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Affordable Internet Access for All Americans

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I. THE VALUE AND CURRENT STATE OF INTERNET ACCESS

A. Introduction

{1} There are times in our history where new technologies burst onto the scene and have a major impact on our lives. We live in one such time. The Internet is revolutionizing how people and organizations interact with each other. Examples of these paradigm changes include how students are now being educated online with minimal face time with their teachers; [1] governments are being forced to adapt to the new circumstance where once formidable geographical boundaries between countries are being lowered by information technology; [2] and the military is realizing that it needs to harness this new technology [3] or be defeated by it. [4]

{2} Section I of this paper discusses why computer literacy and Internet access will be major elements of future success for our society. The reasons for this are, one, informed consumers stimulate competition and improve our economy; two, our democratic system of government requires active, informed citizens; and three, the Internet is making the world a much smaller place where people and their governments base more of their opinions on current, independent information.

{3} Because of this, we now have the important policy goal of ensuring that affordable Internet access is available to all Americans. Although there has been some progress in this area, approximately half of all Americans today do not have, or cannot afford, to be part of this revolution. Should we allow large numbers of our fellow Americans to fall behind and thus create a new gap in our already fractious society? A gap that the well-known information technology author Don Tapscott calls a "digital divide" [5] and Tom Steinert-Threlkeld of Inter@ctive Week describes this way:

If you want a double take, it's always good to quote an Internet growth statistic or two. Who'd a think five years ago, for instance, that 78 million adult Americans would now have access to the Internet at home? . . . Now, let's flip the coin a bit. On one side, you see that 50 percent of U.S. households have a personal computer. Modems and some form of Internet access are almost givens, now. On the other side, though, is the equally daunting statistic that 50 percent of U.S. households do not have a PC. . . . What's worse is the rather grim bottom line of this side of the coin. Those who need PCs the most are the people who can least afford them. [6]

{4} This important new technology has a comparable history to broadcast radio where a previously unregulated technology matured into a regulated industry in 1912. There, the real distress signals from the *Titanic* were disregarded because of a growing confusion from, and mistrust of, amateur radio operators. Had the radio frequencies been regulated, the request for assistance may have made a difference. The result was the Radio Act of 1912 that attempted to create organization and efficiencies in radio broadcasting. [7] Similarly, because of its importance, the government now has strong reasons to regulate the affordability of Internet access.

{5} Section II discusses how the government should take a strong leadership role and ensure that all Americans benefit from the Internet. The goal of universally available, affordable Internet access can be accomplished with a three-fold regulatory framework that includes: one, using demand aggregation, price subsidization, and tax incentives to encourage providers of Internet access products and services to set

affordable prices; two, compelling a few large providers to offer affordable pricing and universal access; and three, having the government itself providing some access in areas that would otherwise go without any service.[8] Section III presents the conclusion that summarizes the main points of this article and discusses their respective impacts.

{6}It is emphasized that the goal of this article is to articulate how the government can help reduce the cost of Internet access. Thus, the contents discuss the broader questions of how many different governmental measures could interact with the free market in order to further affordable access. It is beyond the scope of this article to address the narrower question of specific changes to particular organizations such as the Federal Communications Commission ("FCC"). It is an open question whether the FCC should continue regulating telecommunications as particular services bundled with particular pipes, or whether the FCC should regulate the market much like the electric utility industry. In this latter scenario, the electricity generation, service, and transportation to consumers are independently regulated with different schemes. Applying this to the information industry, any and all unbundled information and telecommunication services could be carried by the most technically and economically efficient pipe, without being forced into artificially legislated pipes.

B. Characteristics of Universally Available, Affordable Internet Access

1. Why Internet Access is Important

{7}An economic perspective demonstrates the importance of Internet access. Informed consumers stimulate competition and improve our economy. Traditionally, a potential car buyer would have to spend endless hours shopping around for a particular make and model in their price range. The buyer would approximate the fair market price of the car by patching together information from various anecdotal sources. However, the buyer may never know whether or not the price paid for a particular car was fair.

{8}This kind of information is now readily available on the Internet from "N.A.D.A. blue book" sites. These are information resource locations that list recommended prices for automobiles based on characteristics such as make, model, mileage, condition, and features.[9] These blue books were available in the past to organizations such as insurance companies, but not commonly available to the public. Now, a potential buyer can determine a reasonable price range for a particular car before approaching a seller. Armed with this information, an educated consumer can negotiate the best price possible for the car in question. Because this forces added competition into the economy, this information should be available to all Americans, particularly those in lower economic levels who can least afford expensive transportation.

{9}From a democratic perspective, our system of government requires the participation of active, informed citizens. This is one reason why Canada is bringing the Internet into its classrooms.[10] Our own presidents, past and present, have recognized the need for an informed citizenry. For example, in 1822, President James Madison stated, "knowledge will forever govern ignorance: and a people who mean to be their own governors must arm themselves with the power which knowledge gives,"[11] and President Bill Clinton in 1997 said, "[a]s the Internet becomes our new town square, a computer in every home, a teacher of all subjects, a connection to all cultures, this will no longer be a dream but a necessity. And over the next decade, that must be our goal." [12]

{10}These quotes point out that for our system of government to work, we require that the citizenry be informed. Informed people have the power to participate in the world around them. If accused in court, they can effectively defend themselves, or at least, make informed decisions about their defense. If involved with political action, they can work within the system more effectively. At a minimum, when casting ballots, our citizens can make informed decisions. Being so informed may even motivate a higher percentage of people to

actually get out and vote[13] The free flow of information is sometimes described as the "marketplace of ideas." This expression is derived from many First Amendment cases explaining why a free people need access to information.[14] This information should be available to all Americans.

{11} Finally, from a geopolitical perspective, the Internet is making the world a much smaller place where people and their governments base more of their opinions and conduct on current information from independent sources. No longer can Americans live exclusively within our continental borders without any knowledge of the rest of the world. From the economic crisis in Russia to the conflict in Kosovo,[15] the Internet is providing the means of communication to people who would otherwise be silenced by repressive governments. Communication via the Internet survives even after dictatorial governments destroy traditional means of communication, such as broadcast radio. For example, *Radio B92*, the Kosovo radio station that was shut down by the Serbian government, has continued to broadcast via the Internet.[16] Also, after the Serbian government deported all western journalists, current news reports were still accessible via the Internet from various individuals, and even a monastery.[17]

{12} These global forces are elevating the Internet to a place of utmost importance in the new world order. The "globalizing" of people[18] and their governments will force the reliance on current information to higher levels. Governments will find it harder to bamboozle their citizens with misleading information, since those same people will be able to access independent information from the Internet. These examples demonstrate the power that comes from the Internet and why it should be available to all Americans.

2. Why Internet Access Should be Universally Available

{13} Because of the importance of Internet access, it must be universally available to all Americans, regardless of the geographic location, urban development, or economic condition of their community. In particular, rural areas and poor urban inner cities that are now the least connected to the Internet. The Telecommunications Act of 1996 recognizes that the need for universal access is fairly widespread, as one of its primary goals is to achieve nationwide universal telephone service. One can argue that the chosen mechanism of relying heavily on competition may be flawed, but at least Congress recognized that all Americans require service.[19] This requirement arises from telephone service having become an important modern utility on which people sometimes even rely for their very lives. An example of where new technology supplies a long-felt, but unmet need is the 911 Emergency service. There has always been a need to quickly alert fire and police emergency response personal to a particular location. The new 911 telephone service allows for this quick response.[20]

{14} Similarly, the Internet is a new technology that people are increasingly relying on for important aspects of their lives. Some of these aspects were discussed in the previous section. Other aspects include the important economic requirement of information. As a larger segment of our economy moves into the information services industry, people will be relying on Internet access for their livelihoods. Therefore, access to the Internet will be a critical factor in our future success.[21] Because of the importance of Internet access, it should be universally available to all Americans.

3. Why Universal Internet Access Should be Affordable

{15} The benefit of universally available Internet access would be greatly reduced if that access were not also affordable. Access that the consumer cannot afford is basically no access at all. However, specifying what an "affordable" price should be is not easy, since it means different things to different people. One way to arrive at an affordable price is to compare Internet access to other commonly available products and services. In particular, television and television service can be used as a benchmark, since it is a common purchase involving both a modern product and a service used with that product. Today, an average television can be bought for under \$300,[22] and basic cable television service is available for less than \$30 per month.[23]

{16}A similar pricing structure regarding Internet access should be available to all Americans. Although it is noted that Internet service providers already do have competitive rates of less than \$30 per month, the cost of buying a personal computer ("PC") to capitalize on that service is not even close to the low hundred-dollar range. Brand new general purpose computers are priced starting around \$1,500.[24] These general purpose computers have features such as large storage that allows them to function effectively, whether or not they are connected to the Internet. This fairly high initial entry cost, however, is a major inhibitor to people of modest income who want to access the Internet.

{17}An option to high cost PC's is the "Network Computer" ("NC"), which is a slimmed down PC that includes only the bare essentials needed to access the Internet. This is possible since a consumer's PC is only a "window" to connect over the Internet to remote computers running the websites. However, since the NC is also slimmed down, it does not have features like large storage that allow it to function effectively when not connected to the network. If the network connection is lost, the NC has limited value. These NC's are priced starting around \$800.[25] Although this amount is still more than an ordinary television, it is a step in the right direction.

4. Why Universal Internet Access Should Include Only Basic Services

{18}Although the Internet is an important utility that offers many services, not all of these services need to be made available to all Americans. This is analogous to the U.S. Postal Service that provides basic service to all Americans at an inexpensive price. For additional or special services such as express delivery, there are added costs and competition from private firms such as Federal Express or UPS. For example, one can send a first class letter anywhere in the United States for the affordable price of only thirty-three cents.[26] However, if overnight service is required from Massachusetts to California, there are a number of providers that offer this service at prices of ten to twenty dollars.[27]

{19}Internet access should be provided in a similar manner. Basic Internet service could include browsing the Internet and sending electronic mail (e-mail). Advanced services such as application hosting[28] should not be included in a basic Internet access service package; rather, they should be available at free market prices.

C. How Americans Access the Internet Today

1. Consumers Buy Individual Components

{20}A common method to access the Internet is for Americans to buy the associated products and services directly. This includes the hardware, such as PC, a modem used to connect the computer to the telephone line, [29] and software used to operate the PC. As discussed above, the PC costs approximately \$1,500. The essential software needed for the Internet is an "Internet browser," which provides a user-friendly interface to the Internet. There are many browsers on the market today, most of which are free.[30]

{21}The other major element is the Internet access service itself, which can be described as the "pipe" that connects the computer to the Internet. This service is provided by companies known as Internet Service Providers ("ISP's"). Although the majority of consumers dial into their ISP over phone lines, consumers can also connect to their ISP with a cable modem that uses existing cable television lines. This type of cable connection can be up to fifty times faster than traditional dial up connectivity. [31] The ISP market is highly competitive, and as discussed earlier, a typical ISP service costs less than \$30 per month.[32] Although the participants in the ISP market are of varied sizes, recent trends indicate a consolidation of the many ISP's into a smaller number of larger, regional ISP's.[33]

2. Consumers Buy Packaged Deals on Credit

{22}An interesting recent trend in Internet access is for service providers to group all the associated equipment and services into one package. This package includes the PC, modem, browser, and ISP service. The customer then contracts with the service provider to gain the packaged access at a set price per month. Although it appears like a service contract, the consumer is actually leasing the package. The services provider is only coordinating a credit line for the consumer. The package is purchased on this credit with the customer paying back a set amount per month over a number of years. This service is being offered, for example, by Talk America Internet for approximately \$40 per month.[34]

3. Consumers Obtain "Free" Access

{23}A third way Americans access the Internet, and one that has gained a fair bit of attention recently, is that a consumer can receive a free PC with free Internet access. The free PC and free Internet access are provided in exchange for the following: the consumer's personal and market demographic data; acceptance of continuous advertising on screen; permission to track, record, and disseminate to participating advertisers the Internet activity of the consumer; and an agreement that the consumer will participate in a certain minimum number of hours per month on the Internet. This allows the service provider to gain valuable demographic information about Internet consumers. In one combination, Free-PC[35] provides free hardware and software and NetZero,[36] an ISP, provides the free Internet access. A similar service for e-mail is offered by Hotmail; however, Hotmail does not require its users to provide personal information or to give up their privacy in order to utilize the free e-mail.[37] This free access is changing the landscape of Internet access. In the future, ISP's may have trouble charging even the \$30 per month rate. Associated Press writer Bruce Meyerson says:

It seems to be an Internet fact of life: No one roams the Web for free. But the world wide web is still too new to presume that anything is set in stone, and monthly dial-up fees could become another Internet dinosaur if others keep giving away what America Online - the biggest Internet provider - is trying to sell.[38]

{24}The downside to this type of service is the risk that the provider will market this service to only those in demographics that are likely to purchase from the Internet. This was the issue was raised when Free-PC made its initial offer of 10,000 PC's. There was an overwhelming response to the offer, far in excess of the number of free PC's that were available. Commentators suggested Free-PC would cater only to wealthy consumers with good Internet spending habits, rather than to the people in the lower part of the income distribution. Free-PC assured the public, however, that the free service will be distributed evenly across the entire spectrum of income levels.[39]

{25}One other noteworthy development is how non-Internet businesses are using Internet service to entice additional consumers. The business proposition is that the added commerce from online shopping also increases revenue at the "bricks and mortar" retail offices and outweighs the cost of providing this free service. For example, Dixons,[40] a retailer of consumer electronics in the United Kingdom, started Freeserve[41] to provide free Internet access to encourage consumers to shop online. Although this idea may seem to be suitable for only electronic products, it is also being implemented by traditionally non-technical businesses such as grocery stores.[42] Tesco,[43] a United Kingdom retail grocery store operator has started a free Internet access service,[44] and Streamline,[45] a U.S. grocery store retailer catering to busy people, is also using the Internet to develop their business.

{26}A similar event also occurs in when Internet search engines offer free ISP-like access. That is, the search engine's main business objective is to have as many users access their website as possible. This objective is furthered by offering free access in exchange for viewing advertisements, which results in having the search engine be the first thing a user sees when connected to the Internet. AltaVista, a search engine, offers such a service.[46] A list of providers of goods and services include: Free computers in exchange for personal information: Free- PC; [47]; Free Internet Service: Net Zero [48] ; Free E-mail: HotMail[49]; Packaged

{27} All of these approaches have some amount of merit and are good examples of how to provide affordable Internet access. However, the combined quantity of users amounts to only tens of thousands of people. Even if this number was rounded up to one hundred thousand or a million, it would still have only a very small impact on the approximately 75,000,000 Americans who do not yet have Internet access. In other words, it is a good start, but it is not enough.

D. Why Internet Access Needs to Change

{28} This sections deals with current problems with the Internet, from both a regulatory and a consumer's perspective.

1. Problems with Current Regulations

{29} One recurring theme with Internet regulations is that a "top-down," centralized model cannot effectively manage the Internet, which is a system based on distributing autonomy.[51] Basic Internet procedures and protocols[52] did not evolve with firm guidance, but rather with a "rough consensus and working code." [53] This was accomplished with public reviews know as Requests for Comments ("RFC"), coordinated by The Internet Engineering Task Force[54] This decentralized development is an example of self-regulation. Proponents of self-regulation point to its strength of allowing individuals to develop in areas, guided only by their own intuition. They argue that a "top-down" approach channels and binds development; in effect, limiting the ultimate quality and quantity of the development.[55]

{30} Another problem with current Internet regulation is that it is based on an "inside-out" approach. That is, Congress and regulators focus on the new technologies, rather than on the consumer effects of these new technologies. A good example of this point can be seen from U.S. Senator Conrad Burns' *Digital Dozen*, which is a new set of Congressional bills targeted at the technology of telecommunication and the Internet. [56] These bills regulate a wide area of technologies, such as high-speed ADSL, cable modem, encryption, satellites, digital signatures, e-mail "spamming," wireless enhanced 911, DBS and network signals, and low-power television[57] With so many different technical issues covered in just this one initiative, all of which experience rapid development and change, it is not reasonable to expect that any government can hope to bring together all these loose ends into one neat policy.[58]

{31} Commentators have also pointed to the shortcomings of the Telecommunications Act of 1996.[59] One of its main goals was to foster lower prices by encouraging competition among telecommunications providers. However, in the years since its adoption, very little competition has developed in any of the original target markets.[60] One particular problem with the act is that it did not seem to foresee the use of the Internet to make long distance telephone calls. This is know as "IP Telephony" and is a major concern of traditional long distance telephone companies. This is because consumers can connect to the Internet via their ISP by calling a local telephone number. Once on the Internet, they circumvent traditional carriers by making long distance telephone calls to other people or computers, over the Internet, who also have IP Telephony technology. The consumer is effectively making a long distance phone call, but only paying for a local call. Thus, the long distance telephone companies loose this revenue.[61]

{32} A related problem is the issue of reciprocal compensation fees. A person connects to the Internet by first dialing up an ISP with a computer. This initial phone call is placed with the local telephone company that is typically a Regional Bell Operating Company ("RBOC"),[62] such as Bell Atlantic. Since the ISP is on the destination end of the call, the RBOC must hand the call off to the phone company that provides service to the ISP. The telephone service to ISP's is increasingly being provided by smaller telephone service providers known as Competitive Local Exchange Carriers ("CLEC's").

{33}The Telecommunication Act specifies that when a long-distance carrier, such as an RBOC hands off a call to another long-distance carrier, there is no charge. However, when a long-distance carrier transfers a call to a local phone company such as a CLEC, the long-distance carrier must pay that local carrier a compensation fee for terminating the call. The idea here is that while the call is transmitted along like systems, such as long-long distance, the transfer is accomplished with only telecommunication equipment and without any human involvement. Yet, when a call is transmitted between dissimilar systems such as long-short distance, the transfer requires human involvement to either dial the number or to pick up the phone. These human injected delays, along with the additional types of switching equipment, add to the cost of providing long-to-local switching service. Since, at the time of drafting the Act, it was expected that the calls into and out of a typical phone company would roughly balance out, these fees are known as "reciprocal compensation fees."[\[63\]](#)

{34}However, since many ISP calls are inbound to the CLEC's, the majority of the reciprocal compensation fees are being paid by the RBOC's to the CLEC's.[\[64\]](#) This one-sided arrangement became acute a couple years ago when the ISP/CLEC combination became popular and amounted to substantial portions of the CLEC's annual revenue. Because of this, RBOC's have become increasingly dissatisfied with the arrangement.[\[65\]](#)

{35}The FCC, however, says that things are not as bad as some would have you believe. In accordance with section 706 of the Telecommunications Act of 1996,[\[66\]](#) the FCC is required to evaluate whether high-speed Internet access is being made available to all Americans. The FCC did evaluate the issue and issued a report that found Americans are adopting high-speed Internet access faster than they had adopted television or cellular phone services. These results were found by comparing the numbers of users at similar points in the technologies deployment. Because of this, the FCC believes that Americans are gaining high-speed Internet access in a "reasonable and timely fashion."[\[67\]](#)

{36}Not everyone agrees with the FCC however, and the Commission is accused of being responsible for the failure of the Telecommunication Act to promote increased competition between telephone companies.[\[68\]](#) Another problem is that the Internet does not fit well into any of the existing FCC departments of common carrier, wireless, mass media, cable, and international. Since there is no "Internet department," other ill-suited departments must address Internet related activities.[\[69\]](#)

2. Problems From a Consumer's Perspective

{37}Outdated or ineffectual regulations might be tolerable if consumers were not being severely impacted; however, this is not the case. One major problem is the current trend towards creating a new division in our society based on the "haves" and "have not's" of information. This is what Don Tapscott, the well-known author on technology's impact, terms a "digital divide."[\[70\]](#) At the moment, a disproportionate number of people with Internet access come from the middle- to upper-income groups. This divide is magnified by its impact on subsequent generations even more than on current generations. Tapscott points out that to be successful in the future, information technology ("IT") proficiency needs to be introduced to our children now. This is because IT will permeate many aspects of life, including social interaction, cognitive skills, leisure activities, employment, and family life. Because of the pervasiveness of IT, a child who does not have adequate Internet access today, will be the handicapped citizen of tomorrow.

{38}In regards to privacy and self-regulation, the news media is replete with articles about violations of individual privacy. Self regulation may be good for developing better technologies, but it does little to protect individuals. The problem has become so acute that it prompted a presidential report on how to ensure online privacy.[\[71\]](#) In particular, the report will focus on the risk to children's privacy, and what can be done to protect them.

{39} Another problem from a consumer's perspective is the type and cost of connecting the Internet to their homes. That is, what cables will connect from the computer, out of the building, and on to the service provider? Additionally, the question arises as to who shall provide these cables. This is generally known as the "last mile." Since the best technology does not always win the day, consumers have an interest in choosing a service provider with the service that best matches their own requirements. This is becoming more important by the day, as the number of high bandwidth Internet services, such as real time audio, video, and high-resolution graphics continue to increase. The FCC's "hands-off" approach on the last mile is evident from it not even being mentioned in a recent FCC status report.^[72] It seems that competition alone may decide what type of service is provided, and unfortunately, this may lead to one-third of residential customers lacking high speed Internet access.^[73]

E. General Issues Relating to Regulating the Internet

1. Regulations Not Anarchy

{40} One initial question that must be resolved is whether the Internet should be regulated at all, or should it remain mostly self-regulated? Opponents of regulating the Internet argue that there are too many problems with Internet regulations. They point to the example of how the "indecent" content-based sections of the Communications Decency Act^[74] were invalidated in *Reno v. ACLU*,^[75] due to its violation of the First Amendment. Critics of regulation also point to the "boundary-less nature" of the Internet that makes it difficult for national governments to regulate.

{41} However, the argument furthered here is that the Internet can be effectively regulated. Supporters of regulating the Internet argue that self-regulation is simply another word for anarchy.^[76] The issue of whether national regulations have an international impact is not new. On the contrary, there are many national laws and policies that cross borders, including, for example, our income tax laws that require citizens to report any income that was earned overseas, even if it was already taxed by a foreign government^[77] Extra-territorial consequences do not necessarily invalidate a national law.

2. Internet Regulatory Models

{42} There are four primary models that can be applied to the Internet. The first and simplest is the national approach where countries apply their own laws to these new technical situations. This worked fine in the past for communications technology, such as radio and television, since these broadcast technologies had functional ranges within the territorial boundaries of the country itself.^[78] However, this nationalist model may not be best-suited for the Internet due to the Internet's inherently border-disregarding nature.^[79]

{43} The second model that can be applied to the Internet is the multi-national approach, which involves agreements between countries. Such an agreement is the General Agreement on Tariffs, and Trade ("GATT"), with its recent 1993 round having been negotiated in Uruguay. The portion of GATT that dealt with intellectual property is the section known as the Trade Related Aspects of Intellectual Property ("TRIPS").^[80] In general, these multinational agreements are beneficial, since they are typically extensive documents that govern many details on how countries trade with one another. In regards to the Internet specifically though, these documents only relate to relatively well-known issues, such as tangible goods or intellectual property. Since the Internet is so new, effective multinational agreements may be many years away.^[81]

{44} The third model that can be applied to the Internet is the international organization approach where an organization governs the conduct of its member state directly. Such an organization is the World Trade Organization ("WTO") that was also a product of the 1993 Uruguay round of GATT negotiations.^[82] As above in the second model, this model works well when all parties have a firm understanding of the items in trade. But again, since the Internet is so new, effective international organizations may also be many years

away.[83]

{45}The fourth and final model that can be applied to the Internet is the de facto approach. This is much less organized than any of the previous three and is characterized by little or no governmental involvement; rules are developed in a majority rules fashion. That is, the process that becomes the most popular, becomes the standard for all to follow. This is what the Internet has been generally using up to now. Proponents of de facto rules argue that the "cyberspace participants are much better positioned than national regulators to design comprehensive legal rules." [84]

{46}However, just because a rule is bubbled-up by popularity, it does not mean that the rule is the simplest option. On the contrary, these de facto rules can be just as complicated as rules developed by organizations. [85] For example, the rules governing what particular Internet address will be used by a computer is known as an IP address. [86] IP addresses are based on the division of thirty-two ones and zeros, with this division performed in a multi-tiered class structure. [87]

{47}Furthermore, a de facto form of regulation seems to have worked well enough in general for developing improved technologies. However, it is not well-suited for providing uniformity. For example, without a strong central power driving uniformity, individuals can have widely varying results. These uneven results become important when constitutional rights are being violated, such as the freedom of speech. In these cases, uniform adherence to the minimum constitutional requirements overrides concerns of developmental freedoms. [88] Therefore, where there is a strong governmental interest such as Internet access, strong, central, uniform regulation is required. [89] For other issues that do not have a particularly strong governmental interest, there is not such a strong reason for uniformity. [90]

{48}One final problem with de facto regulations, and possibly the largest, is that when people are not allowed to participate in the normal rulemaking process, accountability is lost. That is, if no single person or group is identifiable as the rulemakers, people may lose faith in the rules, and thus, those rules are not likely to be trusted or followed. [91]

{49}In review, it seems that none of these four models is a perfect fit to be used to regulate the Internet. Therefore, the regulatory framework discussed below will be a combination of these models, in particular the national and de facto models.

II. A THREE-FOLD FRAMEWORK TO FURTHER THE POLICY GOAL OF UNIVERSALLY-AVAILABLE, AFFORDABLE INTERNET ACCESS

{50}This section recommends a regulatory framework that should be used to improve Internet access for all Americans. The components of this framework are, one, for the government to use incentives to encourage affordable prices; two, for the government to compel affordable prices and universal access in limited situations; and three, for the government itself to provide some access in public libraries.

{51}These three different components represent increasing levels of government involvement. As discussed below, the majority of governmental action should focus on the first component of financial incentives. However, this component should not be exclusively relied upon, but rather, the other two components should also be used in moderation. The position taken here is that, while free markets are good at providing affordable access through competition, they cannot alone provide universal access to all Americans. Conversely, while various forms of government action can provide universal access, the government is not always as efficient as the free market.

A. Government Incentives: Encourage the Free Market

{52}The first component of this new framework is for the federal government to provide incentives to the free market to provide affordable pricing to consumers. This type of government activity is the least intrusive of the three and relies on the free market to provide the bulk of the Internet access. In this approach, individual consumers obtain Internet products and services directly from retailers. This approach also closely matches the current wave of down-sizing government and privatizing as many functions as possible. This is highlighted by legislative action that is aimed at reducing as much as possible, the role of the government in the Internet, such as the Digital Dozen.^[92] This is also the preferred approach of the executive branch as articulated by the Information Infrastructure Task Force ("IITF"), which guides the administration's vision for the National Information Infrastructure ("NII"). The number one objective of this initiative is to "promot[e] private sector investment."^[93]

1. Affordable Prices Through Demand, Aggregation, Subsidization, and Tax Incentives

{53}On its own, the free market strives to achieve the maximum profit possible. This has a beneficial impact by driving America to be an economic superpower. Therefore, in order to encourage the free market to reduce consumer prices, financial incentives must be offered that offset reductions in price. This will ensure that the public receives Internet access at affordable prices, while the providers increase volume without reducing profitability.

{54}The first primary and direct means of financial incentives is for the government to encourage the free market through the use of demand aggregation. This concept occurs the government groups all the consumers it represents together and offers them to service providers as new customers. The government uses its position as the representative of tens of millions of new fee-paying customers to negotiate the best rates possible. This is a strong enticement, since one primary business driver of ISP's is to obtain new customers.^[94] This concept was articulated during a discussion with Ray Campbell, Acting Chief Information Officer of the State of Massachusetts, who stated that "it is the government's role to aggregate demand."^[95]

{55}Demand aggregation fits well with the notion that, where the free market is concerned, the government should have a minimal direct role to play. However, the government has an important direct role to play where important public policy goals, such as universal Internet access are concerned. Furthermore, although its role is direct, the government can still use the free market to provide the actual service.^[96]

{56}An indirect financial incentive that could be used to encourage affordable Internet access is a price reimbursement program. The government would subsidize a lower price by paying the provider the difference between the lower price and what the normal market price would have been. This is commonly used in the agricultural industry, for example, to make up the difference in crop prices that are sold at below normal prices.^[97]

{57}In a like manner, a price reimbursement method could be employed to reduce the price of Internet access. The government could encourage suppliers of goods and services to reduce their prices. The suppliers would keep records of each transaction and submit these records to the government. The government would then reimburse the suppliers the amount that the price was reduced.

{58}Another indirect financial incentive that could encourage the free market to reduce prices is the use of tax incentives. This is where the government subsidizes lower prices by reducing the tax burden of the provider. The tax burden is reduced in proportion to the difference between the reduced price and what the normal market price would have been.^[98] The government uses this to encourage donations to charities, for example, where private parties receive a tax benefit for donating their old cars.^[99]

{59}In a like manner, tax incentives could be employed to reduce the price of Internet access by encouraging suppliers of goods and services to reduce their prices. The suppliers would keep records of each transaction

that had a reduced price and submit these records to the government as part of their normal end-of-year tax filing. The government would then allow for a proportional reduction in the supplier's annual tax burden.

2. Most, If Not All, Businesses Would Qualify for These Incentives

{60}The next step would be to identify which Internet goods and services providers would be targeted for these types of incentives. Since these financial incentives are beneficial to most firms because they maintain profitability or reduce the tax burden, this component should be the most common instrument used by the government to encourage affordable Internet access. Therefore, these incentives should be extended to the widest possible group of businesses, including manufacturers of the computers and hardware, software developers, and ISP's.

3. Current Examples of This Component Successfully in Use

{61}There are already a number of Internet providers offering reduced prices for their goods and services. For example, some computer manufacturers already offer sub-thousand dollar computers that have all the basics necessary to gain Internet access.[100] These computers, however, are limited in their other uses.[101] Also, many ISP's already offer Internet access for \$10-30 per month. One of the most popular service providers is America Online ("AOL"), which offers unlimited access for \$21.95 per month.[102]

{62}Furthermore, as previously discussed, some Internet providers even offer free goods and services. Although these offers may be at a limited financial charge, the consumer still pays in other ways. For example, the consumer has to divulge personal and demographic information, as well as face the loss of privacy while on the Internet. Appendix A. has a number of examples of firms offering Internet access at reduced price.

4. Summary

{63}These government incentives are a powerful tool to encourage affordable prices. In some cases, Internet access providers are already offering discounted prices. However, these offers are limited in quantities to tens of thousands and will not serve the great masses that require service. Even if one rounds the number served up to one hundred thousand or even to one million, this is still only a small percentage of those who currently do not have Internet access.[103]

{64}The role of government then, is to take these examples that have proven successful on a small scale, and to use them as blueprints for large scale implementation of affordable access. By providing financial incentives, the government can encourage many more Internet access providers to also offer discounted prices. With enough incentives, many more Americans would have affordable access to the Internet.

B. Government Enforcement: Compel the Free Market

{65}The second component of this new framework would be for the federal government to compel certain large conglomerates or corporations to provide universal access and affordable prices. This component would be limited in use to only the largest corporations that have the greatest impact on the Internet access market. But since this type of government activity would be fairly intrusive to the subject companies, it is the component that would proportionately have the largest effect on consumers.[104] Like the first, this second component also relies on the private free market to provide the access, and individual consumers would still obtain the Internet products and services directly from retailers.

1. Affordable Pricing and Universal Access Through Concurrent Requirements

{66}Through this component, the government would compel affordable pricing and universal access by

including this as a concurrent requirement with other, sometimes unrelated, government action. That is, if a large provider wanted certain assistance from the government in one area, that provider would first need to provide affordable pricing and a portion of universal access. For example, if a large provider wanted governmental action in an issue relating to international trade, the provider would need to first offer some amount of affordable pricing and universal Internet access.[\[105\]](#)

{67} Additionally, while the government is attempting to force conduct, the subject provider should not be forced to incur economic hardship. To avoid this, the same financial incentives discussed above would still be available to the large providers. These financial incentives would make this compelled performance tolerable to the large providers.

{68} A practical application of this component would be to help resolve the reciprocal compensation agreement issue discussed above.[\[106\]](#) This is because it would require a fair amount of government action to modify the current structure that the FCC uses to enforce reciprocal compensation fees. Additionally, the modification could mean millions of dollars per year to service providers.[\[107\]](#) Yet, the government may not want to engage in this difficult process unless the large providers committed to some amount of affordable pricing and universal access. Remember that the providers could still use the financial incentives to maintain profits or to obtain tax benefits. In this way, if large ISP's or RBOC's wanted a speedy resolution to the reciprocal compensation issue, those firms should be forced to offer some amount of affordable pricing and universal access in return for timely government action. The government could be satisfied, for example, with a reduction in long-distance telephone charges.[\[108\]](#)

2. Application Proposed for the Very Large Internet Access Providers

{69} Now this article moves to the identification of which companies should be compelled to provide affordable access and universal service. Since this type of government action is fairly severe, it should be applied to only the largest conglomerates or corporations that have the greatest impact on Internet access. Furthermore, these government requirements would not apply to organizations that already offer affordable Internet access.

{70} An example of a large Internet conglomerate that could fit into this category is the recently-announced alliance between AOL, Sun Microsystems, and Netscape.[\[109\]](#) This development brings together the approximately thirteen million AOL customers, with Sun's global computing products, and Netscape's Internet software to form a one-stop-shop for all Internet-related activities. This powerful unity provides the alliance with the ability to have a major impact on the Internet access market.[\[110\]](#) Because of this large impact, the government should ensure that the provider offers affordable access and some amount of universal service. Again, it is important to note that the target provider could still take advantage of the financial incentives discussed above.

3. Current Examples of This Component Successfully in Use

{71} This type of aggressive governmental enforcement is not new. On the contrary, for uniquely important issues, such as military procurement for our national defense, the government has been using such a strong-arm policy. For instance, not just any vendor can develop and sell products to the military. If a particular company wants the military's manufacturing business, that company has to adhere to rigorous contractual, procedural, and technical specifications far beyond what is common in the private sector.[\[111\]](#) An example of this situation is the Raytheon Systems Company, a major U.S. defense contractor that deals in defense electronics and complex integrated information systems. In its dealings, the U.S. Department of Defense requires strict adherence to contractual procedures and manufacturing specifications in all five of Raytheon's military segments.[\[112\]](#)

4. Summary

{72}For the reasons discussed in Section I, Internet access is a uniquely important issue. Therefore, when dealing with large corporations with the greatest impact on the Internet access market, the government is justified in using strong policies to ensure affordable pricing and universal access. Yet, because of the limited number of providers that fit within the target of this component, this type of action would be rare. In any case, once the corporation does offer affordable pricing and access, it would be entitled to the same financial incentives as other providers.

C. Government Provided Access

{73}The third component of this framework is for the government itself to provide Internet access in locations that would otherwise go without service. In this way, and even if the previous two components did not provide access, all Americans could access the Internet, regardless of their geographic, social, or economic situation.

1. The Government Itself Should Provide Internet Access in Public Libraries

{74}This component would be implemented by the government providing Internet computers in public libraries across the country. Libraries make an ideal location for this service for the following reasons: one, many libraries have already been built in most towns and cities, so new buildings would not be required; two, libraries are already designed to be public access service facilities, and so no major redesign would generally be necessary to accommodate the public; and three, placing public access Internet computers in libraries would reinvigorate the importance of libraries, thus elevating their importance and the importance of learning generally.

{75}This is not a new concept. Libraries around the world, from the Boston Public Library [113] to the State Library of South Australia,[114] have already been providing public Internet access. The goal, however, is for a much larger implementation of these services to many of the smaller local libraries. The objective is to make it as easy as possible for people to locally access Internet services.[115]

{76}As early as May of 1997, the FCC has also reviewed the issue of connecting libraries to the Internet in "rural, insular and high cost areas." [116] The FCC found that it needed to better address the support mechanisms for these areas. To that end, the FCC raised the amount of telecommunication costs that libraries may recover from the government. The FCC also stated that it is "committed to funding twenty-five percent of the necessary support for carriers serving high cost areas." [117]

{77}Funding for such a national rollout could be done in the same manner as the 100,000 new police officers that were added by the Clinton Administration.[118] There, the federal government financed the initial costs of these new officers, which was in the billions of dollars. Then, over a number of years, the local and state governments picked up the ongoing funding for the officers. [119] Similarly, the federal government could fund the initial start-up costs of Internet access in libraries. Later, after a predetermined number of years, the state and local governments would provide the ongoing financial support.

{78}The following is an estimation of the cost of this component. The calculations will be based on 5,000 libraries (an average of 100 libraries in each of the fifty states) and 15,000 computers (5,000 libraries, each with an average of three computers). The one-time start-up costs would consist of the cost of the computers and their installation services. For a bulk purchase of 15,000 computers, it is reasonable to expect that the government could obtain the computers and installation services for approximately \$1,000 per computer. [120] This gives an initial startup cost of \$15 million (15,000 computers multiplied by \$1,000 per computer). [121]

{79}The ongoing costs per computer would be the annual cost of a phone line, an ISP, and computer support. A phone line costs \$240 per year (\$20 per month) and ISP service costs \$180 per year (\$15 per month).^[122] This equates to \$420 per computer per year, or \$6.3 million per year for 15,000 computers. The computer support could even be shared by multiple libraries within a local jurisdiction. For example, if one computer staff could support ten libraries, 500 computer employees would be needed. At \$60,000 per year,^[123] these employees would cost \$30 million per year. The support figure could be further reduced, however, by using some amount of telephone help desk support for the existing library staff, rather than hiring new computer employees.

{80}In review, to implement 15,000 computers, the first year would have an initial startup cost of \$51.3 million (\$15 million for the computers, \$6.3 million for Internet access, and \$30 million for the computer support). Thereafter, each year would have a cost of \$36.3 million (\$6.3 million for Internet access and \$30 million for the computer support). Although these numbers may appear large at first glance, when compared to the trillions of dollars in the federal budget and viewed in that context, tens of millions is not nearly as large a sum as it seems upon first impression.

2. Initially in Poor Rural and Urban Areas

{81}Although all public libraries should ultimately provide public Internet access, the initial focus should be on poor rural and urban areas. These are what the FCC refers to as rural, insular and high cost areas.^[124]

3. Current Examples of This Component Successfully in Use

{82}The U.S. Postal Service is a strong example of how the federal government can provide a public access service. This service not only provides access to areas that would otherwise go without service, but it also provides a high-quality service that is fairly uniform across the entire country. This model is described by the U.S. Postal Service, which states:

Universal service - delivering to everyone, everywhere, every day in the United States at uniform rates - is the cornerstone of the Postal Service mandate. More than 100 years ago, at the turn of the last century, the controversial experiment that was rural free delivery began, creating a communications infrastructure that reached into the most remote corners of the American landscape.^[125]

{83}In 1775, the Continental Congress created what is now the U.S. Postal Service. This service helped a weak confederation of colonies grow into a strong country by supporting our unique state/federal economic model of commerce. It also supported our democratic system by assisting the free flow of ideas and information. Over two hundred years later, the U.S. Postal Service still supports the nation's economy by delivering "hundreds of millions of messages and billions of dollars in financial transactions each day to eight million businesses and 250 million Americans."^[126] This is the model that should be used to implement Internet access in public libraries across the country.

4. Summary

{84}The government developed a nation-wide communication system over two hundred years ago, the government can do it again today. Furthermore, if the government can facilitate the provision of 100,000 new police officers, it can do the same for Internet access. Providing access should be done initially in poor areas, then ultimately in all public libraries. Furthermore, access in schools is not enough. At best, this only supplies current students with Internet access.^[127] If the government does not do it, poor areas will go without service. In this way, all Americans can access the Internet, regardless of their geographic, social, or economic situation.

III.CONCLUSION

{85}It is apparent that Internet access is important and should be universally available. This is based upon several principles: first, informed consumers stimulate competition and improve our economy; second, our democratic system of government requires active, informed citizens; and third, the Internet is making the world a much smaller place where people and their governments base more of their opinions on current, independent information. However, regardless of how important the Internet is to our current and future generations though, the problem is that half of all Americans do not yet have Internet access. Many of those without access cannot afford the hundreds, if not thousands, of dollars in cost. We should not allow large numbers of our fellow Americans to fall behind in accessing this valuable technology, thus creating a digital divide in our already fractious society.

{86}Like radio broadcasting before it, the solution here for this new technology is to create an appropriate regulatory framework. The components of which would be, first, for the government to use demand aggregation, price subsidization, and tax incentives to encourage Internet access providers to offer affordable prices. Second, for the government to compel affordable pricing and universal access through concurrent requirements. Third, for the government itself to provide Internet access in local libraries.

{87}In this framework, the government's primary role would be in the first and second components, which rely on the strength of the competitive free market as the main provider of Internet access. The government's secondary role as a "gap-filler" service provider would only be used in the third component. The position taken is that, while the free market can provide the majority of affordable access through competition, it will never alone provide universal access to all Americans. Conversely, while various forms of government action can provide universal access, the government is not always as efficient as the free market.

{88}If over two hundred years ago the government could successfully develop the U.S. Postal Service, and today it can put 100,000 new police officers on the street, it can also ensure affordable Internet access for all Americans. Although there has been some progress in this direction, providing free service to tens of thousands of people with good spending habits is only a start. This will not provide real universal access to the people who need it the most. The time has passed for the "hands-off" approach; rather, the government needs to take a strong leadership role and ensure universal access for all Americans. In this way, all Americans could access the Internet regardless of their geographic or economic situation.

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[**]. **NOTE:** All endnote citations in this article follow the conventions appropriate to the edition of THE BLUEBOOK: A UNIFORM SYSTEM OF CITATION that was in effect at the time of publication. When citing to this article, please use the format required by the Seventeenth Edition of THE BLUEBOOK, provided below for

your convenience.

Mark J. Maier, *Affordable Internet Access for All Americans*, 6 RICH. J.L. & TECH. 8 (Fall 1999), at <http://www.richmond.edu/jolt/v6i2/article3.html>.

[1] See Clare Haney, *Canada Strives to be Most Wired Country*, CNN INTERACTIVE (visited Sept. 8, 1999) <<http://cnn.com/TECH/computing/9903/09/canada.idg/>>.

[2] See David R. Johnson and David G. Post, *And How Shall the Net Be Governed? A Meditation on the Relative Virtues of Decentralized, Emergent Law* (visited Sept. 8, 1999) <<http://www.cli.org/emdraft.html>>.

[3] See Arther Cebrowski, VADM USN, and John Garstka, *Network-Centric Warfare, Its Origin and Future*, 124 U.S. NAV. INST. PROC. 139 (1998) <<http://www.usni.org/Proceedings/Articles98/PROcebrowski.htm>>.

[4] See James Adams, *THE NEXT WORLD WAR: COMPUTERS ARE THE WEAPONS AND THE FRONT LINE IS EVERYWHERE* (Simon & Schuster 1998).

[5] Don Tapscott, *GROWING UP DIGITAL: THE RISE OF THE NET GENERATION* 255 (McGraw-Hill 1997).

[6] Tom Steinert-Threlkeld, *Will Free PCs Close 'Digital Divide'?* INTER@CTIVE WK. (visited Sept. 8, 1999) <<http://www.zdnet.com/intweek/stories/column/0,4163,2228856,00.html>>.

[7] Thomas G. Krattenmaker, *Telecommunications Law and Policy* 5 (Carolina Academic Press 1998).

[8] Throughout this paper, various forms of "the government" and "Internet access providers" are used. Unless otherwise indicated, "the government" refers to the U.S. government, while "Internet access providers" refers to the many different companies that sell the products and services that are required to connect to the Internet.

[9] See, e.g., Kelley Blue Book, *Guiding The Car Buyer* (visited Sept. 9, 1999) <<http://www.kbb.com/>>.

[10] See Haney, *supra* note 1.

[11] Stephen M. Johnson, *The Internet Changes Everything: Revolutionizing Public Participation and Access to Government Information Through the Internet*, 50 ADMIN. L. REV. 277, n.1 (Spring 1998) (quoting letter from James Madison to W.T. Barry (Aug. 4, 1822), reprinted in *The Complete Madison* 337 (S. Padover ed., 1953)).

[12] *Id.* at 277 n.2 (quoting President William J. Clinton, State of the Union Address, 33 WKLY. COMP. PRES. DOC. 136, 140 (Feb. 4, 1997)).

[13] See *id.* at 322 nn. 227, 228 (explaining and describing how an informed citizenry can effect change).

[14] See *Columbia Broadcasting Sys., Inc. v. Democratic National Comm.*, 412 U.S. 94, 123 (1973).

[15] See U.S. Dep't of Defense, *Operation Allied Force* (visited Sept. 9, 1999) <<http://www.defenselink.mil/specials/kosovo/index.html>>.

[16] See *Free B92* (visited Sept. 11, 1999) <<http://www.freeb92.net/>>.

- [17] See eGroups, *Monk Spreads Kosovo News Via Email*, PR NEWSWIRE (visited Sept. 9, 1999) <<http://www.prnewswire.com/>>.
- [18] See Alfred C. Aman, Jr., *The Globalizing State: A Future-Oriented Perspective on the Public/Private Distinction, Federalism, and Democracy*, 31 VAND. J. TRANSNAT'L L. 769, 771 (Oct. 1998).
- [19] See Richard E. Wiley, *Competition, Consolidation, Convergence and Challenge: Developments in Communications Law*, 538 PLI/Pat 1123, 1149 (Nov. 1998).
- [20] See Bell Atlantic Corp., *Products and Services* (visited Sept. 10, 1999) <<http://www.bell-atl.com/largebiz/911.htm>>.
- [21] See Hal R. Varian, *The Information Economy*, University of California Berkeley (visited Sept. 10, 1999) <<http://www.sims.berkeley.edu/resources/infoecon/>>.
- [22] See Circuit City Stores, Inc. (visited Sept. 8, 1999) <<http://www.circuitcity.com>>.
- [23] See MediaOne, Inc. (visited Sept. 10, 1999) <<http://www.mediaone.com/>>.
- [24] See Compaq Computer Corporation (visited Sept. 8, 1999) <<http://www.compaq.com/>>.
- [25] See Compaq Computer Corporation, *Home and Home Office Computing* (visited Sept. 8, 1999) <<http://www.compaq.com/athome/desktops/>>. ([P]rices starting at \$499 (suggested retail price, monitor not included) with the Compaq Presario 5300 series, power and expandability combine for breakthrough value, includes 56K ITU V.90 Modem(1) and a Pentium II 333 MMX Enhanced Processor with 75 MHz Bus Speed.) *Id.*
- [26] See U.S. Postal Service, *Rates* (visited Sept. 8, 1999) <<http://www.usps.gov/consumer/domestic.htm#first>>.
- [27] See Federal Express Corporation, *FedEx Online Service Guide Rates* (visited Sept. 8, 1999) <<http://www.fedex.com/us/rates/>>.
- [28] Application hosting is a service where Internet service providers maintain the computer hardware and software programs for a given function, such as large data storage. Customers use these applications without having to maintain the equipment and programs themselves.
- [29] See Compaq Computer Corporation, *supra* note 24.
- [30] See Netscape Communications Corporation (visited Sept. 10, 1999) <<http://home.netscape.com/>>.
- [31] See MediaOne, Inc., *Media One Road Runner* (visited Sept. 8, 1999) <<http://www.mediaonerr.com/>>.
- [32] See America Online, Inc. (visited Sept. 8, 1999) <<http://www.aol.com/>>.
- [33] See Boardwatch Magazine Online, *Boardwatch Magazine's Directory of Internet Service Providers* (visited Sept. 8, 1999) <<http://boardwatch.internet.com/isp/ac/index.html>>.
- [34] See Talk America Internet, Inc. (visited Sept. 8, 1999) <<http://www.tainternet.com/ta/home.asp?>>.
- [35] See Free-PC Network (visited Sept. 8, 1999) <<http://www.free-pc.com/>>.
- [36] See NetZero, Inc. (visited Sept. 8, 1999) <<http://www.netzero.net/>>.

[37] See HotMail, a Service of Microsoft Corporation (visited Sept. 8, 1999) <<http://www.hotmail.com/>>. Other companies offering free Internet access can be found at the following sites: <http://isps.com/TollFree>, <http://www.lsynergy.com/synergyonline/>, <http://www.thefree.net/>, <http://www.myplanet.net/bcent1/>, <http://boardwatch.internet.com/>, <http://ispcon.internet.com/>, <http://ww2.goldfish.com/guides/isps/five/>, <http://www.appro.com/tradeshows.html>, <http://www.mastro.net/freewmfo/allen>, http://www.surfpoint.com/Computer_Internet/Free_Stuff/, <http://www.myfreeoffice.com/mastent/>, <http://teano.hypermart.net/>, <http://www.freeyellow.com/members3/arrived/>.

[38] Bruce Meyerson, *Cheaper, Free Internet Access May Change the Game*, Associated Press Newswires (last modified Mar. 3, 1999). Online International Catalog Business and Mall with Autopilot Recruiting System can be found at <http://dynamicnetwork.com/>. Sponsors of the Java Glossary, Canadian Mind Products and Roedy Green offers products at <http://mindprod.com/sponsor.html>. Over 100 Free Sample Products, Christmas cards, postcards, prizes, daily horoscope, free website promotion, and more are available at <http://minmdprof.com/sponsor.html>.

[39] See Free-PC, *supra* note 35.

[40] See Dixons, *Welcome to Dixons online* (visited Sept. 15, 1999) <<http://www.dixons.co.uk>>.

[41] See Freeserve, *Home* (visited Sept. 15, 1999) <<http://www.freeserve.co.uk>>.

[42] See Mary Lisbeth D'Amico, UK Food Retailer Offers Free Internet Acces, IDG News Service (Feb. 1, 1999) <<http://www.1ti.on.ca/front/globalwatch/g0207-03.htm>>.

[43] See Tesco, *Tesco Online* (visited Sept. 15, 1999) <<http://www.tesco.co.uk>>.

[44] See Tesconet, *Home* (visited Sept. 15, 1999) <<http://tesco.net>>.

[45] See Streamline, *Finding Time for Life's Simple Pleasures* (visited Sept. 15, 1999) <<http://www.streamline.com>>.

[46] See AltaVista Connections, *Welcome to Unlimited Free Internet Access* (visited Sept. 6, 1999) <<http://microav.com/>>.

[47] See Free-PC, an idealab! company (visited Mar. 31, 1999) <<http://www.free-pc.com/>>.

[48] See NetZero, Inc (visited Mar. 31, 1999) <<http://www.netzero.net/>>.

[49] See HotMail, a service of Microsoft Corporation (visited Mar. 31, 1999) <<http://www.hotmail.com/>>.

[50] See Talk America Internet, Inc. (visited Mar. 31, 1999) <<http://www.tainternet.com/ta/home.asp?>>.

[51] See Johnson and Post, *supra* note 2.

[52] Such as the Transmission Control Protocol / Internet Protocol ("TCP/IP").

[53] Johnson and Post, *supra* note 2.

[54] See The Internet Engineering Task Force, *Request for Comments* (visited Sept. 8, 1999) <<http://www.ietf.cnri.reston.va.us/rfc.html>>.

[55] See Johnson and Post, *supra* note 2.

[56] See Conrad Burns, *Senator Conrad Burns' Digital Dozen* (Jan. 29, 1999) (visited Sept. 8, 1999) <http://www.senate.gov/~burns/digital_dozen.htm>. "There is no question that in virtually every area of our lives, from the television we watch to the purchases we make, from our financial transactions to keeping track of our daily schedules, from simple telephone calls to the way we become politically active, we are entering the Digital Era." *Id.*

[57] See *Id.*

[58] See Cameron F. Kerry, *Feds Finding that Old Rules Don't Work on Net*, *Mass High Tech*, at 17 (Apr. 5, 1999).

[59] Telecommunications Act of 1996, 47 U.S.C. 151 et seq. (1996).

[60] See *A Tough Act to Follow* (National Public Radio broadcast, Feb. 8, 1999).

[61] See Business & Financial Editors, Data/Telecom Services & Computing Writers, *IP-Based Networks Threaten International Carriers' Call Settlement Revenues: U.S. Carriers to Benefit*, *BU\$INESSWIRE* (Oct. 14, 1998) (visited Sept. 8, 1999) <<http://www.killen.com/>>.

[62] Also known as Incumbent Local Exchange Carriers (ILEC).

[63] Telecommunications Act of 1996, 47 U.S.C. 151 et seq. (1996):

- PART II--DEVELOPMENT OF COMPETITIVE MARKETS.

-- SEC. 251. INTERCONNECTION. (b) OBLIGATIONS OF ALL LOCAL EXCHANGE CARRIERS- Each local exchange carrier has the following duties: (5) RECIPROCAL COMPENSATION- The duty to establish reciprocal compensation arrangements for the transport and termination of telecommunications.

-- SEC. 252. PROCEDURES FOR NEGOTIATION, ARBITRATION, AND APPROVAL OF AGREEMENTS. (d) PRICING STANDARDS- (2) CHARGES FOR TRANSPORT AND TERMINATION OF TRAFFIC- (A) IN GENERAL- For the purposes of compliance by an incumbent local exchange carrier with section 251(b)(5), a State commission shall not consider the terms and conditions for reciprocal compensation to be just and reasonable unless-- (i) such terms and conditions provide for the mutual and reciprocal recovery by each carrier of costs associated with the transport and termination on each carrier's network facilities of calls that originate on the network facilities of the other carrier; and (ii) such terms and conditions determine such costs on the basis of a reasonable approximation of the additional costs of terminating such calls.

- PART III--SPECIAL PROVISIONS CONCERNING BELL OPERATING COMPANIES

-- SEC. 271. BELL OPERATING COMPANY ENTRY INTO INTERLATA SERVICES. (c) REQUIREMENTS FOR PROVIDING CERTAIN IN-REGION INTERLATA SERVICES- (2) SPECIFIC INTERCONNECTION REQUIREMENTS- (B) COMPETITIVE CHECKLIST- Access or interconnection provided or generally offered by a Bell operating company to other telecommunications carriers meets the requirements of this subparagraph if such access and interconnection includes each of the following: (xiii) Reciprocal compensation arrangements in accordance with the requirements of section 252(d)(2). (emphasis added.)

[64] See John Borland, *FCC Walks Tightrope over ISP Calls* (visited Sept. 6, 1999)

<http://www.news.com/News/Item/0,4,29577,00.html>.

[65] Although a recent ruling by the Federal Communications Commission ("FCC") addressed these problems, it did not completely resolve the issue. The FCC found that "calls to ISP's are largely interstate in nature." But the ruling left in place the current problem for the RBOC's. The CLEC claimed that this traffic is subject to the reciprocal compensation fees. The RBOC's claimed that this traffic was basically "interstate" in nature, and thus was beyond the scope of the reciprocal compensation fees. The FCC left it up to the states to determine whether the CLEC's were long or local carriers. See Federal Communications Commission, *Declaratory Ruling in CC Docket No. 96-98 and Notice of Proposed Rulemaking in CC Docket No. 99-68* (Feb. 26, 1999) <<http://www.fcc.gov/Bureaus/CommonCarrier/Orders/1999/fcc99038.txt>>. Furthermore, the Massachusetts Department of Telecommunications & Energy recently found that calls to the CLEC's were essentially interstate, long distance calls. Thus, the RBOC's no longer have to pay the CLEC's reciprocal compensation fees. See Mary Nelen, *DTE ruling 'unfair' say ISPs, CLEC's*, Mass High Tech, May 31-June 6, 1999, at 8 <<http://www.boston.com/mht/issue99/053199/lead5.html>>.

[66] Telecommunications Act of 1996, 47 U.S.C. §151 et seq. (1996).

[67] See Federal Communications Commission, *FCC Issues Report on the Deployment of Advanced Telecommunications Capability to All Americans*, Report No. CC 99-1, CC Docket No. 98-146 (Jan. 28, 1999).

[68] See John Borland, *FCC Not Yet Off the Political Hook* (visited Sept. 6, 1999) <<http://www.news.com/News/Item/0,4,30372,00.html>>.

[69] See Robert Cannon, E-mail Post to CYBERIA-L@LISTSERV.AOL.COM, Re: ATT & IOWA (Jan. 28, 1999).

[70] See Tapscott, *supra* note 5.

[71] See Barbara Wellbery, *Elements of Effective Self-Regulation*, 1075 PLI/Corp 67 (Sept. 1998).

[72] See Federal Communications Commission, *FCC Issues Report on the Deployment of Advanced Telecommunications Capability to All Americans*, Report No. CC 99-5, CC Docket No. 98-146 (Jan. 28, 1999).

[73] See Donald Weightman, *Notes from a conference on broadband*, Email post to CYBERIA-L@LISTSERV.AOL.COM (Feb. 4, 1999).

[74] Communications Decency Act of 1996 is Title V of the Telecommunications Act of 1996, 47 U.S.C. 151 et seq. (1996).

[75] *Reno v. ACLU*, 521 U.S. 844 (1997).

[76] See Jack L. Goldsmith, *Against Cyberanarchy*, 65 U. Chi. L. Rev. 1199 (Fall 1998).

[77] Internal Revenue Service, *Form 1099-INT* (1999).

[78] See Goldsmith, *supra* note 74, at 1200.

[79] See Johnson and Post, *supra* note 2.

[80] See The World Trade Organization, *A Summary of the Final Act of the Uruguay Round* (last modified

May 20, 1997) <http://www.wto.org/wto/legal/ursum_wp.htm>.

[81] See Johnson and Post, *supra* note 2.

[82] See The World Trade Organization, *supra* note 78.

[83] See Johnson and Post, *supra* note 2.

[84] Goldsmith, *supra* note 74, at 1200.

[85] See *id.*

[86] Internet Protocol ("IP").

[87] See John D. Howard, *An Analysis Of Security Incidents On The Internet 1989-1995, Chapter 2. Internet Characteristics, Carnegie Mellon University (1997)* <<http://www.cert.org/research/JHThesis/Chapter2.html>>. *Internet Characteristics*, Carnegie Mellon University (Apr. 7, 1997) <<http://www.cert.org/research/JHThesis/Chapter2.html>>.

[88] See I. Trotter Hardy, *The Proper Legal Regime for Cyberspace*, 55 U. PITT. L. REV. 993, 1029 (1994).

[89] See Johnson, *supra* note 11.

[90] See Lawrence Lessig, *Constitution and Code*, 27 CUMB. L. REV. 1 (1996-97).

[91] See Johnson, *supra* note 11.

[92] See Burns, *supra* note 54.

[93] Information Infrastructure Task Force (IITF), *About the President's INFORMATION INFRASTRUCTURE TASK FORCE* (last modified July 1, 1997) <<http://www.iitf.nist.gov/about.html>>.

[94] See Boardwatch Magazine Online (visited Sept. 8, 1999) <<http://boardwatch.internet.com/>>.

[95] Ray Campbell, Acting Chief Information Officer of the State of Massachusetts, Speaking to the Computer and High Technology Law Class at the Suffolk University Law School (Apr. 13, 1999).

[96] See *id.*

[97] See U.S. Dep't of Agriculture, *Welcome to the Farm Service Agency Website* (visited Sept. 8, 1999) <<http://www.fsa.usda.gov/pas/default.asp>>.

[98] See Internal Revenue Service, *Empowerment Zones and Enterprise Communities* (visited Sept. 10, 1999) <http://www.irs.ustreas.gov/prod/forms_pubs/pubs/p954in.htm> (showing it used, for example, to re-develop deteriorated urban areas). This is a common tool to encourage the free market.

[99] See Easter Seals, *Easter Seals of Oregon and Nevada Automobile Donation Program* (visited Sept. 10, 1999) <<http://www.vehicledonation.com/>>.

[100] See Compaq Computer Corporation, *supra* note 25.

[101] See *supra* Section I(C)(3).

[102] See Meyerson, *supra* note 38.

[103] See Steinert-Threlkeld, *supra* note 6.

[104] See generally Bryan Gruley, *Outcome of Battle in Oregon Stands to Shape E-commerce*, WALL ST. J. posting on MSNBC (1999) <<http://www.msnbc.com/>>.

[105] See Varian, *supra* note 21.

[106] See Federal Communications Commission, *Declaratory Ruling in CC Docket No. 96-98 and Notice of Proposed Rulemaking in CC Docket No. 99-68* (Feb. 26, 1999) <http://www.fcc.gov/Bureaus/Common_Carrier/Orders/1999/fcc99038.txt>.

[107] See generally Wiley, *supra* note 19, at 1157.

[108] *Id.* at 1158.

[109] See Netscape, *America Online and Sun Microsystems form Strategic Alliance* (visited Sept. 7, 1999) <<http://home.netscape.com/company/press/pr/financial.html>>. See also Netscape, *Sun-Netscape Alliance 1999 Press Releases* (visited Sept. 7, 1999) <<http://home.netscape.com/netscape/alliance/press/pr/1999.html>>.

[110] See Robin Gareiss, *ISP Backbones: Is the Internet in Trouble?*, Data Communications Magazine, The McGraw-Hill Companies, Inc. (last modified Sept. 21, 1997) <<http://data.com/roundups/trouble.html>>.

[111] See Raytheon [Military] Systems Company (last modified June 11, 1999) <<http://www.raytheon.com/rsc/pro00.htm>>.

[112] See *Id.* (Raytheon's five military segments are: Defense Systems; Sensors and Electronic Systems; Command, Control, Communication and Information Systems; Aircraft Integration Systems; and Training and Services).

[113] See Boston Public Library, *Internet Access Points* (visited Sept. 12, 1999) <<http://www.bpl.org/www/gl/glsinternet.html>>. "Internet Access points in the [Boston Public] General Library ¼ [include] 4 PC's on the Second Floor of the Johnson Building for Adult Service, 4 PC's in the Young Adults Room for teens, 4 PC's in the Children's Room for Kids 8-13."

[114] See State Library of South Australia, *Internet Access and E-Mail* (visited in person in 1993, visited Sept. 12, 1999) <<http://slsa.sa.gov.au/library/collres/facilities/fac.htm>>. "Time can be booked on the [State Library of South Australia] library's public access PC's for research, browsing and the use of 'Hotmail' facilities for e-mail." (the author visited this library in person in 1993).

[115] See Wiley, *supra* note 19, at 1153.

[116] Federal Communications Commission, *In the Matter of Federal-State Joint Board on Universal Service*, 12 FCC Rcd. 10095, 10105 (July 10, 1997).

[117] *Id.* at 10096.

[118] See The White House, *Top Issue - May 15, 1996, Remarks by The President In Conference Call to Mayors In Announcement of Grants* (visited Sept. 12, 1999) <<http://www.pub.whitehouse.gov/uri-res/12R?urn:pdi//oma.eop.gov.us/1996/5/17/8.text.1>>.

[119] *See id.*

[120] *See supra* Part II(A)(1)(The PC is estimated at \$750, while two hours at \$125/hour is estimated for installation).

[121] *See generally*, Gateway 2000 Inc. (visited Sept. 12, 1999) <<http://www.gateway.com/home>> (stating that it is recommended that a leasing program be used, since it refreshes the computers every few years).

[122] *See supra* Part II(C)(1).

[123] *See* Help Wanted Section, Sunday Boston Globe (visited Sept. 8, 1999) <<http://careers.boston.com/>> The estimated cost of a computer employee is based on a composite from a recent online newspaper.

[124] *See* FCC, *supra* note 104.

[125] U.S. Postal Service, *1998 Annual Report-Delivery Far and Wide* (visited Sept. 7, 1999) <<http://www.usps.gov/history/anrpt98/>>.

[126] *Id.*

[127] *See* Tapscott, *supra* note 5.

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