

REPORT OF

**THE JOINT COMMISSION ON
TECHNOLOGY AND SCIENCE**

**TO THE GOVERNOR AND
THE GENERAL ASSEMBLY OF VIRGINIA**



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**FINAL REPORT OF THE
JOINT COMMISSION ON TECHNOLOGY AND SCIENCE
to
The Governor and
The General Assembly of Virginia
Richmond, Virginia
May 2000**

I. COMMISSION ORIGIN AND BACKGROUND

To continue the work begun by the Task Force on Science and Technology established under House Joint Resolution 390 (1993), the 1996 General Assembly adopted House Joint Resolution 195, which created a joint legislative subcommittee to study science and technology. The subcommittee reported to the Governor and the 1997 General Assembly in House Document No. 81 (1997). The creation of the Joint Commission on Technology and Science ("Commission") was included among the recommendations of the subcommittee. Created by the 1997 General Assembly through House Bill 2138, the Commission is a permanent legislative commission charged to study all aspects of technology and science and to promote the development of technology and science in the Commonwealth of Virginia through sound public policies. (See Chapter 11 (§ 30-85 et seq.) of Title 30 of the Code of Virginia.) The Commission consists of nine legislators (five delegates and four senators); submitted its first report to the Governor and the 1998 General Assembly in House Document No. 89 (1998); and maintains a website at <http://jcots.state.va.us>.¹

At its meeting on April 7, 1999, the Commission adopted its 1999-2000 work plan. (See Appendix 1.) The work plan identified five issues for study through the establishment and work of advisory committees, co-chaired by the Commission members: Education (Delegate Plum and Senator Howell, co-chairs); Economic Development (Delegate Bennett and Delegate Purkey, co-chairs); Electronic Government (Senator Ticer, chair); Law Enforcement (Senator Newman and Senator Schrock, co-chairs), and Selected Topics in Law and Technology (Delegate Diamonstein and Delegate May, co-chairs). Of these topics, the advisory committee on Selected Topics in Law and Technology exclusively focused on the Uniform Electronic Transactions Act and the Uniform Computer Information Transactions Act.

During the period from November 1999 to January 2000, advisory committees met several times to study the topics assigned to them. During the Commission's meeting

¹ The Uniform Resource Locator (URL) or the web address of the Commission's website has been changed from its original address of <http://legis.state.va.us/jcots/jcots.htm> to **<http://jcots.state.va.us>**. This change was made to provide easier access to numerous materials available on the Commission's website.

on January 7, 2000, advisory committees presented their final reports and recommendations, including legislative drafts that would implement these recommendations if enacted. During this meeting, Commission staff presented additional miscellaneous legislative proposals for the Commission to consider. These additional legislative proposals arose from testimonies and presentations made at past Commission meetings and from past Commission activities.

On January 12, 2000, the Commission met to consider the proposed legislation. All legislative proposals were approved by the Commission to be recommended to the Governor and the General Assembly and to have the legislative drafts be introduced by the Commission members. These recommendations are discussed in Part II of this report. All legislative proposals were approved by unanimous voice votes except for the legislative draft of the Uniform Computer Information Transactions Act (UCITA). The legislative draft of the UCITA was approved on 7-to-2 vote with Delegate Bennett and Senator Newman voting against its introduction as a Commission recommended bill.

Thus, after the January 12, 2000, meeting, the Commission submitted the Interim Report and Legislative Recommendations of the Joint Commission on Technology and Science (HD 82, 2000), and the Commission members introduced 15 bills and nine resolutions. The Interim Report contains legislative recommendations as well as the study reports in the following subjects: (i) Educational Technology (Advisory Committee One), (ii) Economic Development (Advisory Committee Two), (iii) Electronic Government (Advisory Committee Three), (iv) the Uniform Electronic Transactions Act and the Uniform Computer Information Transactions Act (Advisory Committee Five), and (v) miscellaneous legislation which arose from past Commission activities and presentations made to the Commission. Of the 15 Commission-recommended bills, seven bills were enacted into law, seven bills were continued to 2001 Session, and one bill failed. Of the nine Commission-recommended joint resolutions, six resolutions were agreed to by both houses, one resolution was incorporated into another resolution that was agreed to, a study resolution was passed by indefinitely but will be forwarded with a study request letter from the Speaker of the House, and one resolution failed. (See Part II)

II. LEGISLATIVE HISTORY OF THE COMMISSION RECOMMENDED LEGISLATION

A. Education

1. SB 83 and HB 203. Standards of Quality; educational technology.

- SB 83 (Patron-Sen. Howell) - *continued to 2001 Session in Senate Committee on Education and Health.*
- HB 203 (Pattern-Del. Plum) - *enacted as amended (Chapter 867 of the 2000 Acts of the General Assembly)*

Senate Bill 83 and House Bill 203, as introduced, would have made several changes to the Standards of Quality (§§ 22.1-253.13:1 et seq.) to include educational technology. The bills would have required: (i) the Board of Education to include proficiency in the use of computers and related technology in the Standards of Learning; (ii) revising of the requirement for local school board K through 12 programs to include "technological proficiency" to specify "proficiency in the use of computers and related technology"; (iii) hiring of technology resource assistants to serve every school in each school division; (iv) modifying the requirements for the Standards of Accreditation to include "integration of educational technology into instructional programs" and "staff positions for supporting educational technology"; (v) adding to the staffing requirements for public schools "technology resource assistants, one to serve, either part time or full time, in each school" in each school division; (vi) the Board of Education to provide technical assistance on professional development by changing the language from programs "designed to seek to ensure" proficiency in the use of technology to "designed to ensure"; (vii) each local school board's professional development program in educational technology to be designed to facilitate integration of computer skills and related technology into the curricula; (viii) the Board of Education's six-year technology plan to be developed "to integrate educational technology into the Standards of Learning and the curricula of the public schools in Virginia"; and (ix) local school division technology plans are to be "designed to integrate educational technology into the instructional programs of the school division."

When the Senate Committee on Education and Health and the House Committee on Education initially deliberated SB 83 and HB 203, respectively, the biggest concern raised was the fiscal impact of the bills. In recommending these two bills, the Commission recognized that the public schools needed technology resource assistants who would provide technology support to teachers and students in using educational technology. Thus, one of the requirements of the bills was for each school district to hire technology resource assistants. This, however, was the cause of the financial concern. The Department of Planning and Budget estimated that \$18 million to \$36 million per year were necessary to hire these technology resource assistants, and Delegate Plum had submitted a budget amendment of \$36 million for this purpose.²

Ultimately, the Senate Committee on Education and Health voted to continue SB 83 to the 2001 Session. The House Committee on Education, however, voted to remove the technology resource assistant hiring requirement and report the HB 203. Thus, with this hiring requirement removed, the Department of Planning and Budget estimated that the fiscal impact of HB 203 was none, and HB 203 passed both houses as amended. Hence, the enacted version of HB 203 contains eight of the original requirements discussed above, less the technology resource assistant hiring requirement.

² This budget amendment (Item 143 #34h of HB 30) was not adopted by the House Committee on Appropriations.

2. SB 84 and HB 512. Computer Proficiency Enhancement Project.

- SB 84 (Patron-Sen. Howell) - *continued to 2001 Session in House Committee on Education.*
- HB 512 (Pattern-Del. Plum) - *continued to 2001 Session in House Committee on Education.*

Senate Bill 84 and House Bill 512 would have created the Computer Proficiency Enhancement Project ("Project"). The bills would have required the Department to designate six schools (two elementary schools, two middle schools, and two high schools) located in economically disadvantaged areas of the Commonwealth as Project schools. The Department was to provide portable computers to these schools. The portable computers may be used in classroom settings and shall be available to students to take home. The Project would have lasted three academic years, at the end of which the Department would report to the Governor and the General Assembly regarding the successes and shortcomings of the Project, along with the Department's recommendation regarding the Project. The Department would have also been required to provide interim reports to the Joint Commission on Technology and Science at the end of each academic year of the Project. To fund this project, Senator Howell had submitted a budget amendment of two million dollars (Item 141 #20s of SB 30), and Delegate Plum had submitted a budget amendment of one and one-half million dollars (Item 141 #12h of HB 30).³ SB 84 was considered by and reported from the Senate Committee on Education and Health and Senate Committee on Finance, successively. When it reached the Senate floor, the Senate unanimously passed SB 84. The House Committee on Education, which had previously considered the identical HB 512 and had voted to continue it to the 2001 Session, voted to continue SB 84 to the 2001 Session as well.

3. SJR 40 and HJR 63. Study; educational technology funding in grades K through 12.

- SJR 40 (Patron-Sen. Howell) - *incorporated in SJ 237*
- HJR 63 (Patron-Del. Plum) - *tabled in House Committee on Rules*

Senate Joint Resolution 40 and House Joint Resolution 63 were identical resolutions that would have directed the House Committee on Appropriations, the House Committee on Finance, and the Senate Committee on Finance to study and develop a formula to fund educational technology and technology support personnel. HJR 63, however, was tabled in the House Committee on Rules. SJR 40, however, was incorporated into SJR 237, which passed. SJR 237, patroned by Senator Mimms, continues the Commission on Educational Infrastructure as the Commission on Educational Infrastructure and Technology. As agreed to by both houses, SJR 237 directs

³ Neither budget amendments were adopted by the respective committees.

the Commission on Educational Infrastructure and Technology to include in its agenda, "the development of a formula for funding educational technology and technology support personnel." The Commission on Educational Infrastructure and Technology is to be composed of 34 members including the Chairman of the Senate Committee on Finance, Co-chairmen of the House Committee on Appropriations, Co-chairmen of the House Committee on Finance, other legislators as appointed by the Senate Committee on Privileges and Elections and the Speaker of the House, and some citizen members.

4. SJR 41 and HJR 62. Education web portal.

- SJR 41 (Patron-Sen. Howell) - *agreed to by the Senate and the House*
- HJR 62 (Patron-Del. Plum) - *agreed to by the House and the Senate*

Recognizing the need for a single comprehensive web portal for educational information, the Commission recommended Senate Joint Resolution 41 and House Joint Resolution 62. Currently, the Commonwealth sponsors three comprehensive educational websites (Commonwealth of Knowledge,⁴ Department of Education,⁵ and Virginia Information Providers Network⁶). These websites, along with numerous other educational websites, provide educational information to school administrators, teachers, parents, and students. Because there are numerous sources of information, a person interested in educational information sometimes must search several different sites. In addition, sometimes a person retrieves duplicative or conflicting information. To cut down on the time a person may spend on searching for information, and to ensure that the information retrieved is valid, SJR 41 and HJR 62 request the Virginia Information Providers Network (VIPNet) to create a common gateway to serve as a web portal for educational information and services similar to that created by VIPNet for government information and services. The web portal would provide fast, convenient access to educational information and services for all Virginians interested in such information and services. The resolutions request that the web portal include information on the procurement of educational technology, which is to come from the Department of General Services' central electronic procurement website and other appropriate websites.

B. Economic Development

1. HB 400. Tax credit for investing in a small technology business.

- HB 400 (Patron-Del. Bennett) - *continued in Senate Committee on Finance*

⁴ <http://www.knowledge.state.va.us>

⁵ <http://www.pen.k12.va.us>

⁶ <http://www.vipnet.org>

To encourage investing in small technology businesses, the Commission recommend House Bill 400, which would have created a special tax credit program for investing in small technology businesses. HB 400 defined a small technology business as a private business which (i) is engaged in research and development or commercialization of information technology or biotechnology, (ii) has 10 or fewer full-time employees, and (iii) is engaged in business in the Commonwealth. An individual taxpayer would have been allowed a credit in the amount equal to 25 percent of the investment, not to exceed \$50,000. A partnership or a corporation would have been allowed a credit in the amount equal to 25 percent of the investment, not to exceed \$100,000. HB 400 passed the House but was continued to the 2001 Session in the Senate Committee on Finance.

2. HB 401. Qualified equity and subordinated debt investments tax credit.

- HB 401 (Patron-Del. Bennett) - *continued in Senate Committee on Finance*

House Bill 401 would have amended the qualified equity and subordinated debt investment tax credit (§ 58.1-339.4), also known as the Angel Investor Act, by (i) increasing the total amount of tax credit available in a calendar year from \$5 million to \$20 million, (ii) changing the \$50,000 cap per taxpayer to the amount equal to 10 percent of the total amount of tax credit available in a calendar year, (iii) reducing the tax credit from an amount equal to 50 percent of the investment to 25 percent of the investment so that the total amount invested would be higher, and (iv) reducing the number of years an investor must retain the equities from 5 years to 2 years. In addition, the HB 401 would have required the Virginia Department of Taxation to adopt regulations that would (i) make tax credits available in quarterly installments of 25 percent of the total annual credit on first-come, first-served basis, (ii) cap the amount of credit allowed per taxpayer in a quarter to 2.5 percent of the total amount allowed in a calendar year, and (iii) expunge any unclaimed credit in a quarter. HB 401 passed the House but was continued to the 2001 Session in Senate Committee on Finance.

3. HB 421. Technology and Biotechnology Investment Act; created.

- HB 421 (Patron-Del. Purkey) - *continued to 2001 Session in Senate Committee on Finance*

During 1999 Session, the Commission recommended HB 1667, which would have created investment and research and development tax credit program, including a tax credit transfer program, for the technology and biotechnology industries. The bill was amended several times as it went through the legislative process. HB 1667 was enacted with a reenactment clause requiring that HB 1667 must be reenacted by the 2000 General Assembly for it to become effective. The Commission studied HB 1667 during the past interim, and decided to recommend that instead of a bill reenacting HB 1667 in its final form, a bill that is similar to the introduced version of HB 1667 would be more favorable to the technology and biotechnology industries. Thus, the Commission recommended HB 421 of the 2000 Session. HB 421, which also was amended several times as it went

through the legislative process, passed the House but was continued to the 2001 Session in the Senate Committee on Finance.

4. HJR 35. Study; biotechnology venture capital.

- HJR 35 (Patron-Del. Bennett) - *agreed to by the House and the Senate*

The Commission recognized that the particular needs and business practices of the biotechnology industry tend to deter traditional sources of capital from making money available to the biotechnology industry. Biotechnology companies, though prosperous, face a severe obstruction in that access to capital may be inadequate. Neighboring states, such as Maryland and North Carolina, have successfully created and have been operating state-sponsored and state-funded venture capital programs for biotechnology. Thus, the Commission recommended House Joint Resolution 35, which directs the Innovative Technology Authority, in consultation with the Virginia Biotechnology Research Park Authority, to study the feasibility of establishing a state-sponsored venture capital program tailored for biotechnology.

C. Electronic Government

1. SB 234. Advantage Virginia Electronic Procurement Program.

- SB 234 (Patron-Sen. Ticer) - *continued to 2001 Session in the Senate Committee on General Laws.*

Senate Bill 234 would have created a grant program that would have made one time grants of \$5,000, to the extent funds were available for this purpose, to any small business located within the Commonwealth that was approved for the Federal Supply Schedule but was not listed on FedCenter.com.⁷ To assist in federal procurement, the United States General Services Administration (GSA), an equivalent of the Virginia Department of General Services, created a list of vendors called the Federal Supply Schedule from which federal agencies may purchase goods and services. The GSA has contracted with a private Internet company to create a comprehensive procurement website called the FedCenter.com. FedCenter.com contains a list of vendors and their products, both of which must have been approved to be on the Federal Supply Schedule. -Federal purchasing officials can procure goods and services from this website. FedCenter.com charges \$5,000 initially to list a vendor and his products on the website and a monthly service fee.

Once introduced, SB 234 was assigned to the Senate Committee on General Laws. The committee members voiced several concerns. For example, considering that a \$5,000 business investment is relatively low, can a business that cannot afford that fee to

⁷ <http://www.fedcenter.com>

get on FedCenter.com actually process additional business transactions that will be brought about by being listed on the FedCenter.com? In addition, some of the committee members were uneasy about investing state funds into one private company, i.e., FedCenter.com, without learning more about the company. The Senate Committee on General Laws voted to continue SB 234 to the 2001 Session.

2. SB 235. Posting of procurement notices and advertisements on the Internet authorized.

- SB 235 (Patron-Sen. Ticer) - *enacted as amended (Chapter 692 of the 2000 Acts of the General Assembly)*

Senate Bill 235 authorizes posting procurement notices and advertisements on the Internet. Section 11-41 of the Code of Virginia provides that "[a]ll public contracts with non-governmental contractors . . . shall be awarded after competitive sealed bidding, or competitive negotiation." Though the Virginia Public Procurement Act, Chapter 7 (§§ 11-35 et seq.) of Title 11, provides some exceptions, generally, governmental procurements for goods and services above \$30,000 must utilize competitive sealed bidding or competitive negotiation.⁸ In turn, § 11-37 requires that "[p]ublic notice of invitation to bid" on competitive sealed bidding shall be "post[ed] in a designated public area or publi[shed] in a newspaper of general circulation, or both," and that "[p]ublic notice of the Request for Proposal" for competitive negotiation be given "by posting in a public area normally used for posting of public notices and by publication in a newspaper or newspapers of general circulation." SB 235 amends these two provisions, along with subsections D and E of § 11-41, which deal with notices of awards, to provide that "notice may also be published on the Department of General Services' central electronic procurement website and other appropriate websites." In addition, effective July 1, 2002, posting of notices requesting bids or proposals "on the public Internet procurement website designated by the Department of General Services shall be required." SB 235, in its enacted form, is identical to the enacted version of House Bill 1440, which was patroned by Delegate O'Brien.

3. SJR 71. Commending the Department of General Services.

- SJR 71 (Patron-Sen. Ticer) - *agreed to by the Senate and the House*

The Commission recognized that electronic procurement can bring about numerous benefits to the Commonwealth and that the Department of General Services (DGS) has been diligently working on developing a comprehensive electronic

⁸ Senate Bill 626 of the 2000 Session amended § 11-41 so that procurement of goods and services for the amount in between \$30,000 and \$50,000 may be done so by informal bidding of at least four bids but is otherwise exempted from competitive sealed bidding and competitive negotiation.

procurement system. The Commission also recognized that the full implementation of this system, among other things, will reduce the cost and time of purchase processing and will allow the Commonwealth to leverage its buying power. Thus, the Commission introduced Senate Joint Resolution 71, which commends the DGS for its efforts and which expresses the General Assembly's appreciation of those efforts.

4. SJR 72. Study; electronic contracting and electronic procurement.

- SJR 72 (Patron-Sen. Ticer) - *agreed to by the Senate and the House*

The Commission recognized the numerous benefits of electronic procurement and the need for a well-developed electronic procurement system. One aspect of such a system is the ability to successfully conduct audits. Auditing of public accounts is generally performed by the Auditor of Public Accounts, who is charged by § 2.1-155 to "audit all the accounts of every state department, officer, board, commission, institution or other agency in any manner handling state funds." Thus, the Commission recommended Senate Joint Resolution 72, which directs the Auditor of Public Accounts, in consultation with the DGS, to conduct a study and determine whether audits of public accounts can be satisfactorily conducted with electronic contracting and electronic procurement processes. SJR 72 was not intended for the DGS to stop its current development of an electronic procurement system and wait for the result of this study. Rather, SJR 72 directs the two entities to work together so that any barriers to auditing, practical, legislative or regulatory, could be identified early in the development process and promptly remedied.

D. Electronic Commerce

For the better part of the 1990s, the National Conference of Commissioners on Uniform State Laws (NCCUSL) has been drafting Article 2B of the Uniform Commercial Code (UCC 2B). Article 2B would have covered electronic transactions, i.e., conducting transactions by using electronic means such as computers and computer networks. Instead of creating the UCC 2B, in July 1999 the NCCUSL approved two new uniform acts, the Uniform Electronic Transactions Act (UETA) and the Uniform Computer Information Transactions Act (UCITA). UETA generally covers electronic transactions, and UCITA covers only transactions of computer information.

When the Commission's workplan was adopted in April 7, 1999, Advisory Committee Five was assigned to monitor Article 2B. After the NCCUSL broke up Article 2B into UETA and UCITA, however, Advisory Committee Five conducted a study on these two acts. Upon the completion of this study, the Commission recommended that both UETA and UCITA be introduced during the 2000 Session.⁹

⁹ For Advisory Committee Five's final report on UETA and UCITA please refer to the Commission's Interim Report (House Document 82, 2000) which is also available on the Commission's website <<http://jcots.state.va.us>>.

1. HB 499. Uniform Electronic Transactions Act

- HB 499 (Patron-Del. May) - *enacted as amended (Chapter 995 of the 2000 Acts of the General Assembly)*

UETA is designed to support the use of electronic commerce, primarily by establishing the legal equivalence of electronic records and signatures with paper writings and manually signed signatures. Under UETA, electronic transactions are not invalidated merely because they are in an electronic form instead of on paper. Thus, UETA allows the use of electronic records and electronic signatures in transactions, except those subject to parts of the Uniform Commercial Code other than Article 2 and Article 2A. UETA also allows the use of electronic records and electronic signatures by all public entities except the courts, whose usage of electronic records and signatures are governed by the Rules of the Supreme Court of Virginia and other parts of the Code of Virginia dealing with the courts. The fundamental purpose of UETA is to remove perceived barriers to electronic commerce and to support the development of the information economy.

2. SB 372 and HB 561. Uniform Computer Information Transactions Act

- HB 561 (Patron-Del. May) - *enacted as amended (Chapter 996 of the 2000 Acts of the General Assembly)*
- SB 372 (Patron-Sen. Schrock) - *enacted as amended (Chapter 101 of the 2000 Acts of the General Assembly)*

Virginia became one of the first states, if not the first, to consider UCITA through the study conducted by the Commission. As recommended by the Commission, UCITA was introduced and enacted during the 2000 Session, making Virginia the first state in the nation to adopt UCITA. As the name of the act indicates, UCITA governs transactions of computer information. Modeled after the UCC, UCITA mainly provides default rules, or gap filler rules. That is, most provisions of UCITA only apply if a contract adopts the provisions of UCITA or if a contract is silent about a certain issue, then the parties would apply the provisions of UCITA regarding that issue. Notwithstanding, UCITA does contain certain consumer protection provisions that cannot be waived or modified. For example, UCITA provides that certain requirements be met before a party can utilize electronic self-help. UCITA further provides that these requirements may not be waived or varied, except to add additional requirements.

House Bill 561 and Senate Bill 372, which adopted UCITA, contains two additional safety measures. First, UCITA will not become effective until July 1, 2001, giving interested persons an extra year to learn about the Act. Second, HB 561 and SB 372 directs the Commission to study UCITA again, focusing on UCITA's impact on

Virginia's businesses, libraries, and consumers, and report to the Governor and the General Assembly by December 1, 2001.

E. Miscellaneous

During the 2000 Session, the Commission also recommended, and the Commission members patroned, several miscellaneous bills and resolutions. These bills and resolutions did not arise out of advisory committee studies. Rather, they arose from past Commission legislation and activities.

1. SB 242. Freedom of Information Act (FOIA); electronic communication meetings.

- SB 242 (Patron-Sen. Newman) - *enacted as amended (Chapter 983 of the 2000 Acts of the General Assembly)*

During the 1999 Session, the Commission had recommended, and Senator Newman had introduced, Senate Bill 1026 (Chapter 704 of the 1999 Acts of Assembly) regarding electronic communications meetings. SB 1026 only applied to public bodies of the state legislative branch, under the Secretary of Commerce and Trade or the Secretary of Technology, and under the State Board of Community Colleges, and it loosened some of the restrictions placed on conducting electronic communications meetings by the Virginia Freedom of Information Act (FOIA), Chapter 21 (§§ 2.1-340 et seq.) of Title 2.1. For example, § 2.1-343.1 requires that a public notice of electronic meeting be provided 30 days prior to the meeting date and that a quorum of the members of the public body be present in one physical location. SB 1026 changed these requirements so that for the aforementioned public bodies conducting electronic communications meetings, a public notice of meeting be provided no less than seven days prior to the meeting,¹⁰ and that a quorum of the members of the public body be present within the Commonwealth but not necessarily in one location. In addition, SB 1026 had required the public bodies conducting the electronic communications meetings pursuant to its provisions to file reports thereon by October 15, 2000, to the appropriate governing authorities. SB 1026 was to expire on July 1, 2000. Senate Bill 242 of the 2000 Session, extends the deadline to file the reports to April 15, 2001, and extends the sunset date to July 1, 2002. SB 242 is identical to House Bill 54.

2. HB 403. Advanced wireless communications; use by localities.

- HB 403 (Patron-Del. Bennett) - *stricken from docket in House Committee on Science and Technology*

¹⁰ For a regular non-electronic meeting, § 2.1-343 requires that a public notice be given at least three working days prior to the meeting date.

The 1999 General Assembly passed two complementing bills that dealt with the use of advanced communications by localities. Prior to the 1999 Session, § 15.2-1500 had provided that a locality may use its communications services or infrastructure for intra-government purposes only and that it could offer such services and infrastructure to its own public bodies or to those of adjoining locality. House Bill 2277 of the 1999 Session (Chapter 916 of the 1999 Acts of Assembly) amended the Code of Virginia by providing an exception to § 15.2-1500, which was the new § 56-484.7:1, which allowed a locality to lease its dark fiber to "certificated local exchange telephone companies and to not-for-profit educational schools and institutions, hospitals, health clinics and medical facilities." Also during the 1999 Session, the General Assembly passed House Bill 2436, which created the Advanced Communications Assistance Fund ("Fund"), a grant program to assist localities develop communications infrastructure, and funded \$500,000 for the first year of the program.

Under HB 2436, § 9-265.1 provided that the grant was to be used for "(i) the internal communication needs of such localities, which may include but are not limited to fiber-optic, satellite, and wireless communications networks, or (ii) help in financing the costs of planning, designing, purchasing, leasing, installing, or maintaining dark fiber to the extent permitted in § 15.2-1500." During the administration of the Fund, a confusion arose. Because clause (ii) limits the use of the grant money to plan, design, purchase, lease, install, or maintain dark fibers, the backbone of a fiber-optic network, it was not clear whether "the internal communication needs" encompassed financing the cost of planning, designing, purchasing, leasing, installing, or maintaining satellite and wireless communications networks. Thus, for the 2000 Session, the Commission recommended and Delegate Bennett introduced House Bill 403, which would have inserted "satellite and wireless communications network" into clause (ii) of subsection B of § 9-265.1 and in §§ 15.2-1500, 56-484.7:1, and 56-484.7:2. During the Session, however, it was decided that for the purposes of the Fund, such changes were not necessary. Thus, HB 403 was stricken.

Related to the HB 403 and the Advanced Communications Assistance Fund, the Commission had recommended and Delegate Bennett had requested a budget amendment for \$500,000 so that the grant program may be continued to its second year. The budget amendment, however, did not make the final budget.

3. HB 513. Internet privacy policy.

- HB 513 (Patron-Del. Plum) - *enacted (Chapter 405 of the 2000 Acts of the General Assembly)*

On June 2, 1999, the federal Office of Management and Budget (OMB) issued a memorandum directing all federal departments and agencies to post Internet privacy policies on their websites. The memorandum required that "[e]ach policy must clearly and concisely inform visitors to the site what information the agency collects about individuals, why the agency collects it, and how the agency will use it." On July 23,

1999, the Governor issued Executive Order 51 (1999), which required executive agencies to develop privacy policies under the guidelines developed by the Secretaries of Technology and Administration, and to post such policies on their websites. Though the Commission is a legislative agency, thus not required to develop a privacy policy under Executive Order 51 (1999), the Commission developed its Internet privacy policy and posted the policy on the Commission's website.¹¹ The Commission recognized that Internet privacy policies should be developed for all state websites not just the websites for executive agencies' websites. Thus, the Commission recommended and Delegate Plum introduced House Bill 513, which expands the Internet privacy policy requirement to every public body of the Commonwealth.

HB 513 directs every public body that has an Internet website to develop an Internet privacy policy ("Policy") and an Internet privacy policy statement ("Statement") by December 1, 2000. The Policy shall be consistent with the requirements of the Privacy Protection Act of 1976 and be tailored to reflect the individual public body's information practices. The Statement, which explains the Policy, shall be posted on the public body's website in a conspicuous manner by January 1, 2001.

4. SJR 77. Study; Webcasting.

- SJR 77 (Patron-Sen. Newman) - *passed by in House Committee on Rules with Speaker's Letter*

During the 1999 interim studies, the Commission received numerous requests to webcast (i.e., broadcast over the Internet) Commission meetings so that persons who cannot attend the meetings can still observe the proceedings, especially those of Advisory Committee Five, which studied the Uniform Electronic Transactions Act and the Uniform Computer Information Transactions Act. Senate Joint Resolution 77 requested the Joint Rules Committee to study and set guidelines for webcasting legislative proceedings. The House Committee on Rules passed by SJ 77; however, the Joint Rules Committee is requested to conduct the study by the Speaker's Letter.

5. HJR 84. Commending Science Museum of Virginia.

- HJR 84 (Patron-Del. Plum) - *agreed to by the House and the Senate*

House Joint Resolution 84 commends the Science Museum of Virginia for its dedication for improving the science literacy of all Virginians, providing education in the area of science and technology through exhibits, lectures, events and hands-on activities designed to make science, engineering and technology fun and easier to understand. HJR 84 also recognizes the Science Museum's efforts in hosting the National Science and Technology Week.

¹¹ <http://jcots.state.va.us/documents/privacy.htm>

III. VIDEOCONFERENCED MEETING

On June 21, 1999, the Commission held a videoconferenced meeting that linked seven sites throughout the Commonwealth. Commission members were present at the following six locations: Northern Virginia Community College campuses in Alexandria (Senator Ticer) and Sterling (Delegate Plum and Delegate May); Danville Community College in Danville (Delegate Bennett); Central Virginia Community College in Lynchburg (Senator Newman); the downtown campus of J. Sargeant Reynolds Community College in Richmond (Senator Schrock, who was joined by Senator Walter Stosch and Delegate Viola Baskerville); and Tidewater Community College in Virginia Beach (Delegate Purkey). Thomas Nelson Community College in Hampton was the seventh site. All sites were open to the public. Approximately 60 people attended the meeting.

Patricia Jackson, from Virginia Tech, discussed the Internet2¹² project. Building on the tremendous success of the past 10 years in generalizing and adapting research Internet technology to academic needs, the university community has joined together with government and industry partners to accelerate the next stage of Internet development in academia. The Internet2 project is bringing focus, energy, and resources to the development of a new family of advanced applications to meet emerging academic requirements in research, teaching, and learning. Internet2 universities, which include Old Dominion University, the University of Virginia, and Virginia Tech, are working with industry, government, and other research and education networking organizations to address the major challenges facing the next generation of university networks.

John Morison, general manager of WHRO, the public telecommunications center for Hampton Roads, discussed digital television. The television picture which viewers currently receive is based on an analog transmission system that is more than 50 years old. In December 1996, the Federal Communications Commission approved the U.S. standard for a new era of television called digital television. In a digital system, images and sound are captured using the same digital code found in computers, that is, ones and zeroes. The digital revolution will not only dramatically improve the quality of the television picture, but also make possible the over-the-air delivery of several simultaneous services to viewers. This is due primarily to the three main benefits of the digital system: high definition television (known as "HDTV"), multicasting in standard definition television, and data transmission. By May 1, 2003, all commercial and public television stations must activate a digital television channel. By 2006, all analog transmissions will cease and only digital transmissions will be broadcast. A report prepared at the request of public television suggested that it will cost \$71.3 million to convert all of Virginia's public television stations to digital systems, which does not include the cost of a statewide interconnect between the stations. The Joint Legislative Audit and Review Commission is reviewing that report and preparing its own report for

¹² <http://www.internet2.edu>

the General Assembly that discusses the cost of converting Virginia's public broadcasting stations to a digital system.

John Edwards, CEO of Telework Analytics International, Inc.,¹³ discussed telecommuting and teleworking. Mr. Edwards provided some common definitions for telecommuting and teleworking and described some of the advantages and disadvantages for both employees and their managers that should be considered. He suggested that Virginia may want to designate teleworking as a mode of transportation; set a goal that a certain percentage of state employees will telework; create a "T2000" certification by which employers would designate teleworkers; permit 100 percent depreciation of up to \$1,750 per "T2000 employee" during the first year that the employee teleworks; ensure that zoning regulations and restrictive covenants not interfere with "T2000 employee" teleworking; and promote increased bandwidth.

Aaron Schroeder from Virginia Tech's Center for Transportation Research discussed "Travel Shenandoah," a comprehensive advance traveler information service for the 11-county region along the Interstate 81 corridor in the Shenandoah Valley. The project, which is being funded by the Virginia Department of Transportation (VDOT), is a public-private partnership between VDOT, the Virginia Tourism Corporation, the Shenandoah Valley Travel Association, Shenandoah National Park, Virginia Tech, and the ShenTel Service Company (a subsidiary of Shenandoah Telecommunications Corporation). The system is an example of an intelligent transportation system project, which is the application of information, computer, and telecommunications technologies to the field of transportation. The 30-month project was divided into three phases. Phase One, requiring a detailed design, and Phase Two, involving implementation and testing, have been completed. Phase Three is an 18-month demonstration project. Travel Shenandoah provides six categories of user information: travel alerts; traffic/travel conditions; traveler services; tourism, attractions, and events; emergency services; and trip routing. Information can be delivered via the Internet,¹⁴ cellular phone, digital wireless or landline phones, pager, cable television, changeable message signs along the highway, highway advisory radio, and highway kiosks around the state. While the system is regional at this time, developers hope that it will provide a foundation for a permanent, statewide service.

Bette Dillehay, Director of Virginia's Century Date Change Initiative Project Office, provided a status report on the Commonwealth's Year 2000 readiness. Ms. Dillehay indicated that planned costs totaled \$202.4 million; actual costs are anticipated to be \$133.1 million, and appropriations for the Year 2000 remediation effort totaled \$90.4 million. With the Commonwealth's effort at 99 percent completion, agency heads have certified that factors that could cause disruption for priority business activities have

¹³ <http://www.teleworker.com>

¹⁴ http://www.travelvirginia.org/travel_shenandoah.cfm

been identified, Year 2000 compliance of those items has been investigated, remediation has been performed where appropriate, and a contingency plan has been established.

The Commission meeting was videoconferenced via Net.Work.Virginia,¹⁵ the Commonwealth's first high-speed, broadband communications network delivering ATM (asynchronous transfer mode) service statewide. Net.Work Virginia is the result of a project led by Virginia Tech in association with Old Dominion University and the Virginia Community College System to develop universal access to advanced digital communications services for all of Virginia. The network can carry thousands of simultaneous, two-way flows of voice, data, and video, and is based on Sprint's existing broadband fiber optic network in Virginia, with Bell Atlantic installing a new relay service technology that allows users to put voice, data, and video onto one communications line. Over 500 statewide sites are connected to Net.Work Virginia. Participants include many colleges, universities, community colleges, public libraries, and K-12 schools.

In October 1997, the Commission held the first videoconferenced meeting of a public body in the Virginia legislature. Net.Work Virginia also supported that videoconferencing effort. In 1997, the Commission pushed the alleged limits of Net.Work Virginia by successfully linking five public sites. Due to tremendous advances in the network's technological capabilities, the Commission again pushed the envelope for the June 1999 meeting with a seven-site videoconference. Sites were selected based on Commission members' preferences and the availability of Net.Work Virginia at or around those preferences. The Virginia Community College System accommodated numerous logistical details and technological support for the June 1999 meeting.

In addition to the technology of linking the seven meeting sites, several presenters were "bridged" into the meeting from their own locations. Patricia Jackson narrated a virtual tour of the Interent2 Technology Studio at 12th and Main Streets in Richmond, using a television camera and technical support supplied by Virginia's Department of Information Technology. John Morison discussed digital television from WHRO's broadcast studios in Norfolk. Unfortunately, video transmission of Mr. Morison's presentation was interrupted, but the audio continued. Aaron Schroeder made his presentation on Travel Shenandoah from the Center for Transportation Research in Blacksburg. The bridge connection for these presentations was provided by the department of video/broadcast services at Virginia Tech.

The Commission's 1997 videoconferenced meeting was held pursuant to stringent provisions in Virginia's Freedom of Information Act (FOIA) on electronic communication meetings. In contrast, the June 1999 meeting was held pursuant to Chapter 704 of the 1999 Acts of the General Assembly. This Act was a Commission-recommended bill that was patroned by Senator Newman, a Commission member, and passed during the 1999

¹⁵ <http://www.networkvirginia.net>

Session. Chapter 704 became effective March 28, 1999.¹⁶ Chapter 704 loosened up FOIA's restrictions on electronic communication meetings. Most significantly, the presence of a quorum in one physical location is not required under Chapter 704. Instead, a quorum of the public body need only be physically present within Virginia at locations that are open and accessible to the public. Chapter 704 also provides that public notice of the meeting need only be given seven days before the meeting instead of FOIA's 30-day notice requirement.

The Commission was able to meet all but one requirement of Chapter 704 in videoconferencing its June 1999 meeting. The Act required public bodies to make an audio/visual recording of any videoconferenced meeting held pursuant to its provisions, which then must be preserved for three years from the meeting date and made available to the public for inspection and copying pursuant to FOIA. A videotape recording of the Commission's meeting was programmed to be made; unfortunately, however, because the Richmond site had some initial difficulty joining the videoconferenced meeting, the system had to be "rebooted" (i.e., restarted) and the programming to make the videotape was lost. As a result, no videotape of the meeting is available.

The Commission received very favorable public comment about its videoconferenced meeting, despite the initial problem with linking the Richmond site to the meeting and the lack of video during Mr. Morison's presentation on digital television. Complaints were voiced by several citizens that no sites west of Roanoke had been selected for the meeting. Although many legislators from Southwest Virginia have been particularly supportive of Chapter 704, no legislators from that region serve on the Commission.

¹⁶ During the 2000 Session, the Commission recommended extending the sunset date of the Chapter 704 of the 1999 Acts of the General Assembly; thus, Senator Newman patroned Senate Bill 242 which extended Chapter 704 of the 1999 Acts to July 1, 2002. (See Part II of this report.)

IV. CONCLUSION

The Joint Commission on Technology and Science extends sincere appreciation to everyone who participated in the Commission's work during the 1999-2000 interim and supported the Commission's legislative recommendations during the 2000 Session of the General Assembly. We look forward to continuing our work in 2000-2001.

Respectfully submitted,

Delegate Kenneth R. Plum, Chair
Senator Patricia S. Ticer, Vice Chair
Delegate William W. Bennett, Jr.
Delegate Alan A. Diamonstein
Delegate Joe T. May
Delegate Harry R. Purkey
Senator Janet D. Howell
Senator Stephen D. Newman
Senator Edward L. Schrock

Appendix 1.
1999-2000 Commission Workplan
(Adopted April 7, 1999)

Issues to Actively Study through Advisory Committees

1. Education (Delegate Plum and Senator Howell)

As part of the "K through life" learning process, the convergence of technology and education has given rise to issues involving funding, infrastructure, connectivity, access, teaching, and training in Virginia's elementary and secondary schools, institutions of higher education, and public libraries. This advisory committee would provide a forum to examine the following suggested topics involving technology and education:

- Implementation of House Bill 1043 (Jackson) requiring acceptable Internet use policies in Virginia's public schools and libraries, including issues raised in House Bill 1703 (Abbitt), which would have mandated software filtering in Virginia's public schools.
- Implementation of the report, "Infopowering the Commonwealth" in Virginia's public libraries.
- Update on the universal service fund and the E-Rate in Virginia.
- Development of the New River Valley Magnet School for Technology to prepare secondary school students for careers in information technology.
- Development of a statewide funding formula or other source of stable revenue dedicated to K-12 educational technology.
- Expansion of educational opportunities through distance learning.

2. Economic Development (Delegates Bennett and Purkey)

The biotechnology and aerospace industries are in their early stages of development in Virginia, but have the potential to become significant contributors to the Commonwealth's economic development in the 21st century. In addition to studying general economic development policy, this advisory committee would provide a forum to examine these emerging industries and the legal, technological, scientific, medical, ethical, and economic issues they raise in the following suggested topics:

- Cloning.
- Follow-up on House Bill 1667 (Purkey) establishing a research and development tax credit for technology and biotechnology companies.
- Review of the report, An Analysis of Virginia's Biotechnology Industry.
- Development of CIT projects to: (i) establish a Bioinformatics Consortium between George Mason University's Bioinformatics Group, Virginia Tech's Fralin

Biotechnology Center and Engineering School, and the American Type Culture Collection and (ii) create a Technology Innovation Center at Virginia Commonwealth University to develop biochips and biosensors.

- Review federal laws and policies on spaceports and the commercial space industry to encourage development of commercial space infrastructure in Virginia.
- Development of a NASA incubator program in Hampton Roads.
- Review of Wallop's Island and the Virginia Spaceport.
- Monitoring of Senate Joint Resolution 502, directing the Secretary of Technology, in consultation with other entities, to study and develop a coordinated research and development policy for the Commonwealth. The study will also include a review of the intellectual property policies and procedures of institutions of higher education and federal laboratories, and best practices to link intellectual resources to commercialization.
- Review of the technology and science resources across the Commonwealth, including research institutions.
- Strategies to ensure statewide economic development of information technology and communications industries.

3. E-Government (Senator Ticer)

Since its creation in 1997, the Commission has been an active participant and enthusiastic supporter of advancing the goal of delivering better, faster, and cheaper government services and information through information technology and advanced communication infrastructures. In conjunction with the Secretary of Technology, this advisory committee would provide a forum to examine the following suggested topics involving technology and government:

- Electronic contracting and procurement.
- Implementation of House Bill 1115 (Darner) creating the Information Technology Access Act for blind and visually impaired individuals.
- Establishment of statewide standards for collecting geographic information system data.
- Promotion of Web-based services, including electronic commerce.
- IT strategy and enterprise architecture.
- Agency project updates: e.g., Transportation and Tax.

4. Law Enforcement (Senators Newman and Schrock)

Coordinated and proactive efforts, including improved intelligence gathering and targeted deployment, will be increasingly called for in 21st century law enforcement. This advisory committee would provide a forum to examine the following suggested topics involving law enforcement and technology:

- Enhancement of law enforcement through the use of technology.
- E-911 Wireless.
- Internet gambling.
- Determining the optimum strategy for using technology to enforce traffic laws.
- Cyberthreats to large computer databases.
- Virginia Computer Crimes Act (§§ 18.2-152.1 through 18.2-152.14).

5. Selected Topics in Law and Technology (Delegates Diamonstein and May)

The Commission has previously studied several issues that may suggest revisions and updates to the Code of Virginia to accommodate the changes brought on by the information age. This advisory committee, with assistance provided by professors and students at the Center for Law and Technology at George Mason University, would function as a drafting, research, and review committee on the following suggested topics involving law and technology:

- Uniform Commercial Code Revised Article 2B (Uniform Electronic Transactions Act and Uniform Computer Information Transactions Act).
- Electronic signatures (§§ 59.1-467 through 59.1-469).
- Intellectual property.

Appendix 2.
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Uniform Computer Electronic Transactions Act and
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