths and Weaknesses in Each State's Efforts**

Implementation of digital technologies by state and local governments is proceeding at a breathtaking pace. From education to taxes, regulation to welfare, "electronic democracy" to the criminal justice system, state and local governments are seizing the opportunities afforded by new technologies for more efficient, more interactive communications with constituents.

We believe that states that are proactive in developing advanced information services will benefit tremendously. Just as the growth and economic development of regions has traditionally been dictated by transportation infrastructure (waterways, highway systems, airports), quickly climbing the ramp to becoming a "digital state" will be crucial to reaping the benefits of the Information Age. In this context, the challenge for this study was three-fold:

- **Identify Key Information Technology Applications:** Determine which technologies are being applied in which specific areas of government.
- **Develop Metrics for Each Major Area of Application:** Devise standards or benchmarks that can be applied to measure the degree of progress by each government entity.
- **Obtain Current Information in a Fast-Moving Environment:** Through the Internet, through contacts with state government organizations or through direct contact with responsible officials, get the latest possible information about activities in each jurisdiction.

Accordingly, the work of this study began by identifying eight major areas of governmental activities where digital technologies are being applied:

- **Digital Democracy:** The application of digital technology, largely through the Internet, to permit improved citizen access to laws, legislators and the democratic process.

- **Higher Education:** Utilization of digital technologies, including but not limited to the Internet, for learning and communication, as well as for administrative functions such as applications and student loans.

- **Elementary and Secondary Education:** Utilization of digital technologies to enhance learning opportunities in grades K-12, including availability of computers and on-line access to the Internet.

- **Business Regulation:** Availability of regulations, forms, on-line assistance and/or the ability to actually submit required "paperwork" using the Internet or in digital form.

- **Revenue and Taxation:** Use of digital technologies to store and retrieve taxpayer information, and/or the ability for taxpayers to obtain information, submit returns or correspond with revenue authorities on-line.

- **Social Services:** Application of technologies such as electronic benefits transfer and "smart cards" for benefits delivery, and/or the availability of on-line information regarding program eligibility, application, etc.

- **Law Enforcement and the Courts:** Utilization of digital technologies by the judicial system, including on-line access to court opinions, use of digital communications by police agencies and the presence or absence of "digital signature" capability for contracts and filings.

- **Other Initiatives:** Ongoing efforts in state government to proactively plan for developments in information technology and to encourage state employees to get connected

For each of these seven areas, PFF developed a list of specific applications, and, for each application, established a set of benchmark criteria, ranked on a simple scale of zero to three. (See Appendix Two.) In some cases –– for example, the ratio of students to computers in K-12 classrooms –– the benchmarks are quantitative. In most cases, however, more qualitative judgments were required.

Data collection involved extensive use of the Internet. Researchers visited literally hundreds of Web sites to search for descriptive information about state programs and to actually test the availability of various functions. In addition, contacts were made and materials obtained from state government organizations and publications (e.g. *Government Technology* magazine), and –– when necessary –– telephone calls and/or "snail mail" was utilized as a backup.

Finally, because the implementation of new technologies is an ongoing process, we summarized our findings and sent state-specific material to all fifty governors to provide an opportunity to inform us of any gaps in our research.[1] We are confident, however, that progress will continue among state governments in utilizing digital technologies, and we will take pleasure in seeing the results of the first edition of this study rapidly become out-of-date.

Applications of Digital Technologies

Certainly, the central finding of our research is that the Internet and other digital technologies are transforming the way in which individuals can interact with the state, and vice versa. The rise of new forms of interactive media, such as the Internet, has decentralized information storage. As a consequence, individuals are empowered to be more knowledgeable of and more involved in the affairs of their government. Attending college lectures through teleconference, monitoring the status of proposed state legislation, receiving answers to specific tax or regulatory questions—all of these activities can be done on the Internet. This report sheds light on the progress being made on delivering upon the promise of new technologies in all fifty states.

Because this is the first study of its type, we are unable to make time-series comparisons. Nevertheless, we believe it safe to say that if we had we asked the same questions just three or four years ago, around the time of the Progress and Freedom Foundation's founding, we would have reported a much more primitive landscape than the one we see today. We expect that our future projects in this area will show further progress and that our benchmarks will continue to be raised, in synch with the increasing technological sophistication of the American citizenry and continued investment in information technology from private and public enterprises alike.

Notwithstanding the fact that this is really a moving picture, we think our snapshot of the Digital State in 1997 allows for some interesting observations. Obviously, we see that some applications of digital technologies are moving forward more rapidly than others. Table One shows, on a scale of zero-100, the extent to which digital technologies have been applied to various areas of government activity.

[1] As this report goes to print, we have only heard back from a handful of states for which we have again updated our data. We will take the lack of protestation from the others as a indication that, to the extent possible in a fast-changing environment, our report offers a fair representation of the individual states in mid-1997.

Figure One:
Leading Applications of Digital Technology

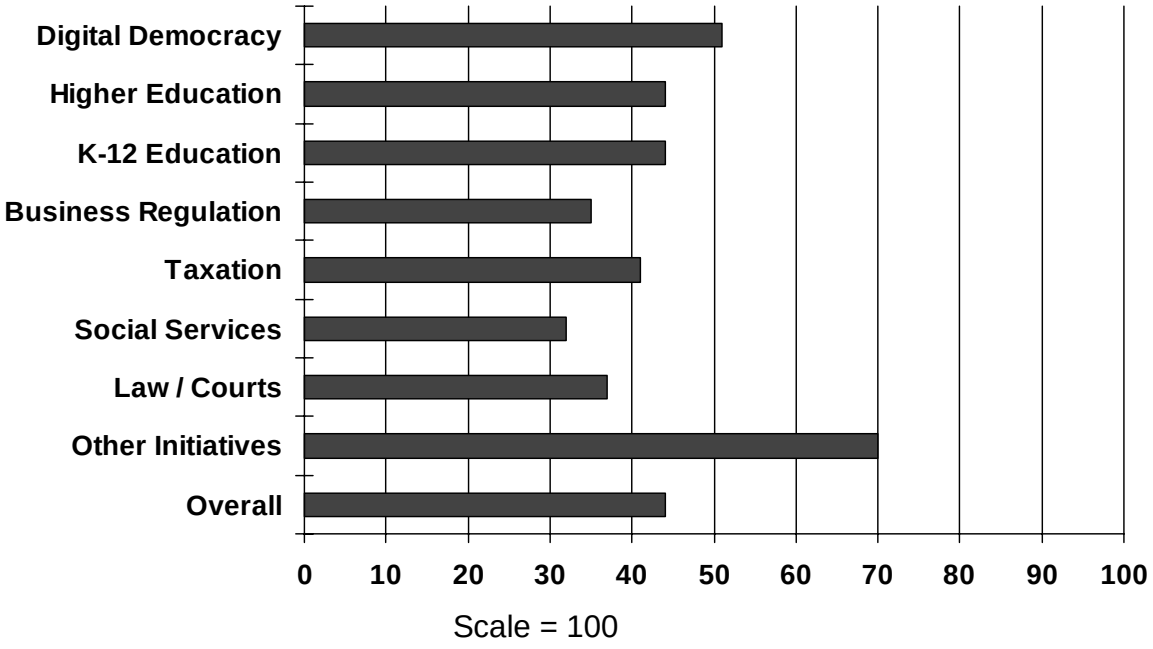

Figure One demonstrates the significant progress states are making in improving elementary and secondary schools' access to computers, including on-line access to the Internet. Additionally, "digital democracy" applications –– for example, the availability of on-line access to new laws, or the ability to E-mail one's state legislator –– are developing rapidly. At the other end of the spectrum, digital technologies are only beginning to be applied to facilitate compliance by business with state regulation, or to automate social service benefit programs.

This research also provides an opportunity to compare and contrast the efforts of the various states, both overall and on a "technology-by-technology" basis. In the next several sections of this report, we review the major applications being studied, in order to present for each: 1) an overall progress report on how the states did, 2) a list of the top ten states in the category, and 3) a note on "best practices" drawn from one of the leading states in the area.

Digital Democracy

Rank	State	Points
1	Alaska	92
2	Wisconsin	79
3	Indiana	75
3	Kansas	75
3	Washington	75
3	Wyoming	75
7	Arizona	71
7	Florida	71
7	Missouri	71
7	Virginia	71

In our first category, we assessed the extent to which citizens have access to laws, legislators and the democratic process through the Internet. Among our findings, we were impressed to discover that a majority of state governments displayed proposed legislation on Web sites. It was also common for governors' e-mail addresses to be hot-linked to the site and for citizens to be able to access an archive of existing state statutes. On the other hand, few states allowed for citizens to directly comment on specific pieces of legislation and only Alaska appeared to be utilizing the Web for voting on referendums, petitions or local initiatives (although South Carolina does have a similar pilot program in place).

With the exceptions of Vermont and New Hampshire, the New England region, by and large, scored below average in this category. In contrast, four of the five states in the Pacific region were solidly in the top half of the range. Table One displays our state-by-state findings, with Alaska and Wisconsin leading the pack in embracing the opportunities of digital democracy.

BEST PRACTICES
ALASKA

Alaska's Information and Teleconferencing Section of the Legislative Affairs Agency certainly appears to be fulfilling its goals "to provide Alaskans with the objective information they need to make informed decisions about the public policy choices confronting the Legislature and to provide legislators with open lines of communication with Alaskans." Within the state government Web site, one can find profiles and e-mail links to all Alaska's state legislators as well as the governor and members of his staff. States that scored poorly in our study should emulate Alaska's Bill Action and Status Inquiry System (BASIS), which is an extremely thorough database of existing and proposed legislation, capable of being searched in more than a dozen ways (by subject, sponsor, status, etc.).

TABLE ONE:
State by State Results,
Digital Democracy

Rank	State	Points
1	Alaska	92
2	Wisconsin	79
3	Indiana	75
3	Kansas	75
3	Washington	75
3	Wyoming	75
7	Arizona	71
7	Florida	71
7	Missouri	71
7	Virginia	71
11	Iowa	67
12	California	63
12	Idaho	63
12	Maryland	63
12	Nebraska	63
12	New Jersey	63
12	Oregon	63
12	South Carolina	63
12	Vermont	63
20	New Hampshire	58
20	Tennessee	58
22	Minnesota	54
22	Nevada	54
22	New York	54
22	North Dakota	54

Rank	State	Points
26	Colorado	50
26	Kentucky	50
26	Michigan	50
26	Montana	50
30	Arkansas	46
30	New Mexico	46
30	North Carolina	46
30	Texas	46
30	West Virginia	46
35	Massachusetts	42
35	Oklahoma	42
35	South Dakota	42
35	Utah	42
39	Delaware	38
39	Rhode Island	38
41	Maine	33
41	Pennsylvania	33
43	Alabama	29
43	Georgia	29
45	Hawaii	25
45	Louisiana	25
47	Ohio	21
48	Connecticut	13
48	Illinois	13
50	Mississippi	8

Higher Education

As shown in Table Two, progress in the area of Higher Education is somewhat less rapid than Digital Democracy applications. Researchers for this report expected to find that individuals could obtain information about –– or even apply for –– financial aid on line. Similarly, it was anticipated that state universities would be accepting applications for admissions through their Web sites. And there were high expectations for the availability of on-line (or "televised") courses.

Rank	State	Points
1	Indiana	80
2	Michigan	78
3	Oregon	72
4	Virginia	67
5	Washington	67
6	Illinois	60
7	Mississippi	60
8	Maryland	58
9	Five states tied for ninth place	56

At present, these expectations are being met in only a few states, although most public institutions of higher learning appear to recognize the importance of keeping pace with new digital technologies. We expect that this category will continue to develop rapidly over the next few years.

It is not surprising that the Western states faired well in this category of our survey (both the West and Midwest regions averaged 3 and 4 points better than the South and East regions, respectively). At the Western Governors' Association's annual meeting in June 1995, Utah Governor Mike Leavitt suggested that western universities collaborate in the development of distance learning courses, rather than duplicate each others' work. By February 1997, they had approved a document titled, "From Vision to Reality: A Western Virtual University," which outlines plans to deliver full academic degrees by assembling coherent sets of on-line courses from perhaps several different institutions.

BEST PRACTICES
INDIANA / MICHIGAN

Some of the better scores in the Higher Education category come from states with universities in the Big Ten. Indiana University boasts five degrees that can be obtained entirely through distance learning by combining independent study with courses taught off the Internet, television and videotape. Moreover, there is a hot-link on the front page of the state's Web site that provides access to student loans and grants. Some of Michigan's public universities have on-line application capability, and virtually all faculty and students can be accessed through the Web. Additionally, there are some graduate-level programs at public colleges that require students to obtain computers as part of admission.

TABLE TWO:
State by State Results,
Higher Education

Rank	State	Points
1	Indiana	80
2	Michigan	78
3	Oregon	72
4	Virginia	67
4	Washington	67
6	Illinois	60
6	Mississippi	60
8	Maryland	58
9	Arizona	56
9	Maine	56
9	Massachusetts	56
9	West Virginia	56
9	Wisconsin	56
14	New Jersey	53
14	Oklahoma	53
16	Alaska	50
16	Florida	50
16	Montana	50
16	North Carolina	50
16	Ohio	50
16	Tennessee	50
16	Utah	50
23	Vermont	47
24	Hawaii	44
24	Minnesota	44

Rank	State	Points
24	New Hampshire	44
24	North Dakota	44
28	Nevada	42
28	New York	42
30	California	39
30	Colorado	39
30	Kansas	39
30	Kentucky	39
34	Arkansas	33
34	Georgia	33
34	Iowa	33
34	Louisiana	33
34	Nebraska	33
34	Pennsylvania	33
34	Wyoming	33
41	Connecticut	28
41	Delaware	28
41	Idaho	28
41	New Mexico	28
41	Texas	28
46	Alabama	22
46	Missouri	22
46	Rhode Island	22
46	South Carolina	22
46	South Dakota	22

Elementary and Secondary Education

Given the national focus on improving K-12 education, it is perhaps not surprising that most states are doing better on this front. According to data published in early 1997 by the Education Testing Services Policy Information Center, most states have a majority of their elementary and secondary schools on-line. Around 20% of states had student to multimedia computer ratios of 1:16 or better, although it was more common to find between 25-49 students per multimedia computer.[2]

Rank	State	Points
1	Arizona	89
1	Georgia	89
3	Indiana	78
3	Michigan	78
3	New Jersey	78
3	North Carolina	78
3	Oregon	78
7	Six states tied for eighth place	67

Less encouraging was states' success in disseminating material on local school performance, as most states had no "School Report Cards" available on-line. In some cases, it is proactive local school districts that are making efforts to involve parents by allowing them to access information on children's school performance on-line.

BEST PRACTICES
ARIZONA / GEORGIA

Arizona and Georgia both score high in the K-12 category, but for different reasons. Georgia has delivered upon its "Statewide Education Technology Plan Blueprint" by getting 98% of its public schools connected to the Internet. Georgia's elementary and secondary schools also enjoy an excellent 15 to 1 ratio of multimedia computers to students. Alternatively, Arizona does not score as high on these quantitative measures, but it does offer a superlative school report card system over the Web (available at the following address: http://www.ade.state.az.us/reportcards/). It has a search engine which can be used to access information on particular elementary and secondary schools. Report cards contain basic information about the educational program, enrollment, school honors, promotion and attendance rates, and other pertinent data.

[2] The average ratio of students to multimedia computers is 24 to 1, according to the ETS report, *Computers and Classrooms: The Status of Technology in U.S. Schools*.

TABLE THREE:
State by State Results,
K-12 Education

Rank	State	Points
1	Arizona	89
1	Georgia	89
3	Indiana	78
3	Michigan	78
3	New Jersey	78
3	North Carolina	78
3	Oregon	78
8	Alabama	67
8	California	67
8	Colorado	67
8	North Dakota	67
8	Tennessee	67
8	Vermont	67
14	Florida	56
14	Nevada	56
14	Utah	56
14	Virginia	56
14	Wisconsin	56
19	Arkansas	44
19	Hawaii	44
19	Kentucky	44
19	Maryland	44
19	Missouri	44
19	New York	44
19	South Carolina	44

Rank	State	Points
19	South Dakota	44
19	Washington	44
19	Wyoming	44
29	Alaska	33
29	Connecticut	33
29	Delaware	33
29	Maine	33
29	Massachusetts	33
29	Minnesota	33
29	Mississippi	33
29	Nebraska	33
29	New Hampshire	33
29	West Virginia	33
39	Idaho	22
39	Kansas	22
39	Louisiana	22
39	Montana	22
39	Pennsylvania	22
39	Rhode Island	22
39	Texas	22
46	Illinois	11
46	Iowa	11
46	Ohio	11
46	Oklahoma	11
50	New Mexico	0

Business Regulation

Rank	State	Points
1	Arizona	75
1	Florida	75
1	Kansas	75
1	Maryland	75
1	Massachusetts	75
6	Oregon	67
7	Indiana	58
7	Michigan	58
7	Missouri	58
7	North Carolina	58
7	Washington	58
7	Wisconsin	58

One of the clear findings of this study is that states are not effectively using digital technologies to facilitate compliance with business regulation. Researchers expected to find regulatory codes, new business applications, required "paperwork" and procurement documents available through the Internet. As shown in Table Four, few states have made such progress. In fact, nine states earned no points whatsoever along the four different measures we used in this category.

While no individual state stands out as having thoroughly embraced the opportunities inherent in this category, we recommend looking to the Web sites of Arizona, Florida, Kansas, Maryland, and Massachusetts –– each scored 75 on our zero to 100 point scale –– for effective illustrations of how state governments can make their IT resources friendly to businesses and entrepreneurs.

BEST PRACTICES
FLORIDA

Florida is one of the five states that tied for the #1 position in the Business Regulation category. Its Department of Business and Professional Regulation provides Florida residents with access to licensing and other regulatory material, with at least a few forms available on-line with others promised to be on the way. The state also has strong on-line help facilities and a unique search engine available through its advanced Government Services Direct site, which allows users to locate recent articles and on-line material relevant to their areas of business interest.

TABLE FOUR:
State by State Results,
Business Regulation

Rank	State	Points
1	Arizona	75
1	Florida	75
1	Kansas	75
1	Maryland	75
1	Massachusetts	75
6	Oregon	67
7	Indiana	58
7	Michigan	58
7	Missouri	58
7	North Carolina	58
7	Washington	58
7	Wisconsin	58
13	Alaska	50
13	Maine	50
13	Minnesota	50
13	Montana	50
13	New Jersey	50
13	New York	50
13	Oklahoma	50
13	Wyoming	50
21	California	42
21	Connecticut	42
21	Nebraska	42
21	New Mexico	42
21	Vermont	42

Rank	State	Points
26	Iowa	33
26	Idaho	33
26	New Hampshire	33
26	Ohio	33
26	Texas	33
31	Pennsylvania	25
31	Rhode Island	25
33	Colorado	17
33	Illinois	17
33	Louisiana	17
33	Mississippi	17
33	Nevada	17
33	North Dakota	17
33	Utah	17
33	Virginia	17
33	West Virginia	17
42	Alabama	0
42	Arkansas	0
42	Delaware	0
42	Georgia	0
42	Hawaii	0
42	Kentucky	0
42	South Carolina	0
42	South Dakota	0
42	Tennessee	0

Taxation

State revenue authorities appear to be doing a somewhat better –– or at least more even –– job of applying digital technologies than their regulatory brethren. Here, researchers looked for many of the same capabilities as in the regulatory area: the availability of tax forms, the ability to submit tax information via e-mail, on-line help facilities and so forth. As shown in Table Five, all but three states offer some or all of these capabilities, and roughly 40% have a fairly complete index of tax forms available to be downloaded.

Rank	State	Points
1	Maryland	93
2	Kansas	80
2	Wisconsin	80
4	Florida	73
4	Massachusetts	73
4	New Mexico	73
7	Missouri	67
7	Oklahoma	67
9	Four states tied for ninth place	60

The best in this category — including Maryland, Kansas, Florida, Massachusetts and New Mexico –– offer sophisticated on-line help facilities and/or are in the process of implementing digital record-keeping systems that will greatly facilitate their ability to respond to taxpayer inquiries.

BEST PRACTICES
MARYLAND

The Maryland Electronic Capital has a convenient "Getting Things Done in Maryland" button that acts as a functional resource, directing individuals to information appropriate for common tasks. By requesting "tax assistance," one receives a list of revenue department phone numbers, answers to frequently asked questions and a hot-link to the Comptroller of the Treasury's Web site where tax forms can be downloaded. Not only does Maryland have a complete set of tax forms in ADOBE.PDF format, it also makes available the entire booklets including instructions. Taxes can be filed on-line through a third-party and there is also access to help resources which will respond to specific tax questions.

TABLE FIVE:
State by State Results,
Taxation

Rank	State	Points
1	Maryland	93
2	Kansas	80
2	Wisconsin	80
4	Florida	73
4	Massachusetts	73
4	New Mexico	73
7	Missouri	67
7	Oklahoma	67
9	Delaware	60
9	New Jersey	60
9	Pennsylvania	60
9	Washington	60
13	Illinois	58
13	Louisiana	58
15	Georgia	53
15	Minnesota	53
15	Virginia	53
18	Indiana	47
18	Maine	47
18	Oregon	47
18	Rhode Island	47
18	Tennessee	47
18	Wyoming	47
24	New York	42
25	Alabama	40

Rank	State	Points
25	Arizona	40
25	Montana	40
25	South Carolina	40
29	Alaska	33
29	California	33
29	Colorado	33
29	Kentucky	33
29	Nebraska	33
29	New Hampshire	33
29	Texas	33
29	Utah	33
37	North Carolina	27
38	Connecticut	20
38	West Virginia	20
40	Hawaii	17
40	Ohio	17
42	Arkansas	13
42	Idaho	13
42	Iowa	13
42	North Dakota	13
46	Michigan	7
46	South Dakota	7
48	Mississippi	0
48	Nevada	0
48	Vermont	0

Health, Welfare and Social Services

Much has been written in recent months about the impact of "devolution" on America's welfare programs, especially with respect to the increased burdens being placed on state social service agencies and administrators. As shown in Table Six, the concerns that have been expressed about the ability of state agencies to meet the demands of the new system appear to be valid –– at least with respect to their digital technology applications.

Rank	State	Points
1	Oklahoma	58
2	Montana	52
3	New Jersey	50
3	New Mexico	50
3	Washington	50
3	Wisconsin	50
7	Illinois	48
7	Maryland	48
7	Oregon	48
10	Delaware	46

A majority of states were found to have no general help mailbox on-line, no digital record-keeping system, and no benefit forms on-line (much less the ability to actual apply on-line). While most states offer on-line job search assistance of some sort, much-heralded experiments with Electronic Benefits Transfer and "Smart Card" systems are, with few exceptions, just that: experiments. In fact, forty-four states scored less than 50 on the zero to 100 scale that we used to measure success in implementing digital technologies to deliver social services. Although no region was especially strong in this category, the South scored on average a very disappointing 27 on our zero-100 scale, despite the fact that the region contains Oklahoma, which scored #1 in this component of our study.

BEST PRACTICES
OKLAHOMA

Though very informative, Oklahoma's Web site has little interactive capability: one cannot apply for benefits on-line and most services do not have forms available over the Web. However, given the lack of competition from its peers and the strength of its digital record-keeping and electronic benefit transfer program, Oklahoma commands top honors in our Health, Welfare and Social Services category. The state is utilizing EBT for food stamps and cash disbursements under its Temporary Assistance for Needy Families program; our research indicates that, as of August 1, 1997, 40% of Oklahoma's caseload was implemented. Working with Citibank to keep records updated on-line, Oklahoma has been able to eliminate the majority of the paperwork associated with handling benefit programs.

TABLE SIX:
State by State Results,
Health, Welfare and Social Services

Rank	State	Points
1	Oklahoma	58
2	Montana	52
3	New Jersey	50
3	New Mexico	50
3	Washington	50
3	Wisconsin	50
7	Illinois	48
7	Maryland	48
7	Oregon	48
10	Delaware	46
11	Alaska	42
11	Colorado	42
11	Missouri	42
11	New Hampshire	42
11	North Dakota	42
16	Maine	38
16	South Dakota	38
16	Vermont	38
19	Arizona	33
19	Michigan	33
19	Minnesota	33
19	New York	33
19	North Carolina	33
24	Iowa	29
24	Texas	29

Rank	State	Points
24	Utah	29
24	Wyoming	29
28	Mississippi	28
29	Connecticut	25
29	Florida	25
29	Hawaii	25
29	Idaho	25
29	Indiana	25
29	Kansas	25
29	Nebraska	25
29	Pennsylvania	25
29	Tennessee	25
38	Alabama	21
38	Arkansas	21
38	Massachusetts	21
38	Rhode Island	21
38	South Carolina	21
38	Virginia	21
44	Louisiana	20
45	Georgia	17
45	Kentucky	17
47	Nevada	14
48	Ohio	13
49	California	8
49	West Virginia	8

Law Enforcement and the Courts

Rank	State	Points
1	Washington	73
2	Florida	67
3	Michigan	60
3	Missouri	60
3	New Mexico	60
6	California	53
6	Montana	53
6	New Jersey	53
6	North Carolina	53
6	Wisconsin	53

Another area in which development is proceeding only slowly concerns the legal and judicial system. As shown in Table Seven, fewer than one-fifth of the states score better than "fifty percent" with respect to this category. Researchers here were measuring the ability to find court opinions available on-line, the utilization of digital technologies for law enforcement communication and the ability to reach public safety officials via the Web. While many states have begun putting State Supreme and Appellate Court decisions on-line, we found less evidence that law enforcement bodies are harnessing new technologies currently available. The most developed programs that we found were in Washington state, Florida, Missouri, Michigan and New Mexico.

From a regional perspective, the Northeast appears to be lagging behind in this area, scoring on average 31 points, where the other three regions placed in the upper 30's in our zero-100 scale.

BEST PRACTICES
WASHINGTON

Making law enforcement and the court system accessible to its citizens and efficient for its administrators is one of several things that Washington state – the highest-scoring state in our study – does well. The state keeps opinions of its Supreme Court and Court of Appeals on-line, while offering hot-links to its State Law Library for legal research. The state makes available a number of forms, and offers plenty of hand-holding on relevant subjects. A victim of domestic violence can learn specifics about what a protection order actually does, and then download the appropriate form via the same Web-based resource. Washington state also benefits from an integrated criminal information management system and that a number of counties that have law enforcement officers actively using computers for digital communications.

TABLE SEVEN:
State by State Results,
Law Enforcement and the Courts

Rank	State	Points
1	Washington	73
2	Florida	67
3	Michigan	60
3	Missouri	60
3	New Mexico	60
6	California	53
6	Montana	53
6	New Jersey	53
6	North Carolina	53
6	Wisconsin	53
11	Ohio	50
12	Maine	47
12	New Hampshire	47
12	South Carolina	47
15	Maryland	44
15	Mississippi	44
17	Alaska	40
17	Arkansas	40
17	Colorado	40
17	Kansas	40
17	Oregon	40
17	Pennsylvania	40
17	Texas	40
17	Virginia	40
25	Alabama	33

Rank	State	Points
25	Idaho	33
25	Indiana	33
25	Minnesota	33
25	Nebraska	33
25	North Dakota	33
25	Oklahoma	33
25	South Dakota	33
25	Utah	33
25	West Virginia	33
35	Arizona	27
35	Delaware	27
35	Georgia	27
35	Iowa	27
35	Massachusetts	27
35	Tennessee	27
35	Wyoming	27
42	Louisiana	25
43	Connecticut	20
43	Rhode Island	20
45	Kentucky	13
45	Vermont	13
47	Hawaii	11
47	Illinois	11
47	New York	11
50	Nevada	0

Other Initiatives

Our final category (see Table Eight) assesses the level of ongoing effort being channeled by state governments into IT applications. The large majority of states score very highly here—due to success in organizing a formal Information Technology Commission (often headed by a cabinet-level Chief Information Officer) and ongoing efforts to increase bandwidth in order to increase the efficiency of Internet resources.

Rank	State	Points
1	Utah	100
1	Washington	100
3	Maine	93
4	Delaware	92
4	Massachusetts	92
6	Minnesota	87
6	Nebraska	87
6	Wyoming	87
9	Georgia	83
9	New York	83

There was less consensus about the merits of building an intranet for the state government: respondents were fairly evenly divided between those that have an intranet, those in the process of constructing one, and those that are not (sometimes because intranets already exist at the agency level). We also found it difficult to locate good data regarding state employees' access to the Internet, but we believe this can generally be depicted as limited at best, and often negligible.

BEST PRACTICES
UTAH

Along with Washington state, Utah achieves a perfect score in our final category, Other Initiatives, which basically tests the pulse of state government authorities to see if they are gearing up to embrace the information revolution. A document published in June 1996, "State of Utah Coordination of State Information Technology," makes it plain that Utah intends to be a major participant in using digital technologies to reinventing a more efficient and accessible government. The state's score in our study affirms that Utah is putting resources behind its plan to use "…these new opportunities to assure increased productivity, improved government services, expanded arenas for business and entrepreneurial opportunity, and an enhanced quality of life for all Utahns." While Utah wound up right in the middle of our overall scores in this study (tied for #25 out of the 50 states), the state's strong Other Initiatives score suggests it may be able to improve its position by the time the next edition of this study is released.

TABLE EIGHT:
State by State Results,
Other Initiatives

Rank	State	Points
1	Utah	100
1	Washington	100
3	Maine	93
4	Delaware	92
4	Massachusetts	92
6	Minnesota	87
6	Nebraska	87
6	Wyoming	87
9	Georgia	83
9	New York	83
11	Florida	80
11	North Carolina	80
11	Ohio	80
11	Oklahoma	80
11	Oregon	80
16	Nevada	78
17	Arkansas	75
17	California	75
17	Colorado	75
17	South Carolina	75
17	Virginia	75
22	Arizona	73
22	Missouri	73
22	New Hampshire	73
22	New Mexico	73

Rank	State	Points
22	Pennsylvania	73
22	West Virginia	73
22	Wisconsin	73
29	Alabama	67
29	Idaho	67
29	Illinois	67
29	Iowa	67
29	Kansas	67
29	Kentucky	67
29	Michigan	67
29	Mississippi	67
29	Texas	67
38	Indiana	60
38	Louisiana	60
38	Montana	60
41	Connecticut	58
42	Alaska	53
42	Maryland	53
42	North Dakota	53
45	Hawaii	50
46	New Jersey	47
46	Rhode Island	47
46	South Dakota	47
49	Tennessee	33
49	Vermont	33

State by State Results: A Digital Report Card

Rank	State	Points
1	Washington	66
2	Wisconsin	63
3	Florida	62
3	Oregon	62
5	Maryland	60
6	Arizona	58
7	Indiana	57
7	New Jersey	57
9	Missouri	55
10	Michigan	54

In the end, this research project also permits overall cross-state comparisons on progress in implementing digital technologies. Such comparisons must be drawn with caution, for much of our analysis is qualitative developments in all of these areas are moving very rapidly. Our "snapshot" risks missing the speed with which individual states are moving forward.

With these caveats in mind, it still seems possible to venture some judgment of which states appear to be making the most rapid progress in applying digital technologies to the business of government. Though each state has both areas of relative strength and weakness in regard to digital technology implementation, the top ten scores go to states that ranked reasonably high across our spectrum of categories.

As Table Nine shows, Washington state tops our list of the most digital states in 1997. Its 66 points ranked well above the average score (44), and it is noteworthy that Washington scored among the top ten states in 8 of our 9 categories.

Perhaps the more important finding apparent from Table Nine, however, is this: No state scores above 66 out of a possible 100 points, with 50% of the states scoring below 46. In short, many states have a long way to go to maximize the use of digital technologies, in particular Mississippi, Rhode Island, Connecticut, South Dakota and Hawaii, which pulled up the rear end in our study. Moreover, since even the “winners” have clear areas of weakness, we believe all states need to continue to pursue opportunities to capitalize on innovation in information technology. And one further thing is assured: by the time states reach the benchmarks set in this study, the bar will have moved again, probably a good distance.

OVERALL BEST PRACTICES
WASHINGTON

Winning our Digital State Award for 1997 is the state of Washington, which excels in several categories and shows weakness in few. A visit to the Washington state Web site provides a good primer in what the effective implementation of digital technologies can provide. In terms of Digital Democracy, Washington provides complete state statutes and proposed legislation along with amendments, tracking and voting. Citizens can send e-mail to most legislators and to the governor via hot-linked e-mail addresses, and comments on proposed legislation can be sent to the sponsoring representative.

As discussed previously, Washington ranks #1 in applying digital technologies to law enforcement and the courts, benefiting from an integrated criminal information management system and a number of counties that have law enforcement officers actively using computers for digital communications. The state puts court opinions on its Web site, and has many police officers' e-mail addresses live on the Web.

Where does Washington have room for improvement? Most noticeably, the state is only fair on K-12 Education, and could benefit from trying to supply parents' with more information on individual schools and districts. Between 51%-75% of Washington's public schools have Internet access, according to the most recent available information, and there are between 17 and 24 students for each multimedia computer. While Washington scores in the top 20% for both our Revenue and Social Services categories, the state does not permit on-line filing capacity for either and does not have forms available for download regarding eligibility for social benefits.

Of course, in the world of digital technologies, resting on laurels is a fast road to obsolescence. The question is whether Washington can maintain its lead in the race to become a true digital state, at the same time that the definition of that term evolves with the introduction of new technology. Given that our research shows that a state commission oversees information technology policy and that it is busy with efforts to upgrade bandwidth by laying fiber OC1 lines (check that this makes sense), we are optimistic that Washington state can continue to be a leader in the digital technology implementation.

TABLE NINE:
Overall State by State Results,
A Digital Report Card

Rank	State	Points
1	Washington	66
2	Wisconsin	63
3	Florida	62
3	Oregon	62
5	Maryland	60
6	Arizona	58
7	Indiana	57
7	New Jersey	57
9	Missouri	55
10	Michigan	54
11	North Carolina	53
11	Kansas	53
13	Massachusetts	52
14	Virginia	50
14	Maine	50
16	Alaska	49
16	Wyoming	49
16	Minnesota	49
16	Oklahoma	49
20	California	47
20	Montana	47
22	New Mexico	46
22	New Hampshire	46
24	Colorado	45
24	Utah	45

Rank	State	Points
24	New York	45
27	Nebraska	44
28	Georgia	41
29	Delaware	40
29	North Dakota	40
31	Pennsylvania	39
31	South Carolina	39
33	Tennessee	38
33	Vermont	38
35	Texas	37
36	West Virginia	36
36	Idaho	36
36	Illinois	36
39	Iowa	35
39	Alabama	35
41	Ohio	34
41	Arkansas	34
43	Kentucky	33
43	Louisiana	33
43	Nevada	33
46	Mississippi	32
47	Rhode Island	30
47	Connecticut	30
49	South Dakota	29
50	Hawaii	27

Conclusions

As suggested above, the research reported here is a rough attempt at quantifying an ongoing process with many moving parts; conclusions should be drawn with caution. This having been said, three things seem clear:

- First, as remarked at the outset, the progress toward effectively applying new digital technologies over recent years has been impressive. There appears to be an emerging consensus that 1) the dawning “Information Age” requires government institutions to be more accessible to constituents and 2) the Internet and other digital technologies can be used to achieve this goal. That said, virtually every state studied — even the “winners" — still has a long way to go in opening all their functions to new technologies. Each state has at least one significant area of weakness. Virtually none of the states studied can be proud of their efforts in areas such as social service and Business Regulation applications.

- Second, there is a wide gap between the "best" states and those at the back of the pack. States that fall behind in the implementation of these technologies may find themselves caught in a vicious (downward) spiral: unable to attract high-tech businesses, saddled with increasingly obsolete systems and offering substandard levels of government service to an increasingly demanding populace. The race to become a "digital state" is one no state can afford to lose.

- Third, in virtually every state studied here, rapid progress is being made –– or at least planned. Just as the digital revolution itself has caused the private sector to "manage at the speed of change," so too are state governments feeling the need for rapid progress. For those states now in the lead, this thought should serve as a caution against any instinct to rest on their laurels. Those that have some catching up to do can take solace in the fact that this race has only just begun.

Appendix One:
State Report Cards

Over the following fifty pages we present brief report cards, in alphabetical order, displaying how each state fared in our quantitative analysis and providing a snapshot summary of our research.[3] We wish again to highlight certain caveats that should be understood to place our findings in the proper context:

- This report was researched over a period of months, during which time some of our data may have become out of date. We provided states an opportunity to review our findings for inaccuracies before we sent our report to print. However, given the fast-changing nature of the subject being studied and the many demands on state legislators time, we accept that our findings may be incomplete.

- Our researchers also relied upon contacts at state governments to report on their own agencies' activities through the questionnaire we distributed (see Appendix One). Our quantified results may be influenced by differences in interpretation of certain benchmarks in the questionnaire.

Having made the appropriate allowances that our findings are hardly definitive, we do believe that the following "report cards" are useful indicators of relative progress along the path to a more technologically sophisticated form of state governance. As the first study to attempt to quantify these efforts along such a multitude of dimensions, we believe this study contributes to understanding the opportunities at hand for governments to harness new digital technologies.

[3] Note that report cards do not denote when rankings indicate a tie. For instance, nine states scored zero points in our Business Regulation section; in our presentation, they all tie for 42nd place in the category.

ALABAMA	Score (Scale = 100)	South Region Ranking	National Ranking
Digital Democracy	29	12	43
Higher Education	22	15	46
K-12 Education	67	3	8
Business Regulation	0	10	42
Revenue / Taxes	40	9	25
Health and Social Services	21	9	38
Law Enforcement / Courts	33	9	25
Other Initiatives	67	10	33
OVERALL	35	#10 Out of 16 States	#39 Out of 50 States

While ranking near the middle of the fifty states overall, Alabama demonstrates a real strength in its efforts to bring digital technologies to its primary and secondary schools. Approximately 95% of Alabama's public schools have Internet access, although its ratio of roughly 34 students per multimedia computer trails the national average. The state Department of Education has posted on its Web site the names of Alabama schools nominated for the U.S. DOE's "Blue Ribbon" performance award, and has noted the winner of the Alabama "Teacher of the Year" award.

Three counties in Alabama currently have a pilot program to deliver food stamps through electronic benefit transfers. We also are seeing experiments occurring in the field of criminal information management: live scans for fingerprints, electronic postings of public and private reprimands of Alabama lawyers, and real-time connections between the Alabama Criminal Justice Information Center and the National Crime Information Center.

Although Alabama scored weakly in the areas of Social Services, Business Regulation, and (to a lesser extent) Taxation, these are all areas currently being targeted by its electronic commerce work group. The state's overall effort to coordinate the implementation of digital technologies is being headed by the Data Systems Management Division. The state is looking at building a state government intranet and have begun increasing bandwidth by constructing of a frame relay network of T1 and T3 lines. That Alabama is ramping up its efforts in employing digital technologies is apparent from information received just hours before our report went to print, indicating that business regulation forms are now available on-line through the Secretary of State's Web site among other ongoing developments. Unfortunately, we were unable to amend update our scoring and related tables for the modest improvements suggested by the more recent update.

ALASKA	Score (Scale = 100)	West Region Ranking	National Ranking
Digital Democracy	92	1	1
Higher Education	50	4	16
K-12 Education	33	10	29
Business Regulation	50	4	13
Revenue / Taxes	33	7	29
Health and Social Services	42	5	11
Law Enforcement / Courts	40	5	17
Other Initiatives	53	12	42
OVERALL	49	#4 Out of 13 States	#16 Out of 50 States

The Information and Teleconferencing Section of the Legislative Affairs Agency certainly appears to be fulfilling its goals "to provide Alaskans with the objective information they need to make informed decisions about the public policy choices confronting the Legislature and to provide legislators with open lines of communication with Alaskans." Alaska ranked #1 across the nation along our measure of Digital Democracy implementation. Within the state government Web site, one can find profiles and e-mail links to all Alaska's state legislators, as well as Governor Tony Knowles and members of his staff. Moreover, the state's Bill Action and Status Inquiry System (BASIS) is an extremely thorough database of existing and proposed legislation, which can be searched in more than a dozen ways (by subject, sponsor, status, etc.).

While ranking #1 in Digital Democracy, Alaska also scores in the upper half of several other categories. While business regulatory forms cannot be filed on-line, some can indeed be found on state (and local, in the case of Juneau) Web sites. Most departments––including revenue, commerce, and human services––have general help mailboxes or hot-linked e-mail addresses for division directors.

However, on the negative side, the most recent available data showed Alaska to be below national averages in getting K-12 schools hooked up to the Internet, and there is a wide disparity in ratios of students-to-computers across the state.

ARIZONA	Score (Scale = 100)	West Region Ranking	National Ranking
Digital Democracy	71	4	7
Higher Education	56	3	9
K-12 Education	89	1	1
Business Regulation	75	1	1
Revenue / Taxes	40	5	25
Health and Social Services	33	7	19
Law Enforcement / Courts	27	10	35
Other Initiatives	73	8	27
OVERALL	58	#3 Out of 13 States	#6 Out of 50 States

Arizona ranks #1 in our category concerning elementary and secondary public schools. The primary differentiating factor here — while Arizona has strong scores in measures like student-to-computer ratios and percentage of schools with Internet access, at least ten states rank better than Arizona in measure — is Arizona's superlative school report card system. Parents and other interested individuals can access a database through the Web (http://www.ade.state.az.us/reportcards/) which allows them to search for specific schools. Report cards contain basic information about the educational program, enrollment, school honors, promotion and attendance rates, and other pertinent data.

Other areas where Arizona appears to be progressing ahead of the curve include Digital Democracy (Arizona offers on-line access to statutes, proposed legislation, minutes of committee meetings and e-mail addresses of elected officials) and Business Regulation (where it again ties for the #1 position nationally).

Given Arizona's success in the Business Regulation category, for which most states scored poorly, it is surprising that the state's revenue department is not as developed, with no on-line-filing available and no ability to e-mail questions to a general help mailbox or individuals in the department. In terms of Social Services, Arizona is, in some cases, transferring unemployment benefits electronically to banks, and it is investigating the idea of using "smart cards" to further automate the distribution of benefits. While the state scored below average in our Law/Courts category, Arizona seems to be making a significant effort in general to utilizing new digital technologies. At present, various agencies are building intranets, and a statewide project to increase bandwidth is being undertaken by the state's cabinet-level Chief Information Officer.

ARKANSAS	Score (Scale = 100)	South Region Ranking	National Ranking
Digital Democracy	46	6	30
Higher Education	33	10	34
K-12 Education	44	7	19
Business Regulation	0	10	42
Revenue / Taxes	13	15	42
Health and Social Services	21	9	38
Law Enforcement / Courts	40	6	17
Other Initiatives	75	6	22
OVERALL	34	#11 Out of 16 States	#41 Out of 50 States

Arkansas scores highly in the area of K-12 Education. Our most recent information shows 81% of all public schools in Arkansas have Internet access, and there are nearly 60,000 computers available in these schools which serve approximately 450,000 students. Several schools provide dial-up access to parents for providing information on school assignments and other items such as lunch menus. The state did not score as highly on our Higher Education measure, though the University of Arkansas does make available Federal Student Aid and undergraduate admissions application forms available for download.

Like many states in this study, Arkansas falls down in the areas of Business Regulation, Revenue and Social Services. In fact, Arkansas scored no points at all in the Business Regulation section. Where many states at least have job search databases on-line, we only found internal openings posted by the Arkansas Department of Computer Services. The state has, however, made some inroads in applying digital technologies to areas such as law enforcement, where they are building an Automatic Finger Printing Information System. Moreover, all drivers license photographs have been computerized in order to simplify the renewal process.

CALIFORNIA	Score (Scale = 100)	West Region Ranking	National Ranking
Digital Democracy	63	5	12
Higher Education	39	9	30
K-12 Education	67	3	8
Business Regulation	42	7	21
Revenue / Taxes	33	7	29
Health and Social Services	8	13	49
Law Enforcement / Courts	53	3	6
Other Initiatives	75	6	22
OVERALL	47	#6 Out of 13 States	#20 Out of 50 States

The state that has given us Silicon Valley ranks #20 in our survey, scoring above-average in numerous categories––most notably, Digital Democracy, Law/Courts, and K-12 Education––but lagging far behind in the application of digital technologies to the realm of Social Services. In this category, our research found no on-line access to regulations and forms, no on-line benefit application capability (except a touch system in Tulane County, allowing AFDC applicants to conduct their own interview), no digital "job search" function, no digital recordkeeping or Smart Card experiments.

On the other hand, we were impressed by California's thorough postings of current statutes, proposed legislation, and legislative deliberations. The governor's e-mail address is hot-linked to the state government's Web site, and several mayors are also accessible through the state's 470 cities' Web sites.

The state's K-12 schools' access to computers has been boosted by numerous projects: the Detwiler Foundation's Computers for Schools Program, Smart Schools Challenge 2000, and the governor's Digital High School Initiative. In the area of Business Regulation, California does have some forms on-line. In January 1997, California's Trade and Commerce Agency streamlined the licensing process for garment manufacturers in Los Angeles so the process can be done, all at once, through the Web; this is being used as a model for similar initiatives throughout the state.

COLORADO	Score (Scale = 100)	West Region Ranking	National Ranking
Digital Democracy	50	9	26
Higher Education	39	9	30
K-12 Education	67	3	8
Business Regulation	17	10	33
Revenue / Taxes	33	7	29
Health and Social Services	42	5	11
Law Enforcement / Courts	40	5	17
Other Initiatives	75	6	22
OVERALL	45	#9 Out of 13 States	#24 Out of 50 States

Colorado scores in the middle of the pack on Digital Democracy, with decent availability of statutes passed and proposed and limited e-mail access to state officials. However, the secretary of state does offer an Internet subscription service for accessing all registered corporations in the state, as well as UCC files for obtaining lien information and campaign contribution information.

The state scores better on K-12 Education than Higher Education. Between 76-100% of primary and secondary schools are reported to be on-line, due in part to a statewide initiative, the Technology Learning Committee. The state's student-to-multimedia-computer ratio is better than 1:16. However, the public universities do not provide on-line access to student loan information, and distance learning programs appear to be in the development stage.

Pilot programs have begun in Colorado regarding electronic benefit transfers and the use of "smart cards" to deliver social service benefits. Its law enforcement and courts systems also look to be ahead of the curve. Colorado House Bill 85-1101 mandated that public safety officials, the Department of Corrections and the State Court Administrator work together to develop a strategic plan to implement an integrated criminal justice information system by November 1997.

CONNECTICUT	Score (Scale = 100)	Northeast Region Ranking	National Ranking
Digital Democracy	13	8	48
Higher Education	28	7	41
K-12 Education	33	4	29
Business Regulation	42	5	21
Revenue / Taxes	20	8	38
Health and Social Services	25	6	29
Law Enforcement / Courts	20	6	43
Other Initiatives	58	6	41
OVERALL	30	#8 Out of 9 States	#47 Out of 50 States

Connecticut is looking to become the first state to outsource all of its computer services (a request-for-proposal is live on its Web site). While this may ultimately be a path to improved implementation of digital technologies, the state scores below average on many of the measures used in this report. In particular, Digital Democracy efforts are virtually non-existent. Revenue and Commerce Department on-line offerings are also minimal.

However, the state has set an ambitious goal of achieving computer/student ratios of 5:1 for its primary and secondary schools (though only 18% of schools are at this target at present). Also, the University of Connecticut provides an on-line virtual classroom that supports long-distance learning programs.

In the realm of Social Services, Connecticut was early in using electronic benefit transfers, having passed a law requiring that AFDC and General Assistance recipients be imaged for identification purposes. The state is also implementing an integrated criminal justice information management system, which will use biometrics from on-line booking stage to court, to probation, to corrections and to parole.

DELAWARE	Score (Scale = 100)	South Region Ranking	National Ranking
Digital Democracy	38	11	39
Higher Education	28	13	41
K-12 Education	33	11	29
Business Regulation	0	10	42
Revenue / Taxes	60	4	9
Health and Social Services	46	3	10
Law Enforcement / Courts	27	12	35
Other Initiatives	92	1	4
OVERALL	40	#5 Out of 16 States	#29 Out of 50 States

Delaware scores well on our Taxation and Social Services measures. The state's revenue department uses digital recordkeeping to minimize the use of paper, while providing many tax forms on-line, on-line filing capability (though only through a third-party provider) and a general help mailbox. In the realm of Social Services, digital job searches can be conducted on the Web and from kiosks, and the state is actively evaluating proposals on electronic benefit transfers and using "Smart cards" to include benefits in all areas.

Areas that Delaware can seek to improve include Business Regulation, where the state was one of nine in our survey that failed to earn any points in this category. Also, in Higher Education, we saw no evidence of college-programs being conducted on-line and no Web site access to student loan information.

There is an Office of Information Services ongoing in Delaware, headed by a Chief Information Officer. The group reports significant activity occurring in increasing bandwidth and the existence of a state government Intranet.

FLORIDA	Score (Scale = 100)	South Region Ranking	National Ranking
Digital Democracy	71	1	7
Higher Education	50	6	16
K-12 Education	56	5	14
Business Regulation	75	1	1
Revenue / Taxes	73	2	4
Health and Social Services	25	7	29
Law Enforcement / Courts	67	1	2
Other Initiatives	80	3	17
OVERALL	62	#1 Out of 16 States	#3 Out of 50 States

Florida tied with four other states for the top score in our Business Regulation category, where for the most part there has not been significant implementation of digital technologies. Florida's Department of Business and Professional Regulation provides Florida residents with access to licensing and other regulatory material, with at least a few forms available on-line with others promised to be on the way. The state also has strong on-line help facilities and a unique search engine available through its advanced Government Services Direct site, allowing users to browse recent articles and on-line material relevant to their areas of business interest.

Florida also achieved a #2 rank in Law Enforcement and the Courts. The state recognizes digital signatures for all official purposes, and is in the process of implementing digital communications capabilities for law enforcement and state emergency vehicles. Additionally, its Web site provides on-line access to public safety personnel and to case law decisions for both its Supreme and Appellate Courts.

Nevertheless, Florida fell in the bottom half of states on the measure of Social Services, for which it offers very little on-line help. While the state did earn some points for its Departments of Labor System's digital "job search" function and for having started to implement electronic benefit transfers, its lack of on-line forms and application ability keeps it from scoring above the category's median score.

GEORGIA	Score (Scale = 100)	South Region Ranking	National Ranking
Digital Democracy	29	12	43
Higher Education	33	10	34
K-12 Education	89	1	1
Business Regulation	0	10	42
Revenue / Taxes	53	6	15
Health and Social Services	17	14	45
Law Enforcement / Courts	27	12	35
Other Initiatives	83	2	9
OVERALL	41	#4 Out of 16 States	#28 Out of 50 States

Georgia has been very successful in implementing digital technologies in education at the primary and secondary school levels. The state released its "Statewide Education Technology Plan Blueprint" providing recommendations for using state-of-the-art technology in public education, and asserting this as a top priority for the state. Our research suggests that 98% of Georgia's public schools have Internet access, that multimedia computer to student ratios are approximately 15:1, and that there is on-line information about Georgia schools' performance available for parents to access.

Georgia's Health, Welfare and Social Services offerings include Web and kiosk digital job searches and participation in the Southern Alliance effort to use EBT for WIC. However, we see no "smart card" experiments and no resources to allow individuals to find information and forms on benefits through the Internet.

We also note that Georgia shares with eight other states the dubious distinction of earning no points on our Business Regulation measure.

HAWAII	Score (Scale = 100)	West Region Ranking	National Ranking
Digital Democracy	25	13	45
Higher Education	44	7	24
K-12 Education	44	7	19
Business Regulation	0	13	42
Revenue / Taxes	17	11	40
Health and Social Services	25	10	29
Law Enforcement / Courts	11	12	47
Other Initiatives	50	13	45
OVERALL	27	#13 Out of 13 States	#50 Out of 50 States

While ranking last in our overall study, Hawaii too has strengths in its implementation of digital technologies that can serve as a springboard to continued development. For example, our research indicates that classes being offered over the Web in public institutions of higher learning, and that an initiative is in place to make the attainment of an AE degree possible over the Web, by taking a mix of on-line courses across the University of Hawaii's ten campus system.

Additionally, within the last few weeks, Hawaii signed a contract for Citibank to provide electronic benefit transfer services for cash assistance and food stamps. The initial implementation will last until the initiation of a pilot program in February 1998. By July 1998, Hawaii expects all of its counties to be live on this system.

Nevertheless, we have not yet seen evidence that Hawaii is catching up in categories such as Law Enforcement and the Courts and Digital Democracy.

IDAHO	Score (Scale = 100)	West Region Ranking	National Ranking
Digital Democracy	63	5	12
Higher Education	28	12	41
K-12 Education	22	11	39
Business Regulation	33	9	26
Revenue / Taxes	13	12	42
Health and Social Services	25	10	29
Law Enforcement / Courts	33	8	25
Other Initiatives	67	10	33
OVERALL	36	#11 Out of 13 States	#36 Out of 50 States

Idaho scores well on our measure of Digital Democracy, thanks to its Web site's catalog of state statutes, proposed legislation, and commentary on ongoing legislative deliberation. It also performs close to the middle of the pack in several other categories that, by and large, few states excelled at. This suggests that Idaho's has an opportunity to take a leading role in pioneering the use of digital technologies in the areas of Health, Welfare, and Social Services, Business Regulation and Law Enforcement and the Courts. As more states recognize their own need to make investments in these areas, the alternative is being left behind.

One other area that Idaho appears to need to play catch up concerns Higher Education and Education at the K-12 level, as reflected by its sub-par scores along both measures in our study. We did not find any ability to find student loan information or on-line application capability at any Idaho public university, and its K-12 public schools trail national averages in terms of percentage of schools connected to the Internet and ratios of students to multimedia computers.

ILLINOIS	Score (Scale = 100)	Midwest Region Ranking	National Ranking
Digital Democracy	13	12	48
Higher Education	60	3	6
K-12 Education	11	10	46
Business Regulation	17	8	33
Revenue / Taxes	58	4	13
Health and Social Services	48	2	7
Law Enforcement / Courts	11	12	47
Other Initiatives	67	6	9
OVERALL	36	#9 Out of 12 States	#36 Out of 50 States

Illinois scores high marks on Higher Education and Health and Social Services, but has yet to implement some of the simple Web site features that would aid its score along the measures of Digital Democracy, where it ranked #48 nationally. For instance, there is no information regarding how to contact state legislators on via the Web, and there is no archive of existing statutes and proposed legislation that would facilitate citizens' interaction with state government.

In Social Services, Illinois appears to be using electronic benefit transfers for Food Stamps, and has some relevant forms (such as adoption) available on its Web site. While there is no on-line means to access department officials, the state does provide a Web-based "help" facility, for answering general questions. Using some of the same techniques – forms on-line, general help mailbox – Illinois also scores fairly well on our measure of Revenue / Taxes.

Clear areas that the state needs to target for better implementation of on-line technologies include Law Enforcement / Courts and K-12 Education, in addition to the previously-discussed Digital Democracy.

INDIANA	Score (Scale = 100)	Midwest Region Ranking	National Ranking
Digital Democracy	75	2	3
Higher Education	80	1	1
K-12 Education	78	1	3
Business Regulation	58	1	7
Revenue / Taxes	47	6	18
Health and Social Services	25	9	29
Law Enforcement / Courts	33	6	25
Other Initiatives	60	10	40
OVERALL	57	#2 Out of 12 States	#7 Out of 50 States

Indiana is one of the real leaders in using digital technologies to further the democratic process, making available on its Web site: complete statutes, proposed legislation, legislative deliberation (a fee is necessary for complete information here), and hot-linked e-mail addresses to the governor and most state legislators. Individuals can also comment on proposed legislation through the sponsor's e-mail address. Perhaps the fact that Indiana began its commitment to IT implementation early––the Intelenet Commission was established in 1986 to contract, manage and develop telecommunications and information technology services for all public entities––explains its strong performance and top ten ranking in our study.

The state also achieved very high rankings in K-12 Education (85% of schools have Internet access, 18 students per multimedia computer) and Higher Education (degrees available over the Web from public universities, forms available on-line for college admission and loans). Nevertheless, like all states in our study, Indiana the state could make improvements in certain areas as well. In particular, Social Services and Law Enforcement and the Courts are areas where the state falls short of our average score.

IOWA	Score (Scale = 100)	Midwest Region Ranking	National Ranking
Digital Democracy	67	5	11
Higher Education	33	9	34
K-12 Education	11	10	46
Business Regulation	33	6	26
Revenue / Taxes	13	9	42
Health and Social Services	29	8	24
Law Enforcement / Courts	26	11	35
Other Initiatives	67	6	33
OVERALL	35	#10 Out of 12 States	#39 Out of 50 States

Iowa has excelled in the area of Digital Democracy, almost breaking into our top ten in that category thanks to having statutes, proposed legislation and records of legislative deliberation on-line. In several other categories, however, Iowa has significant room for improvement. Most notably, in the area of K-12 Education, the state scores low. The most recent data we found available reported that less than 25% of its primary and secondary schools have Internet access.

Another area where Iowa needs to play catch up concerns its revenue department. We did not find tax forms available through the Iowa Web site, much less the ability to file one's taxes on-line. There was also no clear on-line help facility and no hot-linked e-mail access to individuals in the department. These should be areas that Iowa moves to address, as a central IT planning commission has been approved, to be headed by a cabinet level CIO, but is not yet underway. Our research in Iowa indicates that the building of a state government intranet has been launched, and that much activity is occurring to increase bandwidth.

KANSAS	Score (Scale = 100)	Midwest Region Ranking	National Ranking
Digital Democracy	75	2	3
Higher Education	39	8	30
K-12 Education	22	9	39
Business Regulation	75	1	1
Revenue / Taxes	80	1	2
Health and Social Services	25	9	29
Law Enforcement / Courts	40	5	17
Other Initiatives	67	6	33
OVERALL	53	#5 Out of 12 States	#11 Out of 50 States

Our study overall showed that the idea of using the Web to better to facilitate compliance by business with state regulation remains sadly unexplored; nevertheless, Kansas deserves a measure of applause for leading what effort there is. Kansas's Web site provides for at least the download of forms and some on-line regulatory filing capacity. Moreover, a general help mailbox is offered in some commerce-related departments for Web users with further questions on regulatory matters in Kansas.

Kansas also is noteworthy for achieving a #2 ranking in our Taxation category, and third place finish in Digital Democracy. Its efforts to put tax forms on-line, help services, and other revenue department data (sales tax collection data, etc.) must be viewed in the context of the state's larger Project 2000 effort – a multi-year project designed to fundamentally restructure the state's tax administration (over-the-phone tax filing and assistance were the first results of this undertaking.

Kansas, however, did not fair well in our K-12 category; access to multimedia computers is limited (less than one per fifty students) and fewer than 25% of primary and secondary schools have Internet access. Health, Welfare and Social Services are seeing new investment, as the state reports that it is starting to implement digital recordkeeping, on-line help facilities, and digital job-search capabilities. Additionally, at least one EBT program is currently in place. The state is also working to introduce an integrated criminal information management system, which would utilize digital signatures, currently being developed as well.

KENTUCKY	Score (Scale = 100)	South Region Ranking	National Ranking
Digital Democracy	50	5	26
Higher Education	39	9	30
K-12 Education	44	7	19
Business Regulation	0	10	42
Revenue / Taxes	33	11	29
Health and Social Services	17	14	45
Law Enforcement / Courts	13	16	45
Other Initiatives	67	10	33
OVERALL	33	#12 Out of 16 States	#43 Out of 50 States

While Kentucky did not achieve a high score in our overall study, the state does have some strong initiatives in place to utilize digital technologies in education. By June 1996, 100% of Kentucky's public school classrooms had capability to connect to the Kentucky Information Highway with access to the Internet. Roughly 45% of its elementary and secondary schools are building wide local area networks.

Business Regulation, Law/Courts, and Social Services –– these are the areas where Kentucky could really benefit from following the best practice of our report's identified leaders. We found no access to state business regulatory forms, or even to help facilities relevant to such concerns. Kentucky does not have Supreme or Appellate Court decisions posted on-line, and while some communities have digital communication capabilities for law enforcement personnel, there is no statewide integrated plan. In Social Services, Kentucky is acting in concert with the Southern Alliance to use electronic benefit transfers, but other social service offerings, by and large, are not presently benefiting from digital technologies.

The good news is that the Kentucky Information Resource Management Commission is pursuing its Empower Kentucky project, which presumably will help Kentucky to better meet benchmark criteria in the future.

LOUISIANA	Score (Scale = 100)	South Region Ranking	National Ranking
Digital Democracy	25	14	45
Higher Education	33	10	34
K-12 Education	22	14	39
Business Regulation	17	6	33
Revenue / Taxes	58	5	13
Health and Social Services	20	13	44
Law Enforcement / Courts	25	15	42
Other Initiatives	60	14	9
OVERALL	33	#12 Out of 16 States	#43 Out of 50 States

Louisiana has decent resources in place for providing tax assistance through the Internet. The state's Web site has several personal and business tax forms available for download, while income tax filing can be done through a third-party. On-line help facilities permit individuals to get answers to specific tax questions.

Unfortunately, in most other categories, Louisiana finishes in the back half of the states. However, we do see signs of improvement in some categories. Though not yet implemented, both Northwest Louisiana State and Louisiana State University have proposed on-line course offerings. Like many Southern states, Louisiana's distance learning efforts take their cue from the Southern Regional Educational Board.

In Digital Democracy, Louisiana could move out of the lower rankings by employing such simple measures as hot-linking legislators and governors' staff e-mail addresses to the Web site, in order to facilitate more communications between citizens and their elected officials.

MAINE	Score (Scale = 100)	Northeast Region Ranking	National Ranking
Digital Democracy	33	6	41
Higher Education	56	1	9
K-12 Education	33	4	29
Business Regulation	50	2	13
Revenue / Taxes	47	4	18
Health and Social Services	38	3	16
Law Enforcement / Courts	47	2	12
Other Initiatives	93	1	3
OVERALL	50	#3 Out of 9 States	#14 Out of 50 States

Maine is in the upper-half of our rankings in most categories, with a particularly strong showing in Law Enforcement and the Courts. In this area, we found that court opinions are available on-line (both from State Supreme and Appellate Courts), that the state recognizes digital signatures for limited purposes, and that the state is working through the implementation of an integrated criminal justice system. Additionally, the state this year upgraded to a digital network to all local law enforcement agencies, began creating an automated digital record storage system and began putting in the CODIS "Drug Fire" System that connects to the FBI.

The only area where Maine appears to be behind the curve is in Digital Democracy, where few legislators have hot-linked e-mail addresses and where there is no access to legislative deliberations and votes.

MARYLAND	Score (Scale = 100)	South Region Ranking	National Ranking
Digital Democracy	63	3	12
Higher Education	58	3	8
K-12 Education	44	7	19
Business Regulation	75	1	1
Revenue / Taxes	93	1	1
Health and Social Services	48	2	7
Law Enforcement / Courts	44	4	15
Other Initiatives	53	15	42
OVERALL	60	#2 Out of 16 States	#5 Out of 50 States

Maryland ranks highly in some of the areas where most states have made little progress: Business Regulation (tied for #1) and Taxation (#1). Virtually all forms – for personal and business tax filings, and for licenses/permits – can be downloaded from state government Web sites. Each department has general mailboxes to receive questions, as well as hot-linked e-mail addresses for individuals in the agency. By being receptive to questions and making department contacts available, Maryland's Social Services division also scores fairly well in our study, although there is room for improvement, since there are no social services forms available for download and no way to register for benefits on-line.

Again, in Digital Democracy, Maryland earns points for having the e-mail addresses of numerous individuals (most state legislators, executive branch officials, and the governor himself) hot-linked to the state government Web site. Maryland also has a limited selection of statutes available on-line, though a subscription service makes available the entire catalog of state statutes.

MASSACHUSETTS	Score (Scale = 100)	Northeast Region Ranking	National Ranking
Digital Democracy	42	4	35
Higher Education	56	1	9
K-12 Education	33	4	29
Business Regulation	75	1	1
Revenue / Taxes	73	1	4
Health and Social Services	21	8	38
Law Enforcement / Courts	27	5	35
Other Initiatives	92	2	4
OVERALL	52	#2 Out of 9 States	#13 Out of 50 States

Massachusetts ranks at the top of the New England states in our survey due to its implementation of digital technologies in the realms of commerce and taxation, areas where most states have yet to develop meaningful applications of new digital technologies. In Massachusetts, one may file income taxes on-line while paying owed amounts by credit card. There is an on-line help facility, and the revenue department itself uses digital recordkeeping to minimize the use of paper. Some regulatory forms are also available for download, while driver's registration renewal applications can be filed via the Web.

Massachusetts scores well in our Higher Education category, thanks in part to investments made in distance learning initiatives. There are several courses on-line at the University of Massachusetts, although one cannot attain a degree exclusively via distance learning classes. While K-12 schools rank somewhat in the middle of the pack in regard to computer/student ratios and percentage of schools connected to the Internet, the state does provide performance profiles on school districts through the Massachusetts Web site. The area where Massachusetts appears to be somewhat behind the curve is Digital Democracy; at present, there is no ability to see deliberations on and the status of pending legislation.

MICHIGAN	Score (Scale = 100)	Midwest Region Ranking	National Ranking
Digital Democracy	50	9	26
Higher Education	78	2	2
K-12 Education	78	1	3
Business Regulation	58	1	7
Revenue / Taxes	7	11	46
Health and Social Services	33	6	19
Law Enforcement / Courts	60	1	3
Other Initiatives	67	6	33
OVERALL	54	#4 Out of 12 States	#10 Out of 50 States

Michigan is a leader in applying digital technologies to law enforcement and the courts. Integrated criminal management systems exist throughout the state, many police cars are equipped with computers and the state is implementing digital signature technology. There is also a subscription service through which citizens can access state Supreme and Appellate Court decisions.

The state also ranks very highly in our education categories. Some public universities have on-line application capability, virtually all faculty and students can be accessed through the Web, and there are a few courses being taught at public universities through teleconferencing. Additionally, there are some graduate-level programs at public colleges that require students to obtain computers as part of admission. In regard to primary and secondary schools, 76%-100% are currently connected to the Internet; some public schools even allow parents to access information on their child's performance via the school Web site.

Michigan scores lower in the Digital Democracy category, as currently there is no access to proposed legislation, relevant deliberations and votes, nor the ability for citizens to comment through the Web on legislation being debated.

MINNESOTA	Score (Scale = 100)	Midwest Region Ranking	National Ranking
Digital Democracy	54	7	22
Higher Education	44	6	24
K-12 Education	33	7	29
Business Regulation	50	4	13
Revenue / Taxes	53	5	15
Health and Social Services	33	6	19
Law Enforcement / Courts	33	6	25
Other Initiatives	87	1	6
OVERALL	49	#6 Out of 12 States	#16 Out of 50 States

Minnesota, with an IT commission headed by a cabinet-level CIO, claims to be actively improving bandwidth and building its IT capabilities in numerous capacities. One can already observe a fair amount of activity in the state's higher education efforts, where some public universities have programs requiring students to have computers, and other programs offer courses through teleconference. The development of a cooperative project (between the University of Minnesota system, the Minnesota State Colleges and Universities system and the Office of Technology) called the Virtual University of Minnesota (www.umn.edu/tv/VirtualU/), has been approved and is partially funded.

By most parameters, Minnesota is in the middle of the pack, which means that it could look to make improvements in those same areas where the majority of states are weak. While the state has at least one electronic benefit transfer program in place, there are no forms on-line relevant to social services. Additionally, court opinions are not available on-line and K-12 Internet access lags behind national averages.

MISSISSIPPI	Score (Scale = 100)	South Region Ranking	National Ranking
Digital Democracy	8	15	50
Higher Education	60	2	6
K-12 Education	33	11	29
Business Regulation	17	6	33
Revenue / Taxes	0	16	48
Health and Social Services	28	6	28
Law Enforcement / Courts	44	4	15
Other Initiatives	67	10	9
OVERALL	32	#14 Out of 16 States	#46 Out of 50 States

Mississippi has strength in a few key areas—Law Enforcement and the Courts and Higher Education, for which it ranks #9 and #6, respectively––but also is notably weak in delivering Digital Democracy information and making forms (Taxes, Social Services, Business Regulation) available to the public.

Mississippi's state Web site has scant information on proposed legislation and then virtually nothing else that allows citizens to become more informed on public matters or to interact with their elected officials. Things are somewhat more encouraging regarding the posting of State Supreme Court opinions. Additionally, and at least some members of the Department of Public Safety and Supreme Court staff can be easily contacted through e-mail addresses posted on-line.

Mississippi's strong score in Other Initiatives indicates that the state may be poised to improve its score on several of these measures going forward.

MISSOURI	Score (Scale = 100)	Midwest Region Ranking	National Ranking
Digital Democracy	71	4	7
Higher Education	22	11	46
K-12 Education	44	5	19
Business Regulation	58	1	7
Revenue / Taxes	67	3	7
Health and Social Services	42	3	11
Law Enforcement / Courts	60	1	3
Other Initiatives	73	4	27
OVERALL	55	#3 Out of 12 States	#9 Out of 50 States

Missouri receives high marks in our Law Enforcement and the Courts category, as it provides on-line access to case law decisions (both Supreme and Appellate). An integrated criminal information management system exists throughout the state, and Missouri is seeking a vendor to increase its mobile computing and communications capabilities for law enforcement officials. The legislative and executive sections of the state government Web site are also well done, providing better-than-average access to proposed legislation and ways to contact public officials.

In higher education, there is only limited information available on how to apply to public universities and no apparent way to access student loan material. State contacts indicate that there are no current programs requiring students to purchase computers, although Northwest Missouri State has experimented with the idea in the past. However, we learned that there are some college-level courses being offered on-line at the University of Missouri in Columbia and at Southwest Missouri State.

MONTANA	Score (Scale = 100)	West Region Ranking	National Ranking
Digital Democracy	50	9	26
Higher Education	50	4	16
K-12 Education	22	11	39
Business Regulation	50	4	13
Revenue / Taxes	40	5	25
Health and Social Services	52	1	2
Law Enforcement / Courts	53	3	6
Other Initiatives	60	11	9
OVERALL	47	#6 Out of 13 States	#20 Out of 50 States

Montana does comparatively well in utilizing digital technologies to provide social services. The state has at least one program in place using electronic benefit transfers and "smart cards" for benefits. Additionally, Montana's Web site provides general help mailboxes in some human services departments and has job postings available (though not forms for applying for benefits).

The state also gets high marks in our Law Enforcement and the Courts category and Business Regulation. In the former category, the state does recognize digital signatures for limited legal purposes and is in the process of implementing a digital communications system to allow police, fire and other emergency vehicles to communicate with one another.

The only category where Montana scored sub-par was K-12 Education; less than 50% of public schools have Internet access and there are between 25 and 49 students for every multimedia computer.

NEBRASKA	Score (Scale = 100)	Midwest Region Ranking	National Ranking
Digital Democracy	63	6	12
Higher Education	33	9	34
K-12 Education	33	7	29
Business Regulation	42	5	21
Revenue / Taxes	33	7	29
Health and Social Services	25	9	29
Law Enforcement / Courts	33	6	25
Other Initiatives	87	1	6
OVERALL	44	#7 Out of 12 States	#27 Out of 50 States

Nebraska has better-than-average resources for Digital Democracy––individuals can browse proposed legislation and comment on it through the sponsoring legislator's e-mail. The state scores additional points due to the number of individuals that can be accessed directly through the state Web site. By virtue of having at least a few business regulatory forms available on-line, the state also receives a better-than-average grade in the commerce category. However, Nebraska excels in few other areas, and for the most part follows the patterns of our larger findings.

Digital technologies are beginning to be implemented in the realm of Social Services, but very little substantive is live and ongoing at present. State officials also indicate that they are in the process of realizing their plans to provide digital communication capabilities to law enforcement officers' and integrated criminal information management systems throughout the state.

NEVADA	Score (Scale = 100)	West Region Ranking	National Ranking
Digital Democracy	54	8	22
Higher Education	42	8	28
K-12 Education	56	5	14
Business Regulation	17	10	33
Revenue / Taxes	0	13	48
Health and Social Services	14	12	47
Law Enforcement / Courts	0	13	50
Other Initiatives	78	5	9
OVERALL	33	#12 Out of 13 States	#43 Out of 50 States

Nevada achieves middle-of-the-pack numbers in our Digital Democracy and Higher Education categories, but its overall score is negatively impacted by its failure to effectively utilize digital technologies in the areas of Law Enforcement and the Courts, Health and Social Services, Revenue and Business Regulation.

K-12 Education is the only category in which Nevada distinguishes itself in the positive sense besides Other Initiatives, which at a minimum, provides evidence that Nevada may be looking to address some of the areas now lacking an IT presence. While there are no on-line school report cards available to the parents of Nevada, they can take comfort in the fact that approximately 98% of public schools have Internet access, and that there is one multimedia computer for every 23 students –– slightly better than the national average.

NEW HAMPSHIRE	Score (Scale = 100)	Northeast Region Ranking	National Ranking
Digital Democracy	58	2	20
Higher Education	44	4	24
K-12 Education	33	4	29
Business Regulation	33	7	26
Revenue / Taxes	33	7	29
Health and Social Services	42	2	11
Law Enforcement / Courts	47	2	12
Other Initiatives	73	4	27
OVERALL	46	#4 Out of 9 States	#22 Out of 50 States

In New Hampshire, the Department of Health and Human Services has budgeted for the imaging of client records to enhance operations and provide remote access to information. This follows the efforts of the Bureau of Vital Records and Health Statistics to use an on-line database to store birth and death information. The state is working to implement an electronic benefit transfers program and to put social service benefit forms on-line. New Hampshire also scores strongly in our Law/Courts measure, as the state posts its Supreme Court decisions within thirty minutes of their announcement.

Areas where New Hampshire could focus more attention include Taxation and Business Regulation. In both situations, the state has some forms available (or in the process of being made available) on-line, but its Web site has no general help facilities and there are very few programs with professional staff accessible on-line. In the area of K-12 Education, 51-75% of schools are connected to the Internet, but computer/student ratios remain high and there is no on-line information quantifying different schools' performance.

NEW JERSEY	Score (Scale = 100)	Northeast Region Ranking	National Ranking
Digital Democracy	63	1	12
Higher Education	53	2	14
K-12 Education	78	1	3
Business Regulation	50	2	13
Revenue / Taxes	60	2	9
Health and Social Services	50	1	3
Law Enforcement / Courts	53	1	6
Other Initiatives	47	7	46
OVERALL	57	#1 Out of 9 States	#7 Out of 50 States

Finishing among the top ten states in our overall study, New Jersey fares well in most of our categories; in particular, the state should be viewed as a leader in Social Services and K-12 Education. Despite the fact that the state is not currently involved in delivering benefits through smart cards or electronic benefit transfer, it is one of the few states that can claim all of the following: forms available on the Web, on-line help facilities, digital recordkeeping within state programs, and a digital "job search" available on-line and through kiosks.

Things that New Jersey could do to move its score even higher in our study would be: making State Supreme Court opinions available over the Web, improving access to business regulatory forms, and improving on-line access to individuals in various departments (law enforcement, revenue department, etc.).

NEW MEXICO	Score (Scale = 100)	West Region Ranking	National Ranking
Digital Democracy	46	11	30
Higher Education	28	12	41
K-12 Education	0	13	50
Business Regulation	42	7	21
Revenue / Taxes	73	1	4
Health and Social Services	50	2	3
Law Enforcement / Courts	60	2	3
Other Initiatives	73	8	27
OVERALL	46	#8 Out of 13 States	#22 Out of 50 States

New Mexico has excelled in implementing digital technologies in the areas of Taxation, Social Services, law and the courts as some form of digital recordkeeping is being employed in all three areas. The state provides tax forms on-line along with a help facility to answer tax questions. Digital job searches can be performed at kiosks in several locations. New Mexico uses electronic benefit transfers for food stamps and welfare, and is experimenting with a "smart card" program in the WIC area. Additionally, digital signatures are recognized for all official state purposes.

Unfortunately, New Mexico has not been as proactive in advancing the development of such technologies among its citizenry, particularly its youngest members. Less than 25% of public primary and secondary schools have Internet access and there are more than 50 students for every multimedia computer in the school system. The IT planning commissioning reports working with private industry to improve bandwidth and get broader distribution, especially into New Mexico's rural areas.

NEW YORK	Score (Scale = 100)	Northeast Region Ranking	National Ranking
Digital Democracy	54	3	22
Higher Education	42	5	28
K-12 Education	44	3	19
Business Regulation	50	2	13
Revenue / Taxes	42	6	24
Health and Social Services	33	5	19
Law Enforcement / Courts	11	9	47
Other Initiatives	83	3	9
OVERALL	45	#5 Out of 9 States	#24 Out of 50 States

Although New York's score on K-12 Education was not especially noteworthy (due to having higher than average student to computer ratios and less than 50% of schools connected to the Internet), it does have a very strong school report card system. New York shows sample questions tests at given grade levels, and provides information about the percentage of students in schools and districts that met minimum requirements.

New York state, however, proved to be behind the curve in bringing digital technologies behind resources in Law Enforcement and the Courts. Judicial opinions are not available on-line, and while the state is in the process of implementing digital signature technology, we saw little other evidence of using integrated information technology systems to assist public safety efforts.

NORTH CAROLINA	Score (Scale = 100)	South Region Ranking	National Ranking
Digital Democracy	46	6	30
Higher Education	50	6	16
K-12 Education	78	2	3
Business Regulation	58	3	7
Revenue / Taxes	27	13	37
Health and Social Services	33	4	19
Law Enforcement / Courts	53	2	6
Other Initiatives	80	3	17
OVERALL	53	#1 Out of 16 States	#11 Out of 50 States

North Carolina is one of the better examples of a state that is making it easier for businesses to conform to regulatory standards, and that is also excelling at bringing technologies into its school systems. We note that there is good on-line access to individuals in the state commerce department and to relevant help resources; only some business forms can currently be downloaded, but the state is working to develop on-line filing capacity.

The K-12 school system has 63% of its schools on-line with one computer for every six students. Every school system has developed a five-year long range plan on what they want to accomplish with information technologies. Similarly, all North Carolina's public universities are on the NC Information Highway, with several distance learning courses on-line. UNC-Chapel Hill provides prospective students with the ability to file applications for admission through its Web site.

One category for which North Carolina has much room to improve relates to Taxation, as there are currently on forms available on-line and virtually no available contacts for help through the Internet.

NORTH DAKOTA	Score (Scale = 100)	Midwest Region Ranking	National Ranking
Digital Democracy	54	7	22
Higher Education	44	6	24
K-12 Education	67	3	8
Business Regulation	17	8	33
Revenue / Taxes	13	9	42
Health and Social Services	42	3	11
Law Enforcement / Courts	33	6	25
Other Initiatives	53	11	42
OVERALL	40	#8 Out of 12 States	#29 Out of 50 States

North Dakota achieves strong marks on K-12 Education, due to a student-to-multimedia-computer ratio of approximately 12 to one. Moreover, QED data indicates that 78% of the state's public schools have access to the Internet; our contact at the state believes that the percentage is now significantly higher. The state also ranks relatively high in the Health and Social Services area, where it is currently using electronic benefit transfers for food stamps and it is in the midst of a pilot program to deliver WIC benefits via "smart cards."

North Dakota lags behind most significantly in the Business Regulation and Revenue categories. Tax forms are mostly on-line, but there are no forms for applying for permits or licenses. Help facilities at these Web sites are also limited or non-existent.

OHIO	Score (Scale = 100)	Midwest Region Ranking	National Ranking
Digital Democracy	21	11	47
Higher Education	50	5	16
K-12 Education	11	10	46
Business Regulation	33	6	26
Revenue / Taxes	17	8	40
Health and Social Services	13	12	48
Law Enforcement / Courts	50	4	11
Other Initiatives	80	3	17
OVERALL	34	#11 Out of 12 States	#41 Out of 50 States

With relatively high scores in our Law/Courts and Higher Education sections, Ohio compensates for an underdeveloped IT effort in the fields of Digital Democracy, Social Services and K-12 Education. Although there the complete state statutes are on-line (and proposed legislation available through the proprietary site, HANNAH), Ohio does not facilitate interaction between citizens and officials through the Web. Hot-linked e-mail addresses are absent for the governor, his staff and most state legislators.

As Ohio's Chief Information Officer begins to target areas for development via his information technology commission, we believe our report can help identify states to emulate within those categories where Ohio is currently behind the curve. There is little going on in the realm of Health, Welfare and Social Services, besides digital job search functions available on the Web and at kiosks. Finally, less than 25% of K-12 schools are currently hooked up to the Internet.

OKLAHOMA	Score (Scale = 100)	South Region Ranking	National Ranking
Digital Democracy	42	10	35
Higher Education	53	5	14
K-12 Education	11	16	46
Business Regulation	50	4	13
Revenue / Taxes	67	3	7
Health and Social Services	52	1	1
Law Enforcement / Courts	33	9	25
Other Initiatives	80	3	17
OVERALL	49	#3 Out of 16 States	#16 Out of 50 States

Though there is little interactive capability on Oklahoma's Web site for Department of Human Services, the state manages to take the #1 ranking in that category of our study. Oklahoma is utilizing EBT for food stamps and cash disbursements under its Temporary Assistance for Needy Families program; as of August 1, 1997, 40% of Oklahoma's caseload was implemented. Oklahoma stores records digitally throughout its Department of Human Services, thereby eliminating much of the paperwork associated with handling benefit programs.

On the opposite end of the spectrum, Oklahoma has not caught up to other states in extending Internet access to its elementary and secondary schools. Less than 25% of public schools are on-line and there are 27 students for every multimedia computer. In Digital Democracy measures, Oklahoma could also follow the lead of other states, as it currently does not have access to statutes on-line and there is no means for citizens to comment upon proposed legislation.

OREGON	Score (Scale = 100)	West Region Ranking	National Ranking
Digital Democracy	63	5	12
Higher Education	72	1	3
K-12 Education	78	2	3
Business Regulation	67	2	6
Revenue / Taxes	47	3	18
Health and Social Services	48	4	7
Law Enforcement / Courts	40	5	17
Other Initiatives	80	4	17
OVERALL	62	#2 Out of 13 States	#3 Out of 50 States

Oregon tied for third place in our overall study. The state achieves strong marks on both education measures. In Higher Education, we note that information on student loans is available off public universities Web sites, that some programs require the purchase of computers, that most faculty/students can be accessed off Web sites, and that some universities have begun offering courses through teleconferencing and the Web. The state also has report cards on individual primary and secondary schools, so parents can actively monitor performance of public schools.

Oregon reports that it is starting to implement digital recordkeeping, EBT and smart card experiments to better automate the delivery of social services, although the state has not yet made forms for such benefits available over the Web. Oregon could improve its position further in our report by allowing individuals to submit regulatory, tax, and benefit forms on-line, and by offering help mailboxes in more locations. For the most part, the state is one of the real role models when it comes to effectively implementing digital technologies.

PENNSYLVANIA	Score (Scale = 100)	South Region Ranking	National Ranking
Digital Democracy	33	6	41
Higher Education	33	6	34
K-12 Education	22	8	39
Business Regulation	25	8	31
Revenue / Taxes	60	2	9
Health and Social Services	25	6	29
Law Enforcement / Courts	40	4	17
Other Initiatives	73	4	27
OVERALL	39	#6 Out of 16 States	#31 Out of 50 States

We see signs that Pennsylvania is moving to become a more digital state, given reports that it is now implementing digital communications capabilities for its law enforcement, digital signatures for court documents and an integrated criminal management system. The state also has gained some headway in making the taxation process friendly to the technologically savvy, as all tax forms are on-line and help is available through Web site mailboxes.

On most other measures, however, Pennsylvania has plenty of room for improvement. There no defined way for citizens to track deliberation on proposed legislation and to make their voice heard on such matters, other than e-mailing the governor or the less than 25% of legislators that have hot-linked e-mail addresses. With only 26%-50% of public schools on-line, Pennsylvania also scores near the bottom of our K-12 Education category. The good news is that the state is actively building an intranet, and is seeing lots of activity in hooking every state agency up to a fiber-based metropolitan area network.

RHODE ISLAND	Score (Scale = 100)	South Region Ranking	National Ranking
Digital Democracy	38	5	39
Higher Education	22	8	46
K-12 Education	22	8	39
Business Regulation	25	8	31
Revenue / Taxes	47	4	18
Health and Social Services	21	8	38
Law Enforcement / Courts	20	6	43
Other Initiatives	47	7	46
OVERALL	30	#8 Out of 16 States	#47 Out of 50 States

Rhode Island reports that it has approved an IT Commission with a below-cabinet level CIO, but that its work is not yet underway. Given the fact that Rhode Island ranks below the average score on most of our measures, we expect the commission would be well advised to analyze the accomplishments of other states that top our lists on individual categories––Education, Social Services, and Law/Courts in particular.

The only category where Rhode Island breaks into the top half is revenue, where the state permits on-line filing of tax forms and is starting to implement digital recordkeeping.

SOUTH CAROLINA	Score (Scale = 100)	South Region Ranking	National Ranking
Digital Democracy	63	3	12
Higher Education	22	15	46
K-12 Education	44	7	19
Business Regulation	0	10	42
Revenue / Taxes	40	9	25
Health and Social Services	21	9	38
Law Enforcement / Courts	47	3	12
Other Initiatives	75	6	22
OVERALL	39	#6 Out of 16 States	#31 Out of 50 States

As South Carolina's Budget and Control board have actively been hooking up primary and secondary schools for Internet access, the state fairs well on our K-12 Education scorecard. If only the same effort were being rolled out for state's institutions of higher learning. We were able to find no on-line access to student loan information, no on-line application capabilities and only limited availability of on-line courses and access to students/faculty through public university Web sites. South Carolina also has much room for improvement in the fields of Social Services and Business Regulation––in the latter category, South Carolina failed to earn any points on our questionnaire.

Though there are holes in South Carolina's Digital Democracy offerings, the state is noteworthy for its pilot program into digital voting kiosks for local initiatives and referendums.

SOUTH DAKOTA	Score (Scale = 100)	Midwest Region Ranking	National Ranking
Digital Democracy	42	10	35
Higher Education	22	11	46
K-12 Education	44	5	19
Business Regulation	0	12	12
Revenue / Taxes	7	11	46
Health and Social Services	38	5	16
Law Enforcement / Courts	33	6	25
Other Initiatives	47	12	46
OVERALL	29	#12 Out of 12 States	#49 Out of 50 States

The state of South Dakota has proven adept at utilizing digital technologies for the delivery of social services with experiments in using "smart cards" and electronic benefit transfers in place, and digital recordkeeping in place to better automate the delivery of benefits. Additionally, South Dakota has an impressive ratio of better than one multimedia computer for every sixteen K-12 public school students.

However, by most other measures, South Dakota could benefit by taking strides to more effectively use digital technologies in state government. For instance, South Dakota scored zero points in our Business Regulation category, and only one point (for beginning to implement digital recordkeeping) for its revenue department. Digital Democracy efforts also are not up to par, as only the governor has a hot-linked e-mail address and there is no means to comment on proposed legislation.

TENNESSEE	Score (Scale = 100)	South Region Ranking	National Ranking
Digital Democracy	58	4	20
Higher Education	50	6	16
K-12 Education	67	3	8
Business Regulation	0	10	42
Revenue / Taxes	47	8	18
Health and Social Services	25	7	29
Law Enforcement / Courts	27	12	35
Other Initiatives	33	16	49
OVERALL	38	#7 Out of 16 States	#33 Out of 50 States

Tennessee has made strong strides in using digital technologies in education, both at the K-12 level and at higher educational institutions. Since April of this year, 100% of primary and secondary schools have had Internet access via ISDM routers, and the state posts on its Web page a report card on its schools. While only two Tennessee state schools currently provide for on-line applications, authorities in the state indicate that all should have that capability within a year. Six of Tennessee's twenty state universities and college currently have certain courses offered on-line.

Tennessee has work to do, however, in categories such as commerce (no forms, no help mailboxes currently exist to help businesses conform to state regulations) and Law/Courts. There is no central state organization charged with developing an integrated approach to implementing digital technologies in state government, but our research does note much activity being devoted to upgrading bandwidth in the state.

TEXAS	Score (Scale = 100)	South Region Ranking	National Ranking
Digital Democracy	46	6	30
Higher Education	28	13	41
K-12 Education	22	14	39
Business Regulation	33	5	26
Revenue / Taxes	33	11	29
Health and Social Services	29	5	24
Law Enforcement / Courts	40	6	17
Other Initiatives	67	10	33
OVERALL	37	#8 Out of 16 States	#35 Out of 50 States

Given its reputation for tough law enforcement, it is not surprising that Texas earns its highest ranking relative to other states along the measure of law and courts. Our research turned up at least some forms of integrated criminal information management systems, the ongoing implementation of digital signature technology and the use of digital communications by police in some counties. Texas's Supreme and Appellate court decisions are also available on-line, albeit through a paid subscription service.

On other measures –– such as education and Digital Democracy –– Texas appears to be something of a laggard. Less than 25% of Texas's public elementary and secondary schools are connected to the Internet, and the state universities are only starting to implement on-line courses. Citizens are unable to comment on proposed legislation, although at least this material is made available on the state government's Web site. Nevertheless, the lack of an e-mail address for the governor and for the large majority of state legislators point to the opportunity Texas has to make its government more responsive by employing digital technologies.

UTAH	Score (Scale = 100)	West Region Ranking	National Ranking
Digital Democracy	42	12	35
Higher Education	50	4	16
K-12 Education	56	5	14
Business Regulation	17	10	33
Revenue / Taxes	33	7	29
Health and Social Services	29	8	24
Law Enforcement / Courts	33	8	25
Other Initiatives	100	1	1
OVERALL	45	#9 Out of 16 States	#24 Out of 50 States

Utah ranks around the middle of the pack on most levels in our study. The state achieves a relatively high score in education due to the fact that several state universities offer courses over the Web and allow prospective students to submit admissions applications on-line. Additionally, all elementary and secondary schools are connected to the Internet (excluding 14 schools that choose not participate). Parents in the Davis School District can even access detailed information on the school performance of their children (homework, grades, etc.).

Business Regulation and Digital Democracy are areas where Utah would benefit from further developing on-line capabilities. The state indicates that each state agency decides which regulations will appear on-line, but to date, this has meant no on-line filing capacity and few forms overall that have to do with business regulation.

VERMONT	Score (Scale = 100)	South Region Ranking	National Ranking
Digital Democracy	63	1	12
Higher Education	47	3	23
K-12 Education	67	2	8
Business Regulation	42	5	21
Revenue / Taxes	0	9	48
Health and Social Services	38	3	16
Law Enforcement / Courts	13	8	45
Other Initiatives	33	9	49
OVERALL	38	#7 Out of 16 States	#33 Out of 50 States

Vermont ranks high on measures of Digital Democracy and K-12 Education, among other reasonably solid performances in most other categories. Although the governor does not appear to have an e-mail address, a number of legislators' e-mail addresses are hot-linked and the state Web site displays proposed legislation and relevant deliberation.

The major pitfalls in Vermont's quest to become a digital state are its lack of developed resources for its revenue department and its law enforcement and judiciary. Vermont fails to win any points in the former category, as it does not have tax forms available and there is no clear source of information pertinent to such concerns (such as a general help mailbox or the e-mail address of someone in the department). Additionally, while Supreme Court decisions are available on-line, our research showed no digital communications being implemented in concert with law enforcement and criminal information management.

VIRGINIA	Score (Scale = 100)	South Region Ranking	National Ranking
Digital Democracy	71	1	7
Higher Education	67	1	4
K-12 Education	56	5	14
Business Regulation	17	6	33
Revenue / Taxes	53	6	15
Health and Social Services	21	9	38
Law Enforcement / Courts	40	6	17
Other Initiatives	75	6	22
OVERALL	50	#2 Out of 16 States	#14 Out of 50 States

Virginia leads the South Region and came in fourth place overall in Higher Education, due to offering some courses on-line, and providing forms necessary for applying for admissions to various programs. Nevertheless, the state loses points in this category for not providing on-line access to student loan information. In terms of elementary and secondary education, near all of Virginia's public schools are connected to the Internet and the state is presently working to implement a report card system to give parents feedback on overall school performance.

Business Regulation and Social Services are the two areas relevant to state government that have been least developed by digital technologies in Virginia. A state board is working to implement access to business regulations and forms, and to facilitate the filing of such forms over the Web. However, at present, these service offerings are not available and there is no help mailbox to provide other assistance. Similarly, while digital recordkeeping for social services is being developed and an RFP is out for transitioning to electronic benefit transfers, Virginia offers little at present in the way of automated or on-line service under the topic of Health, Welfare and Social Services.

WASHINGTON	Score (Scale = 100)	West Region Ranking	National Ranking
Digital Democracy	75	2	3
Higher Education	67	2	4
K-12 Education	44	7	19
Business Regulation	58	3	7
Revenue / Taxes	60	2	9
Health and Social Services	50	2	3
Law Enforcement / Courts	73	1	1
Other Initiatives	100	1	1
OVERALL	66	#1 Out of 13 States	#1 Out of 50 States

Winning our Digital State Award for 1997 is the state of Washington, which excels in several categories and shows weakness in few. A visit to the Washington state Web site provides a good primer in what the effective implementation of digital technologies can provide. In terms of Digital Democracy, Washington provides complete state statutes and proposed legislation along with amendments, tracking and voting. Citizens can send e-mail to most legislators and to the governor via hot-linked e-mail addresses, and comments on proposed legislation can be sent to the sponsoring representative. Washington ranks #1 in Law Enforcement and the Courts as well, benefiting from an integrated criminal information management system and a number of counties that have law enforcement officers actively using computers for digital communications. The state puts court opinions on its Web site, and has many police officers' e-mail addresses live on the Web.

Where does Washington have room for improvement? Most noticeably, the states is only fair on K-12 Education, and could benefit from trying to supply parents' with more information on individual schools and districts. Between 51%-75% of Washington's public schools have Internet access, according to the most recent available information. And there are between 17 and 24 students for each multimedia computer. While Washington scores in the top 20% for both our Revenue and Social Services categories, the state does not permit on-line filing capacity for either and does not have forms available for download regarding eligibility for social benefits.

Of course, in the world of digital technologies, resting on laurels is a fast road to obsolescence. The question is whether Washington can maintain its lead in the race to become a true digital state, at the same time that the definition of that term evolves with the introduction of new technology. Given that our research shows that a state commission oversees information technology policy and that it is busy with efforts to upgrade bandwidth by laying fiber OC1 lines (check that this makes sense), we are optimistic that Washington state can continue to be a leader in the digital technology implementation.

WEST VIRGINIA	Score (Scale = 100)	South Region Ranking	National Ranking
Digital Democracy	46	6	30
Higher Education	56	4	9
K-12 Education	33	11	29
Business Regulation	17	6	33
Revenue / Taxes	20	14	38
Health and Social Services	8	16	49
Law Enforcement / Courts	33	9	25
Other Initiatives	73	9	27
OVERALL	36	#9 Out of 16 States	#36 Out of 50 States

West Virginia earns a respectable ranking in the category of Higher Education, thanks to the ongoing implementation of on-line courses and the availability of on-line college applications at public universities. The majority of faculty and students can be accessed on e-mail through college Web sites, and some programs are experimenting with the idea of mandating that students obtain computers for enrollment.

In several areas, however, West Virginia shows it has a long way to go. In particular, the state scores poorly on Health, Welfare, and Social Services; the only place West Virginia earned points on these measures in our survey was for having put out an RFP for a consultant to analyze the costs and benefits of proposed electronic benefit transfer and “smart card” programs. Business Regulation and revenue department offerings are also remedial, and West Virginia would certainly benefit by following the examples of some of the pioneers in these areas, as identified in this report.

WISCONSIN	Score (Scale = 100)	Midwest Region Ranking	National Ranking
Digital Democracy	79	1	2
Higher Education	56	4	9
K-12 Education	56	4	14
Business Regulation	58	1	7
Revenue / Taxes	80	1	2
Health and Social Services	50	1	3
Law Enforcement / Courts	53	3	6
Other Initiatives	73	4	9
OVERALL	63	#1 Out of 12 States	#2 Out of 50 States

Taking the #2 spot in our Digital State study is Wisconsin, which placed in the top ten nationally in seven of eight categories. Wisconsin's Web site models the potential for Digital Democracy applications of the Internet. There are hot-links to the e-mail addresses of virtually all legislators, as well as the governor and several members of his staff. State statutes, proposed legislation and records of legislative deliberation are also available on-line.

Wisconsin also does well in the Business Regulation and Revenue categories, as it provides forms for each along with general help resources. The state is currently working to set up on-line filing capabilities for business regulations forms. Similarly, in the Higher Education category, Wisconsin has set the fall of 1997 as a target date for the implementation of on-line submission capabilities for admissions applications.

The only category for which Wisconsin falls out of the top ten is K-12 Education. Here, Wisconsin has more than fifty students per multimedia computer, though state officials point out that the number of computers overall (independent of whether or not having CD-ROM, sound, etc.) is in the neighborhood of 17-24 per student.

WYOMING	Score (Scale = 100)	West Region Ranking	National Ranking
Digital Democracy	75	2	3
Higher Education	33	11	34
K-12 Education	44	7	19
Business Regulation	50	4	13
Revenue / Taxes	47	3	18
Health and Social Services	29	8	24
Law Enforcement / Courts	27	10	35
Other Initiatives	87	3	6
OVERALL	49	#4 Out of 13 States	#16 Out of 50 States

Wyoming's state government Web site has well developed Digital Democracy offerings, with hot-linked e-mail to the governor and most members of Wyoming's citizen legislature. Complete statutes exist on-line, alongside proposed legislation and information tracking deliberations and votes on such proposals. Additionally, the state Web site allows citizens to listen live on-line to the governor's speeches and press conferences (www.state.wy.us/state/welcome/html). The state also provides good access to help facilities in relation to business regulation.

At present, Wyoming is looking to improve in some categories for which it scored marginally in this study. This includes the area of law enforcement; at present, the state is studying options to outsource the construction of a common spectrum system to integrate all police communications.

Appendix Two: Ranking Criteria

As discussed in the text of the report, the methodology used in this study involved identifying key applications of digital technology to state government functions and operations and devising specific criteria by which individual state efforts in each area could be ranked on a quantitative scale. Accordingly, an initial set of criteria and rankings were developed, and preliminary research was undertaken to apply these criteria to a limited but representative sample of states. Based on this preliminary research, the criteria and ranking system were modified to better reflect the activities underway in each area. The resulting ranking criteria are presented below for each of the ten eight categories of activities analyzed.

Ranking Criteria for Digital Democracy

1. Do state statutes exist on the state's Web site?

0 - Statutes not available
1 - Limited selection of statutes available
2 - Revised statutes exist for several years
3 - Complete state statutes exist

2. Can citizens find proposed legislation on-line?

0 - Proposed legislation not available
1 - Some availability through individual sites or otherwise
2 - Some availability through the State Legislative site
3 - Proposed legislation is on Web site

3. Can citizens find legislative deliberation/votes on the Web?

0 - Votes/deliberation not available
1 - Limited or selective availability of amendments or votes
2 - Amendments and tracking available but no votes
3 - Amendments, tracking and votes available

4. Do state legislators have e-mail?

0 - No e-mail addresses are hot-linked
1 - It appears less than 25% legislators have hot-links to e-mail
2 - It appears up to 50% of legislators have hot-links to e-mail
3 - It appears most or all legislators have hot-links to e-mail

5. Can citizens comment on a specific piece of legislation on the Web?

0 - Cannot comment on legislation
1 - Can comment through Web master on legislative home page
2 - Can only comment through sponsor's e-mail address
3 - Can comment through a specific envelope related to proposed legislation

6. Does the governor have an e-mail address?

0 - Governor does not have an e-mail address
1 - Governor has address, but is not hot-linked to Web site
2 - NA
3 - Governor has hot-link to e-mail address

7. Do the governor's/legislative staff have e-mail/hot-links to e-mail?

0 - Little/no e-mail access
1 - Staff have e-mail, but no hot-links to Web page
2 - Some hot-links to e-mail (less than 10)
3 - More than 10 staff have hot-links to e-mail

8. Does the state allow voting for referendums, local initiative, etc. on the Web?

0 - No
1 - Pilot programs in place
2 - Permissive legislation/technical capabilities in place
3 - Voting for referendums, petitions, local initiatives are occurring

Ranking Criteria for Higher Education

1. Can students apply for or get information about how to apply for a college loan off a state Web site?

0 - No
1 - Information available on most public university/college Web sites.
2 - Information and forms (can download) available on-line at several public university/college Web sites.
3 - Can apply for college loan on-line from several public university/college Web sites.

2. Can students submit an application for or get information about how to submit an application for attending college through a public university/college Web site?

0 - No
1 - Limited information available
2 - Information and forms (can download) available on-line
3 - Some public universities/colleges have on-line application capability

3. Are public colleges/universities requiring students to obtain computers as part of admission?

0 - No
1 - Experimenting/starting to implement in some public universities/colleges
2 - Are required in some of the public universities/colleges or programs
3 - All public universities/colleges require

4. Are the public universities/colleges offering courses and/or degrees either through teleconference and the Web?

0 - No
1 - Starting to implement
2 - Some public universities/colleges offer courses through teleconferencing and the Web; at least one complete course being offered on the Web
3 - A degree can be obtained off the Web at a public university/college Web site

5. Are the public universities/colleges transferring programs or credits between universities from on-line programs?

0 - Not occurring
1 - Working to implement
2 - Occurring between universities/colleges that are using teleconferencing
3 - Occurring between universities/colleges that offer courses on the Web

6. Can faculty/students be reached via the public universities'/colleges' Web sites?

0 - Not occurring
1 - Very few, less than 25%
2 - Up to 50% of faculty/students can be accessed through public universities'/colleges' Web sites
3 - All faculty/students can be accessed through public universities'/colleges' Web sites

Elementary through Secondary Education (K-12)

1. Do the schools have access to the Internet?

0 - Poor, less than 25% on-line
1 - Fair, 26% to 50% on-line
2 - Good, 51-75% are on-line
3 - Excellent, 76-100% on-line

2. What is the percentage of students to multimedia computers?

0 - Poor, 50 or more students per multimedia computer
1 - Fair, 25 - 49 students per multimedia computer
2 - Good, 17 - 24 students per multimedia computer
3 - Excellent, 16 or less students per multimedia computer

3. Do the public schools offer a school performance or "report card" on the Web and/or can parents access their child's performance (grades, homework) through the school Web site?

0 - No report card
1 - Working to put a report care in place
2 - State report card only
3 - State report card and some schools allowing parents to access child's performance via the school's Web site

Ranking Criteria: Business Regulation

1. Can businesses/citizens access and download a form (for a license, permit etc.) on-line?

0 - No forms could be found
1 - Working to get forms on Web site
2 - Some forms can be downloaded from the Web
3 - All forms for licenses/permits etc. can be downloaded from Web

2. Can businesses/citizens actually file/apply for a license/permit etc. on-line?

0 - No
1 - Working to put on-line
2 - Can be done at a kiosk only
3 - Can be done from the Web

3. Can businesses/citizens get help or advice on complying with regulations through a general mailbox on-line?

0 - No
1 - Working to implement
2 - Can e-mail a general mailbox in some departments for help from the state's Web site
3 - Can e-mail a general mailbox in all departments for help on the state's Web site

4. Can businesses/citizens e-mail to a professional staff person on-line?

0 - No
1 - Very few departments have professional staff that are accessible from e-mail addresses on state's Web site
2 - Several departments have professional staff that are accessible from state's Web site
3 - All departments provide access to professional staff from state's Web site

Ranking Criteria: Taxation

1. Can taxpayers download tax forms?

0 - Forms not available
1 - Very few forms on-line, usually just personal income tax forms
2 - Several forms are on-line, several business forms as well
3 - All of the forms are on-line

2. Can taxpayers file their taxes on-line?

0 - No
1 - Working to implement
2 - Only through a third party and/or piggy back to federal on-line filing
3 - Can file through the state's Web site

3. Can taxpayers find help through a general mailbox on the state revenue Web site?

0 - No
1 - Pilot program only
2 - Can get general questions answered through a mailbox
3 - Can get specific tax questions answered through mailbox

4. Can taxpayers contact a specific person in the revenue department using e-mail via the Web site?

0 - No
1 - Working to implement
2 - Some professional staff have e-mail address on-line
3 - Most professional staff have e-mail addresses are on-line

5. Is the state using a digital system to record, store, and retrieve tax records?

0 - No
1 - Starting to implement
2 - Using some form of on-line system for storage, very little paper involved
3 - Are using a digital system (such as imaging, scanning) to store all records

Health, Welfare and Social Services

1. Can participants access benefit forms on-line or at a kiosk?

0 - No
1 - In the process of implementing, bidding, pilot program exists
2 - Has a system in place, kiosk only
3 - Some forms can be accessed off the Web

2. Can participants apply for a benefit on-line or at a kiosk?

0 - No
1 - In the process of implementing/pilot program exists
2 - Has a system in place, kiosk only
3 - Can be accessed off the Web

3. Can participants get advice and information through a general mailbox on-line?

0 - No
1 - In the process of implementing/pilot program exists
2 - Help can be accessed at some departments
3 - All departments provide a mailbox for on-line assistance

4. Can participants search for jobs available in the state either on-line or at a kiosk?

0 - No
1 - In the process of implementing
2 - Only at a kiosk
3 - At a kiosk and on the state's Web site

5. Is the state using electronic benefit transfers?

0 - No
1 - Starting to implement, may have a bid out
2 - Have at least one program in place
3 - All benefits are electronically transferred

6. Is the state using "smart cards" for benefits?

0 - No
1 - Starting to implement, have a bid out
2 - Have at least one program in place
3 - Multi-benefit smart card system in place

7. Is the state using a digital system to store records?

0 - No
1 - Starting to implement
2 - Using some form of on-line system for storage, very little paper involved
3 - Are using a digital system (such as imaging, scanning) to store all records

8. Can participants contact a specific person in the department using e-mail via the Web site?

0 - No
1 - The state is in the process of implementing.
2 - Some professional staff can be accessed through e-mail off Web site
3 - Most professional staff can be accessed through e-mail off Web site

Law Enforcement and the Courts

1. Can citizens access court opinions on the Web?

0 - Opinions not available on-line
1 - Opinions available on-line only through a subscription (paid) service
2 - Some opinions (Appellate or Supreme) are on-line at state's Web site
3 - Both Appellate and Supreme court opinion's are on-line at state's Web site

2. Does the state have a digital communication system that will allow police, fire, other emergency vehicles communicate to one another? Are they using computers to access information from mobile vehicles?

0 - No
1 - In the process of implementing
2 - Some of the police, counties are using computers or have a digital communication system
3 - Many of the police cars have computers, the state has a digital communication system

3. Does the state recognize a digital signature?

0 - No
1 - In the process of implementing (possibly in state legislature, state actively working to implement, etc.)
2 - State recognizes digital signature for limited purposes
3 - State recognizes a digital signature for all official purposes

4. Are there integrated computer information systems in the area of criminal justice/law enforcement

0 - No
1 - In the process of implementing
2 - Some forms of integrated systems exist (AFIS with live scan, integrated state criminal justice system, etc.)
3 - Integrated criminal justice systems exist throughout most of the state

5. Can someone access individuals in the public safety arena by e-mail off the Web?

0 - No
1 - Yes but very few
2 - Yes, but less than 50% accessible from Web
3 - Yes most police have e-mail address and accessible from Web

Other Initiatives

1. Does the state have a Information Technology Commission (or similar name) that is overseeing all implementation of information/digital technologies?

0 - None appears to exist
1 - Approved but not yet underway
2 - Exists but not active
3 - A commission, office or central point exists that is overseeing all IT implementation policy

2. Does the state have a Chief Information Officer?

0 - None appears to exist
1 - Approved but not yet appointed
2 - Exists below Cabinet level
3 - Cabinet level CIO

3. Do state employees have access to the Internet?

0 - Negligible
1 - Less than 25% have access
2 - Up to 50% have access
3 - Over 50% have access

4. Is the state building an intranet?

0 - No
1 - In the process of building
2 - Several agencies have their own intranet
3 - Have a state intranet

5. What is the state doing to increase its band width?

0 - Nothing
1 - Studying to see what is needed
2 - Moderate activity in this area, building as they need it
3 - Lots of activity, adding T1 lines, T3 lines, ATM etc.

Appendix Three:
State-by-State Raw Scores

The following pages present the raw data collected from various research sources, our own examination of state Web sites, and our conversations with officials in state government and at public institutions of higher learning.[4] In the table that follows, we report and tabulate the raw scores on the basis of the zero-3 scale created for each specific technology application (See Appendix Two.)

The raw data reported below differs from the data reported in the body of the report, which was "re-scaled" to a scale of 0-100. This re-scaling was necessary both to facilitate comparison between the different application categories and to permit inclusion of a few states for which complete data could not be obtained. (This was the case for approximately three percent of the 2,200 data points collected for the study.)

[4] Sources included: NASIRE's *Electronic Commerce* report; *Government Technology* magazine; Education Testing Services Policy Information Center (using QED data); *The State Factor* published by the American Legislative Exchange Council.