Internet Access Issues Involved in Electronic Government

Prepared for the Electronic Government Task Force: Issues Subcommittee
By the Department of Information Resources

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Executive Summary

The Electronic Government Task Force has identified the issue of Internet access as vital to the success of the Texas State portal, Texas Online. The Task Force believes that government services on the Internet should be made available to all portions of the Texas population. This report explores four major barriers to Internet access by certain segments of the state population: Geographic Barriers, Economic Barriers, Language Barriers, and Disability Barriers.

Texas should be active in reducing the digital divide. If Texas ignores the digital divide problem Texas will suffer economic and social consequences in the future. Economically, if Texas does not have a technologically educated work force, it may not be able to compete in the global marketplace. On the social level, a widening digital divide means that large portions of the population may be blocked out of the Internet world. This portion of the population may not be able to compete for jobs and participate in an economy that is growing increasingly electronic and digital.

Fortunately, Texas State government is already taking steps to ensure accessibility. Texas recently won the NASIRE, (National Association of State Information Resource Executives), Accessibility 2000 Recognition Award for Outstanding Achievement in the Field of Information Technology. This award recognizes Texas' exemplary leadership activities and program development initiatives that assure expanded access to and independent use of information technology by people with disabilities. Because Texas has shown leadership in making information technology accessible, it should continue to improve accessibility by tackling other barriers.

The first barrier of Internet accessibility that needs to be addressed is geographic. Being a traditionally agricultural state, Texas has a large rural population. A majority of the state has dial-up Internet access, but providers are not serving some rural areas. Preliminary data for 2000 provided by the Public Utility Commission indicates that 14 of over 1550 exchanges in Texas do not have access to an Internet Service Provider using a local telephone call. This means that an estimated 6.36% of the Texas populationpay higher access fees and high long-distance charges.

According to the a study commission by the Electronic Government Task Force and conducted by the University of Texas at Austin, the rate of Internet use in Texas' urban and rural areas are about the same. This demonstrates that despite the higher costs of access, rural Texans recognize the Internet as being a relevant part of their lives. Affordable access to the Internet needs to be extended to all rural communities of Texas in order to allow every Texan the opportunity to access online government services through Texas Online.

The second barrier to Internet accessibility is economic. Low-income families suffer from the economic barrier of affordability. If one cannot afford the basic necessities, it is unlikely that one will purchase a computer and Internet service The economic barrier to accessibility is demonstrated by the aforementioned commissioned study; this survey

found that over 70% of Texans earning below $30,000 do not use the computer or the Internet. The study also found that 60.1% of Texans use computers as well as the Internet.[1] This suggests that those not using computers and the Internet are concentrated in the lower income brackets. In addition to providing Internet access locations, the State needs to educate low-income groups on the usefulness and relevance of the State Portal.

The variety of languages spoken in Texas presents a third accessibility barrier. Texans are a people that represent a variety of ethnic and cultural heritages. The Latino population in Texas, many who speak Spanish, is expected to represent 35%-40% of all Texans by the year 2010.[2] The high percentage of Spanish speakers and the close connection with Mexico necessitate a Spanish version of Texas Online. The Latino population is not the only growing minority population in Texas. The Asian population, especially the Vietnamese and the Chinese communities, is expected to double in size by the year 2025. Although there may not be an immediate need to translate Texas Online for these populations, the need may arise in the future.

Lastly, Texas must continue to ensure accessibility to its disabled population. In order to make Texas Online accessible to those with disabilities, it is essential that participating state agencies follow the Department of Information Resources' rules on Web site design[3]. In addition, an adoption of a new technology, called voice portals, may increase accessibility to all the previously mentioned populations. When used with Interactive Voice Response systems (IVR), Voice portals make it possible for anyone with a telephone to access the Internet using a voice-activated Web service.

The exploration of these issues has resulted in the realization that Texas Online cannot and should not replace existing "brick and mortar" institutions. Although over 60% of Texans have access to the Internet, government cannot service solely this population. Unlike private businesses that are able to market to and serve a specific group of people, government has a responsibility to provide service to all citizens and businesses in its jurisdiction. As Texas government moves more applications and functions online, it should not demolish the traditional channels of service. Texas must be sensitive to the fact that many of its "customers" do not have access to the Internet.

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[1] Strover, Sharon and Joe Straubhaar. "Computer and Internet Use in Texas." Telecommunications and Information Policy Institute. University of Texas at Austin. Commissioned by the Electronic Task Force. May 2000.

[2] Texas. Comptroller of Public Accounts. "Texas Economic Update: Appendix Table 13 – Texas Population Estimates and Projects, by Age, Sex, Race, and Ethnicity: 1990, 200. 2005, and 2010. Retrieved from http://www.window.state.tx.us/ecodata/teu9907/teu_ap13.html.

[3] Texas. Secretary of State. Texas Administrative Code Rule 201.12.

Background

Recognizing the importance of electronic commerce to the state and its potential to help increase the effectiveness of state government, the Texas State Legislature mandated the demonstration of electronic government through Senate Bill 974 (Section 2054.062). The 1999 legislation charges the Department of Information Resources with "establishing a task force to assess the current and future feasibility of establishing a common electronic system using the Internet through which state agencies and local governments can accomplish the following types of functions electronically:

1. Send documents to members of the public and persons who are regulated by a state agency or local government;
2. Receive applications for licenses and permits and receive documents for filing from members of the public and persons who are regulated by a state agency or local government that, when a signature is necessary, can be electronically signed by the member of the public or regulated person; and
3. Receive required payments from members of the public and persons who are regulated by a state agency or local government."

The Task Force is composed of a representative of each of the following state officers or agencies:

- The Department of Information Resources;
- the Office of the Secretary of State;
- the Office of the Comptroller of Public Accounts;
- the Texas Department of Economic Development;
- the General Services Commission;
- the Texas Natural Resource Conservation Commission;
- the Texas Department of Insurance;
- the Public Utility Commission of Texas; and
- representatives of local governments appointed by the governor in the number determined by the governor;
- three representatives of businesses that are regulated by a state agency or local government, appointed by the governor; and
- three public members appointed by the governor.

To accomplish its mission, the Task Force elected to issue a statewide contract for development of a "common business portal" as a framework through which members of the public and persons who are regulated by a state agency or local government can do the following:

- send documents to members of the public and persons who are regulated by a state agency or local government;
- receive applications for licenses and permits;
- receive documents for filing; and
- receive required payments.

This report will give the Texas State Legislature an overview of the issues surrounding Internet access and the digital divide as related to the State portal, Texas Online. The report will discuss four main barriers to entry:

- Geographic
- Economic
- Language
- Disabilities

This report will also give a summary of existing and pending legislation and recommendations to ensure that Texas Online will be accessible to all citizens of Texas. Each of the possible solutions is prefaced by a code that directs the reader to the specific government body the recommendation most concerns:

- *LEG* – These are recommendations that require legislative action in order to be implemented.
- *STATE* – These are recommendations that can be implemented by state agency action.
- *TF* – Task Force initiatives may require setting portal policies and standards.

Introduction

The Internet is rapidly transforming the way we live, work, and play. Instead of looking in file cabinets and bookshelves for information, we are turning to the Internet to search for historical records and statistics. We are even using the Internet to keep tabs on our financial records and to book airline flights. Although the Internet has become a research and economic tool, not everyone has access to it. The gap between the technology "have" and "have-nots" is called the digital divide.

Internet accessibility and the digital divide are issues that need to be taken into consideration in the development of Texas Online because government must be accessible to all its citizens. Unlike private businesses that are able to market to and serve a specific group of people, government has a responsibility to provide service to all citizens and businesses in its jurisdiction. As Texas government moves more applications and functions online, it should not demolish the traditional "brick and mortar" institutions and means of supplying services to the public. Texas must be sensitive to the fact the many of its "customers" do not have access to the Internet.

The future economic growth of Texas depends, in part on how the State deals with the issue of making the Internet accessible to all Texans. Texas is currently experiencing a shortage of high technology workers; State government has problems training and retaining these workers due to the high salaries that are offered in the private sector. Those in the private sector are also fighting for technical workers. If the divide continues to grow, this growing demand for skilled workers will be exacerbated and the Texas economy will suffer. In order for Texas to be able to compete in the global marketplace,

today's children and tomorrow's workers must be fluent in the use of computers; this will require technical training.

Geographic Barriers

Telecommunications in Texas

In 1995, the Texas legislature passed HB 2128, which partially deregulated the telecommunications industry in Texas and required participating telecommunications companies to provide discount Internet access rates for schools, public libraries, and not-for-profit health centers for a period of six years. The legislation specifically states that priority be given to rural areas, areas designated as "under-served," and institutions with high percentages of economically disadvantaged students. Six years after applying for incentive regulation telephone companies, like Southwestern Bell, can raise access rates for schools, public libraries, and not-for-profit health centers.

If the Texas Legislature does not address the rate discount in the upcoming legislative session, the rates for schools may triple or quadruple.[1] Because the Legislature has not allocated any assistance funds for Internet access fees, the fees come out of the schools' budget. Most schools will not be able to afford the increased fees and may disconnect service.

HB 2128 also created the Telecommunications Infrastructure Fund Board (TIF). The fund was established to award $1.5 billion in grants and loans over the next ten years to public schools, colleges, libraries, and telemedicine centers in order to:

- Provide computer equipment, wiring, and infrastructure (tools, materials, training, and services) needed for distance learning and information sharing;
- Develop and deliver courses and materials by distance; and
- Train teachers, faculty, librarians, or technicians.[2]

Local Access Barriers

In some cases, the telecommunications infrastructure and long-distance costs may constitute an insurmountable entry barrier and deprive those in rural areas of affordable Internet connections. Because of the cost barrier, rural America is at risk for being left behind the technology curve. Twenty of the largest U.S. cities claim about 86% of the Internet access delivery capacity.[3] Telephone and cable companies all over the U.S. are beginning to provide affordable high-speed Internet access as part of package deals. Unfortunately, they usually serve business districts and densely populated areas. Companies concentrate on these areas because the infrastructure already exists, and in the words of a MCI executive, "if you want to stay in business, you go to the markets where you have the customers."[4] Texas currently has 14 exchanges without access to an Internet Service Provider.

While it is in companies' best interests to service those high-end profit areas, the economic development of the neglected rural areas will suffer. Small businesses in these areas believe that the Internet will bring them more customers, yet they find that they

have to pay large sums of money to install the necessary infrastructure to attain high-speed connections. These businesses may spend more on resources to compete in the new economy. Although people using 28.8Kbs and 56.6Kbs connections are able to access the Internet with minimal inconvenience, broadband access would relieve the costs of connectivity, so citizens and businesses in these rural areas will not be left behind technologically.

Possible Solutions to Geographic and Local Access Barriers

The following are possible solutions to address geographic barriers with respect to the State portal, Texas Online:

- *(LEG)* The Texas Legislature should extend the incentive regulation rates for electing telecommunications companies under House Bill 2128 (74th Legislature). These rates apply to schools, public libraries, not-for-profit health centers, and telemedicine projects. Extending the rates will help avoid an immediate cost impact to the eligible entities and will continue to provide public means to access online systems.
- *(LEG)* Offer tax incentives to companies and research and development firms that develop and implement new and innovative technologies and devices, such as wireless networks and low cost Internet computers that make accessing the Internet easy and inexpensive for those in rural areas.
- *(STATE)* Promote opportunities to leverage rural telecommunications volume to reduce costs of providing services to those communities.
- *(TF)* Develop policies and procedures for government entities when participating in TexasOnline, including abiding by DIR rules on designing state Web sites.

Economic Barriers

Economics vs. Race

The National Telecommunications and Information Association (NTIA) reported that Black and Latino households are only two-fifths as likely to have Internet access as White households.[5] Most digital divide discussions like the NTIA's lump minorities and the economically underprivileged into the same group; perhaps race and ethnic background continues to influence economic status. According to the U.S. Census Bureau, Blacks and Latinos earn an average of $14,000 less than Whites.[6] Although economics and race have been highly correlated in the digital divide discussions, new findings suggest that the gap is more about economics than race.

The Joint Center for Political and Economic Studies, a policy research organization based in Washington D.C., conducted national opinion polls in 1998 and 1999. These polls determined that the digital divide disappears when looking at Americans with incomes over $90,000.[7] While it is undeniable that minority groups as a whole lag behind Whites, access strategies must be targeted to specific sub-groups of the minority population for maximum effectiveness. For example, limited resources are better spent targeting

minorities that earn under $30,000 a year rather than minorities that earn over $70,000 a year.

PC and Internet Penetration in the Home

The falling prices of computers and the advent of free Internet service have caused a substantial increase in computer and Internet use at home. A recent public survey commissioned by the Electronic Government Task Force and conducted by the University of Texas found that a large majority of Texans (67.3%) use the computer. Of the people who use computers, 84% of them use computers at home. The survey also found that 60.1% of Texans use both the computer and the Internet.[8]

A recent survey of Colorado registered voters conducted by Hill Research Consultants found that senior citizens, the less educated, and lower income households are much less likely than other citizens to have access to the Internet. A surprising finding was that more than one-third of lower income households had Internet access at home. The poll found that 40% of households earning less than $40,000 had Internet access at home; 64% of households earning $40K to $75K have Internet access at home; and 74% of households earning $75K or more had Internet access at home.[9] Predictably, as income increases, the percentage of home Internet access also increases.

PCs in Public Areas

The NTIA study was one of the only studies to measure Internet usage outside the home. NTIA Director, Larry Irving, says that without Internet usage in schools, community centers and libraries, the gap between the information haves and have-nots would be much wider.[10] The Federal Telecommunications Act of 1996 and Texas HB 2128 were instrumental in providing much needed infrastructure and discounted telecommunications rates for schools and libraries. Because of the federal E-Rate program and the Texas Telecommunications Infrastructure Fund, low-income users are able to use the Internet at schools, community centers, and libraries for job searches and course work research.

Although national officials favor public access locations as a means of closing the divide, about half of Texans surveyed stated they would not be at all likely to use the Internet at a mall, community center, or a school. Likewise, about 38% of Texans stated that they would not be at all likely to use the Internet at a library.[11] The reasons for the lack of interest in using the Internet in public locations are not known. Although it is speculated that cultural differences may influence how computers and the Internet are perceived. For instance, the Electronic Task Force commissioned public survey found that African American teenage boys are least likely to use the computers and Internet in public places such as the library. The library may not be seen as a “safe” place to surf. Or surfing the Internet may have little or no importance to young minority males.

In testimony to the Electronic Government Task Force Strategic Issues Subcommittee, Joe Straubhaar, a professor in the Department of Radio, Television, and Film at the University of Texas at Austin, described a young Latino boy who did not see the Internet as necessary for him. This young Latino thought computers were women’s work, since his mom uses a computer at work. The boy had abstract ideas of being an architect, but

did not know that architects use computers daily. In addition, he does not know any adult men who use computers, so computers are not seen as essential to him. To compound this, Internet ads on television do not speak his language and do not appeal to him at all, which further alienates him from the technology world. Stories such as these make it apparent "if we build it" does not mean "they will come." In addition to marketing of the Internet and e-government services, extensive community development will also have to be conducted.

Affordability

Lack of affordability is an obvious barrier; if one cannot afford the bare necessities, it is unlikely that one will purchase a computer and monthly access to the Internet. The aforementioned "Computer and Internet Use in Texas" survey found that over 56% of Texans earning below $10,000 a year do not use the computer or the Internet.[12] Affordability is also a barrier on a national level. The NTIA reported that in the $15,000-$34,999 income bracket, 32.5% of White households owned a computer at home, while only 19% of Black and Latino households owned a computer at home.[13]

Those in rural areas with poor telecommunications infrastructure also face an affordability problem. Poor infrastructure can result in a lack of local Internet Service Providers (ISPs) for the area. If there are no local ISPs, Internet users will be responsible for not only access fees, but also long-distance charges. Rural residents often pay more for Internet access of lower quality than their counterparts in metropolitan regions.

Payment Methods

In most cases, one must have a credit card in order to purchase products and services online. Although, electronic funds transfer (EFT) and digital wallets serve as alternative methods of online payment, credit cards are the most accepted form of use. Although, credit cards have become one of the most accepted forms of payment, many people do not use credit cards for various reasons. Some farmers in small, agricultural communities refuse to use credit, in favor of cash or check. In these cases, they may not have an established credit record. In other cases, people may be trying to climb out of debt and choose not to use a credit card or may trying to establish their credit and are finding it difficult to obtain a credit card.

Another barrier to portions of the population is the use of EFT as the method of payment. Much of the low-income population, which includes minorities and immigrants, do not have either a credit card or a bank account. These people have chosen to use check cashing services and money orders to conduct their transactions. Using these expensive services could be a result of lack of education, a lack of free or low-fee checking accounts provided by financial institutions, trust of established institutions, or a combination of the three.

Currently, Texas Online is accepting credit cards and electronic funds transfer (EFT) payment methods. In order to make the Texas Electronic Government Framework accessible to those populations that do not have a credit card and bank account, the State needs to explore alternative methods of payment.

One feasible alternative is the pre-paid cards, much like the pre-paid telephone cards widely used today. American Express and 7-11 have teamed up to pilot a possible solution to the online payment barrier. The 7-Eleven Internet Shopping Card can be used at all online sites that accept American Express. These shopping cards can be loaded with value in $25 increments from $25 to $1000 at participating 7-Eleven stores. The cost to the consumer is $1 for every $25 of value purchased for the card and offers the privacy similar to paying in cash. A representative from 7-Eleven states that they can "offer millions of Americans, particularly those without credit history and a bank account — an easy way to make online purchases wherever the American Express Card is welcomed." Currently, Austin, Texas and Ft. Lauderdale, FL are the two national pilot locations for the 7-Eleven Internet Shopping Card. The table below provides other alternative methods of payment and a summary of each.

Charging services and licenses to a utility bill is another alternative method of payment. ECharge Phone allows Internet users to "charge" purchases to their local phone bill. Wireless telephone companies are also allowing Internet charges to be billed through them. Texas Online would have to subscribe to the billing service and citizens would have to download free software to use the service.

Possible Solutions to Economic Barriers

An array of economic barriers may impede on the success of Texas Online. The following are possible solutions that may lessen or eliminate these barriers:

- *(LEG)* Offer tax incentives to businesses that donate Internet ready computer equipment, training, or discounted/free broadband access lines to schools, libraries, and other public entities.
- *(TF)* The Task Force should collaborate with the Electronic Benefits Task Force to explore the possibility of allowing eligible recipients of the EBT Lone Star Card to use the card for financial transactions on TexasOnline.
- *(TF)* Collaborate with a private financial services firm for a credit/debit card program. This will allow those without credit cards access to the portal while serving as a government marketing mechanism for the state.
- *(TF)* Provide other methods of online payment for those online portal applications that only accept credit cards.

Language Barriers

The Latino Community

Texas has a large percentage of Latinos and will continue to in the future. According to the Texas Comptroller of Public Accounts and the 1990 U.S. Census, Latinos made up 25.5% of the Texas population. The Texas Comptroller projects that the Latino population will grow steadily to 35.6% by 2010.[14] Other statistics from the Texas State

Data Center at Texas A&M University predicts that Latinos will be the majority in Texas and comprise about 24.5% of the total U.S. population by 2050. [15]

Because of the high percentages of Latinos in Texas, Texas' connection to Spanish speaking countries, especially Mexico, is strong. Texas' number one trading partner is Mexico. Mexico receives 45.5% of all Texas exports.[16] Texas is rated as number one in exports and imports shipped to and from Mexico.[17] In South America, Texas exports to the emerging markets of Venezuela and Colombia. Because a large amount of international trade is being conducted between Texas, Mexico, and other Spanish speaking countries, Texas Online presents a prime opportunity to be a gateway site to Latin America. The site could serve as a one-stop-shop for Latin American businesses wanting to gain access to the Texas market. Florida has taken this approach and has established www.bienvenidosalaflorida.com the site provides government forms in Spanish, Portuguese, and English.

Growing Asian Population

The Latino population is not the only growing minority population in Texas. According to the Census Bureau, Asians comprised 2.4 percent of the Texas population in 1995. This figure is expected to grow to 3.9 percent by 2025.[18] Although percent of the population appears to be a small number, the concentration of Asian populations may warrant the translation of government documents, both online and offline. Currently, street signs are written in Chinese as well as English in at least one area of Houston.[19]

Possible Solutions to Language Barriers

- *(TF)* Explore the opportunity to use the portal as a gateway to Latin America. Texans can use the portal to access necessary business information, while Latin Americans can use it to access Texas business regulations and tourism information.
- *(TF)* Require participating TexasOnline government entities to be sensitive to special language, visual appearance, and navigational demands of their customers and to accommodate citizens' needs as they arise.

Disability Barriers

The Internet has the great potential of increasing the independence of those who live with a disability, but they have the lowest rates of Internet use. The low rates of use are in part caused by the design of most Web sites. Unless Web sites are designed in an accessible format, the disabled population will be locked out of the World Wide Web, e-commerce, and access to government information as the Internet moves from a text-based format to a graphical format with audio and video enhancements. While audio and video would be accessible to the visual and hearing impaired respectively, problems arise when only one medium of communication is used.

American Disabilities Act of 1990

Opening access to the disabled is not just a good idea, it is the law. The American Disabilities Act of 1990 (ADA) made sweeping changes in the areas of employment,

public services, and public accommodations that made American society more accessible to the disabled. This accessibility was extended to the Internet in 1996, when the Justice Department ruled that state and local governments and the business sector were required

> *"to provide effective communication, regardless of whether they generally communicate through print media, audio media, or computerized media such as the Internet. Covered entities that use the Internet for communications . . . must be prepared to offer those communications through accessible means as well."*[20]

On November 16, 1999, the Access Board proposed new guidelines for facilities in the private and public sectors under the Americans with Disabilities Act. The Access Board develops and maintains guidelines that that serve as the basis for ADA standards in federal agencies. The new guidelines were made available for public comment until May 15, 2000 and provide technical criteria for communication devices and features. Although these guidelines have yet to be adopted, an assessment of the final rules will need to be conducted as to how it affects Texas Online.

Accessibility for the disabled can be accomplished by the creation of adaptive technologies and by developing Web pages accessible by these technologies.

Web Friendly Pages

The basic rule for providing access to persons with disabilities is to provide HTML code that can be read by the existing access technologies. One solution is to provide text-only versions of the entire site, but this should be done only as a last resort. A less-labor intensive and practical solution is to create one site for all. The following are some strategies in creating a Web friendly page:

- Provide a text description or name to all graphics, graphical links, and pictures;
- Avoid using color-coding or graphics (like buttons or an image map) as the sole means of expressing navigational information;
- Keep the use of colors and backgrounds to a minimum to provide the highest contrast;
- Have descriptive links, rather than simply "click here";
- Keep the page organization simple and consistent throughout the entire Web site;
- Transcribe audio and video clips or providing descriptions of them;
- Summarize the content of graphs and charts;
- Avoid the use of frames and PDF formatting or supplement with HTML; and
- Install and make users aware of access keys. Access keys are a feature of HTML 4, which allows Web designers to assign short cut keys for various functions on a Web page. Access keys often allow for faster navigation around a page. However, current browsers do not tell a user what access keys, if any, are available, so it is up to each Web site to inform users of access keys installed.

Potential of Voice

Another means of making Texas Online accessible to the geographically and economically disadvantaged, and the disabled is to institute a parallel, but equally informational voice portal. Voice portals, otherwise known as v-commerce and voice Web, work in conjunction with Interactive Voice Response (IVR) systems to make it possible for anyone with a telephone to access the Internet information. Interactive Voice Response systems allow users to access information through the telephone by responding to a set list of voice prompts via the keypad; these systems are widely used by banks, credit card companies, airlines, hotels, and other institutions.

Voice portal companies like Tellme, Quack.com, or BeVocal allow users to access voice activated Web-like services such as stock quotes, traffic information, weather, and movie ticket purchases through a 1-800 number. Although this technology is still in its infancy, Texas Online can eventually incorporate this technology to provide another outlet in accessing state government information and services. Those disadvantaged populations, rural, low-income, and the disabled would be able to apply for services and licenses and pay fees with a voice portal.

Possible Solutions to Disability Barriers

Making Texas Online accessible to the disabled is difficult, but would ensure that no segment of the general population is excluded. The following are suggestions in making Texas Online more accessible to those with disabilities:

- *(TF)* Develop policies and procedures for government entities when participating in the TexasOnline, including abiding by DIR rules on designing state Web sites (Texas Administrative Code 201.12).
    - *(TF)* Include an instructional page for users with disabilities through a link on the home page. This page can be called "Accessibility Assistance." Include a list of access keys that users can utilize to navigate the site on this page.
    - *(TF)* Provide contact information in the case that users encounter barriers to accessing any or the entire portal.
    - *(TF)* Have participating TexasOnline applications tested by a variety of Texans with and without disabilities to ensure that all are usable and accessible.
    - *(TF)* Direct government entities participating in the portal to online disability accessibility testing programs.
- *(TF)* Establish an Interactive Voice Response system (IVR) or alternate technical solutions for those members of the population who are not able to access TexasOnline in the traditional fashion.

Table II: Existing Legislation/Initiatives

Legislation Name	Summary
Tex-An 2000	Tex-An is an effort to reduce state Internet access costs by buying bulk telecommunications services for the state. State agencies and universities are required by law to use TEX-AN services for their inter-city telecommunications requirements; local governments and libraries are encouraged to participate.
Texas HB 2128 (1995)	• Gave telecommunications companies the choice of incentive deregulation in exchange for a rate freeze on monthly charges. • Required participating companies to provide discount Internet access rates for schools, public libraries, and not-for-profit health centers for a period of six years.
Telecommunications Infrastructure Fund Board (TIF)	A provision of Texas HB 2128 that provides $1.5 billion in grants and loans over the next ten years to public schools, colleges, libraries, and telemedicine centers for computer equipment, infrastructure, distance learning courses, and training for faculty, librarians and technicians.
Federal Telecommunications Act of 1996	• Opened the telecommunications market, allowing any company to compete in any market against any other company. • Established E-Rate (see below)
E-Rate	A federal initiative under the Telecom Act of 1996 that provides discounts on telecommunications and Internet technologies to schools, colleges, and libraries across the country.
American Disabilities Act of 1990	Made American society more accessible to the disabled in the areas of employment, public services and public accommodations. Accessibility provisions were extended to Internet communications in 1996.
Rehabilitation Act of 1998 Section 508	Requires the Attorney General to report to the President on accessibility of federal electronic and information technology to people with disabilities.

Appendix A: List of Disability Accessibility Guidelines

These are only a few suggestions that will make Texas Online more accessible to our disabled citizens. The following is a list of complete guidelines, some of which include HTML techniques:

- Texas Administrative Code Rule 201.12: State Web Sites
  These guidelines include provisions for disabled access of state agency Web sites.
- W3C Web Content Accessibility Guidelines 1.0
  http://www.w3.org/TR/WCAG
  This document includes 14 guidelines and several techniques under each guideline to make a Web site accessible to people with disabilities.
- City of San Jose World Wide Web Page Disability Access Design Standards
  http://www.ci.san-jose.ca.us/oaacc/disacces.html
  San Jose was the first U.S. city to develop minimum standards in the anticipation of the U.S. Justice Department's ruling that the ADA applies to the Internet.
- IBM's Checklist for Web Accessibility
  http://www-3.ibm.com/able/accessWeb.html
  The tips and guidelines are based on W3C Web Accessibility Initiative. IBM has included with each guideline the rationale behind doing it, the HTML code to achieve it, and tests to conduct to ensure that the code was executed properly.
- Optimizing Adobe PDF Files for Accessibility White Paper
  http://access.adobe.com/white-paper.html
  This document provides information on how to make Adobe PDF files accessible for the visually disabled, techniques for optimizing Adobe PDF files for accessibility, and future plans to enhance accessibility of Adobe Acrobat software and Adobe PDF.
- Designing Web Usability by Jakob Nielsen
  http://www.useit.com

Glossary

Brick and Mortar – Describes a traditional company with non-Web channels as the sales outlet for its products of services.[1]

Broadband - Broadband is currently the most sought after transmission connection, because it allows the transmission of voice, graphics, and large text files without much difficulty. Broadband service is a type of telecommunications technology that provides multiple channels of data via one communications medium. The FCC classifies broadband service as one that sends and receives data at four times the speed of a 56.6 kilobits-per-second telephone modem.[21] The following is the types of broadband services that exist:

> *Cable* **–** Speeds range up to 10 megabits per second and is relatively inexpensive to operate. One disadvantage, however, is that systems need to be upgraded, which involves a year of replacing copper lines with fiber-optic lines in most communities.
> *Digital Subscriber Lines (DSL)* – Provides computer users high-speed access over a telephone line. The downside is that the user must be within 12,000 feet of a telecommunication provider's central office.
> *Wireless cable and satellite* – This technology is still relatively immature, but provides the best hope to rural and mobile Internet customers, as it does not require building or replacing infrastructure.[22]

Digital wallet– Encryption software that works like a physical wallet during electronic commerce transactions. A wallet can hold a user's payment information, a digital certificate to identify the user, and shipping information to speed transactions. The consumer benefits because his or her information is encrypted against piracy and because some wallets will automatically input shipping information at the merchant's site and will give the consumer the option of paying by digital cash or check. Merchants benefit by receiving protection against fraud.[2]

Electronic Funds Transfer - Electronic Funds Transfer (EFT) 99 is the Federal Government's ongoing initiative to convert most of its nearly 1 billion annual payments from paper check to EFT by January 1999. EFT, the transfer of funds by means other than paper instruments, includes Direct Deposit, Fedwire, automated teller machine (ATM), point-of-sale, and credit card transactions. Direct Deposit is the most widely used EFT program.[3]

HTML code – Short for Hypertext Markup Language, the authoring language used to create documents on the World Wide Web. HTML defines the structure and layout of a Web document by using a variety of tags and attributes.[4]

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[1] Harris, K. "E-Business Glossary: Version 1.0." COM-09-3988. The Gartner Group. 8 October 1999.
[2] http://webopedia.internet.com/TERM/d/digital_wallet.html
[3] http://www.fms.treas.gov/eft/GENERAL.HTML#Introduction
[4] http://webopedia.internet.com/TERM/H/HTML.html

Interactive Voice Response (IVR) – The generation of voice output by computer. It provides pre-recorded information either with or without selection by the caller. Interactive voice response allows interactive manipulation of a database.[5]

Interface - An interface is a set of commands or menus through which a user communicates with a program.[6]

Internet Service Provider (ISP) - A company that provides individuals and other companies access to the Internet and other related services such as Web site building and hosting. An ISP has the equipment and the telecommunication line access required to have points-of-presence on the Internet for the geographic area served. The larger ISPs have their own high-speed leased lines so that they are less dependent on the telecommunication providers and can provide better service to their customers. [7]

PDF formatting – PDF (Portable Document Format) is a file format that has captured all the elements of a printed document as an electronic image that you can view, navigate, print, or forward to someone else. PDF files are created using Adobe Acrobat, Acrobat Capture, or similar products. To view and use the files, you need the free Acrobat Reader, which you can easily download. Once you have downloaded the Reader, it will start automatically whenever you want to look at a PDF file.[8]

Portal - A high traffic, broadly appealing Web site with a wide range of content, services and vendor links. It acts as a value-added middleman by selecting the content sources and assembling them together in a simple-to-navigate and customize interface for presentation to the end user. Portals typically include services such as e-mail, community and chat.[9]

T-1 Line - The T-carrier system, introduced by the Bell System in the U.S. in the 1960s, was the first successful system that supported digitized voice transmission. The original transmission rate (1.544 Mbps) in the T-1 line is in common use today in Internet service provider (ISP) connections to the Internet.[10]

Voice portal – Services that provide voice-activated Web-like services including stock quotes, traffic information, weather or movie tickets to people calling a 1-800 number.[11]

Web browser – A program used to view documents on the World Wide Web.[12]

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[7] http://www.whatis.com/
[8] http://www.whatis.com/
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