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Converging Borders In A Virtual World

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CONVERGING BORDERS IN A VIRTUAL WORLD

An Analysis of the Sales and Use Taxation of Cyberspace

Submitted in Partial Fulfillment for the Requirements of Graduation with Honors to the Department of Business, Accounting, and Economics, Carroll College, Helena, Montana.

Vincent G. Kalafat

May 2003
This thesis for honors recognition has been approved for the Department of Business, Accounting, and Economics.

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Associate Professor, Department of Business, Accounting, and Economics

Dr. Charles Erickson, Reader
Professor, Department of Business, Accounting, and Economics

Mrs. Joan Stottlemyer, Reader
Director, Academic Resource Center
This thesis is dedicated to the memory of my father, 

SAMUEL R. KALAFAT, 

whose resonating love is forever felt
## CONTENTS

List of Illustrations

List of Tables

Abstract

Acknowledgements

Introduction

The Historical Evolution of the Internet

Emerging Technologies and Tomorrow’s Internet

The Internet’s Global Network

Redefining Business Models

Business-Centric Models

Consumer-Centric Models

A Revolution and the Rising Digital Economy

The Phenomenal Magnitude of Electronic Commerce

Business-to-Consumer Electronic Commerce

Business-to-Business Electronic Commerce

Taxation of Electronic Commerce from the Federal Perspective

Presidential Directive and Technology

The Great Tax Myth—The Internet Tax Freedom Act

Constitutional Provisions and the Determination of a Tax Nexus

Judicial Precedent and a Capstone Ruling

Sales and Use Tax Environment

A Comparative Analysis of the Sales and Use Tax System

Structural Comparison of Hawaii and Texas

Sales and Use Tax Fundamentals

The Use Tax

Comparison of the States’ Tax Base

Sales and Use Transaction Sourcing

Substantial Tax Nexus and the States’ Jurisdiction to Tax

Sales and Use Tax Summary

Guiding Principles of Tax Policy and the Sales and Use Tax System

Equality and Fairness

Certainty

Convenience of Payment
Economy of Collection 93
Simplicity 95
Neutrality 96
Economic Growth and Efficiency 97
Transparency and Visibility 98
Minimum Tax Gap 100
Appropriate Government Revenues 101

A Tax System for the New Millennium and Conclusion 102

Notes 105
ILLUSTRATIONS

Figures

1. Logical Map of the First Four-Node Network—ARPANET 8
2. Global Internet Population 14
3. The Global Composition of Internet Usage 15
4. The United States Internet Population 16
5. Households with Internet Access 24
6. Infrastructure Growth 24
7. U.S. Employment in IT-Producing and IT-Using Industries 25
8. The United States and Global eCommerce Growth 29
9. Estimated Quarterly U.S. Retail Sales 31
10. Percent of Individuals Using and Purchasing Over the Internet 32
12. State Tax Composition 55
13. Hawaii Tax Composition 58
14. Texas Tax Composition 58
15. State Sales Tax Rates 67
16. Compliance Costs 94
TABLES

1. The Digital Economy 27
2. The Benefits of Business-to-Business Electronic Commerce 34
3. Number of Taxing Jurisdictions for Sales and Use Tax 54
4. Texas Sales and Use Tax Rates 66
5. Texas—Tangible Personal Property Exemptions 71
6. Texas—Taxable Services 72
7. Hawaii—Tangible Personal Property and Services Exemptions 73
8. Comparison and Summary of the Sales and Use Tax Systems 87
9. Adam Smith’s Maxims of Tax Policy 88
10. AICPA’s Twentieth Century Tax Perspective Expansion 88
ABSTRACT

The United States of America was founded under the complexities and enforcement of taxes. Unquestionably, the issue focused on jurisdiction and, fundamentally, taxation without representation. Over two centuries later and at the dawn of a new millennium, that former union of states has been transformed into an unparalleled nation, phenomenally redefined in every facet by the advent of computing and networking technologies. As a result, a “new world” has been discovered characterized by a borderless and timeless virtual dimension that challenges the very application and future of conventional tax policy. Specifically, this thesis analyzes the states’ sales and use taxation of the trillion dollar emerging digital economy by examining governing sales and use tax legislation and landmark tax cases. The future, in a sense, is the fusion of the past and innovative visions of the present. Accordingly, this study utilizes an analytical approach by returning to the era of this nation’s birth to unite Adam Smith’s maxims of tax policy with the fundamental tax perspective in the twenty-first century. Guided by these principles, the current difficulties and complexities presented by the convergence of state sales and use tax and electronic commerce are objectively examined. This thesis concludes by presenting model tax considerations and proposals for the development of an effective taxation of electronic commerce to provide a harmonious gateway between an old nation and a new, connected, digital world.
ACKNOWLEDGEMENTS

Many thanks to Professor Belle Marie, Dr. Charles Ericksen, and Mrs. Joan Stottlemyer. Eloquently, Anatole France said “[t]he whole art of teaching is only the art of awakening the natural curiosity of young minds for the purpose of satisfying it afterwards.” In amazement, I have experienced these three masters at work, in perfect fulfillment of this statement. Without their guidance I certainly would not have been able to complete this thesis. With their instruction, encouragement, and friendship they have made even the most difficult dreams seem possible. No expression in words could adequately describe my deep appreciation for their insight and assistance. To the many professors at Carroll College who have touched my life, I am forever indebted.

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Finally, I owe everything in life to the blessings of My Creator and God. *En Dieu est tout.*
INTRODUCTION

At the dawn of a new millennium, the United States of America stands on the brink of entering into a new, digital era. Innovation and technology have unleashed a revolutionary wave that has impacted virtually every aspect of society. Even more astonishing is not the current technology changing the face of the globe, but the technology that stands at the verge of entry in the near future. It is an exciting digital future that will be founded on nanotubes, neural networks, and the unlimited potential of innovative dreams. Emerging technologies have presented a new commerce, electronic commerce, which foreshadows the future and conduct of business. The fusion of technology and electronic commerce has created an integration of fragmented markets into the global marketplace of the twenty-first century. Electronic commerce, marked by its instantaneous, intangible, and interstate nature, has been met by multiform complexity under the states’ current sales and use tax systems.

Sales and use tax comprises a major revenue source for most of the states. This reliance is strained by confusion with the advent of technology, remote selling, and electronic commerce. A web of complexity is spun by the states’ antiquated sales and use tax systems that encompasses multitudes of taxing jurisdictions and rates, inconsistent definitions, misapplications, erosion of effectiveness in light of electronic commerce, and, most importantly, a lack of uniformity. Reduced efficiency and effectiveness of the states’ generation of tax revenues and ultimate compromise of business success and future potential of technology and electronic commerce are the consequences of the sales and use tax system’s complexity.

This thesis focuses on analyzing these two conflicting forces in an attempt to
develop a gateway between the collage of states’ sales and use tax systems and the new, connected, digital world. A discussion of the evolution and future of technology and the Internet introduces the thesis in order to develop an appreciation for the tremendous pace of this revolution and guide in the development of effective sales and use tax policy. The aim is to accommodate volatility, a defining element of this new wave, without dampening its future potential by a constraining system characteristic of the current sales and use tax structure. The magnitude and future of the information economy and, in particular, electronic commerce are then studied to provide insight into its potential and inherent taxing complexities. Guiding federal legislation, constitutional provisions, and key court cases are presented to establish an awareness of constraining federal provisions that collectively establish the supreme law of the land. A comparative analysis of two states’ respective sales and use tax regulations is then performed to provide a representative perspective of the divergence and complexities of the current sales tax system. The unification of Adam Smith’s maxims of tax policy and the fundamental tax perspective of the twenty-first century provides the concluding critique of the existing tax system. Finally, guided by these principles and based on the examination and analysis of technology, electronic commerce, and the states’ sales and use tax system, a proposal for model tax considerations is presented for the development of an effective taxation of electronic commerce.

The future unquestionably will be defined by innovation and technology. In spite of their potential, the states’ complex tax laws threaten to constrain the unlimited promise of technology to the antiquated boundaries and framework of the current sales and use tax system. As this great nation stands at the forefront of a new, digital era, a bridge must be
created between an old system and a new, connected, digital world to provide for the effective realization of the states’ sales and use taxation objectives and allow for the continued advancement of defining technology limited only by human imagination.
The Historical Evolution of the Internet

Never before has our world been so touched and redefined by innovation as it was by the development of the Internet. This technology has allowed for the transfer of zeros and ones, which has effectively redefined the borders of our offices and transformed every facet of our lives. In order to understand the mass tax complexities presented by electronic commerce, specifically sales and use tax complexities, an appreciation and awareness of the development of the revolutionary technological transformation is necessary.

A defining event marking the dawn of the information revolution is often overlooked in the historical undertakings of the Internet. The ingenuity of a former generation, in a seemingly forgotten time, laid the foundation of the future commonplace connectivity of continents in 1858. On July 29, 1858, the Atlantic Telegraph Company began its fifth attempt to create the first undersea link connecting England and the United States. The first successful transatlantic cable was completed on August 16, 1858 and was established with the message, “Glory to God in the highest, and on earth, peace, good will to men.” Spanning the distance of 1,686 nautical miles, the success of the first transatlantic cable led to a global communication link without comparison until the 1960s, with the first communication satellites providing viable alternatives. This great feat reduced the delay in communication between Europe and North America from several weeks by the fastest sailing ship to a matter of hours. Even more importantly, the influences of this first intercontinental connectivity not only marked the dawn of a global network but also greatly influenced technological advancements, including the Internet and the continual drive for innovation in the twenty-first century.
The development and transformation of the Internet is often attributed solely to the entrepreneurial innovation harbored in the United States. However, the development of the Internet was the result of global influences. Almost one hundred years since the success of the first transatlantic cable, on October 4, 1957, Russia successfully launched *Iskustvennyi Sputnik Zemli* (fellow world traveler of the earth) better known as Sputnik One into space. Sputnik One represented the first rocket successfully launched into the earth’s upper atmosphere. More importantly, Sputnik One provided a vivid demonstration to the world of the Soviet Union’s advanced rocket technology.

On January 31, 1958, the United States, after faltering in its first space exploratory attempt, responded by launching its own unmanned satellite, Explorer One. President Dwight D. Eisenhower reacted to the Soviet Union’s challenge by signing into law the *National Aeronautics and Space Act of 1958* and Directive 5105.15 which established the National Aeronautics and Space Administration (NASA) and the Advanced Research Project Agency (ARPA). ARPA was endowed with the responsibility “for the direction or performance of such advanced projects in the field of research and development as the Secretary of Defense shall, from time to time, designate by individual project or by category.” The Soviet Union’s Sputnik series of spacecrafts not only initiated the space race with the United States, but provided the impetus for the creation of a new government agency, ARPA, that was most influential in the direct development of the Internet.

The creation of ARPA initially left a hollow agency whose focus was primarily limited to the analysis of war game scenarios. In 1962, however, a brilliant alumni from the famous Massachusetts Institute of Technology (MIT) Lincoln Laboratories, Dr.
J.C.R. Licklider, was chosen to head ARPA’s research program for the development of computer technology for the military. Dr. Licklider was a preeminent visionary of his time. In his famous thesis written while at MIT, titled “Man-Computer Symbiosis,” Dr. Licklider proposed: “In the anticipated symbiotic partnership, men will set the goals, formulate the hypotheses, determine the criteria and perform the evaluation. Computing machines will do the routine work that must be done to prepare the way for insights and decisions in technical and scientific thinking.” Dr. Licklider was the first person at ARPA to believe computers capable of more than mere calculations, and it was his vision that lifted the program to previously unattainable heights and instilled the vision for the most phenomenal development to touch the twentieth century and beyond, the Internet.

The stage was set at ARPA in 1965 when Robert Taylor joined the Information Processing Techniques Office (IPTO). Taylor expanded Dr. Licklider’s vision while sitting in front of three separate computer terminals at ARPA. Taylor posed the question, “Why cannot these computers be connected together, with one password and coded using one programming language instead of three different languages and passwords?” This phenomenal inquiry marked the foundation of the network computing vision.

Dr. Licklider foresaw an integral partnership between humans and computers, and this relationship led to the development of “block switching,” a fundamental technology of the Internet. While working at RAND Corporation to develop equipment that would withstand a nuclear attack, Paul Baran analyzed the sensory responses and processes of the human brain. Baran’s research revealed that when the brain transmits messages that encounter damaged cells, it reroutes the messages around the damaged cells to the intended destination. As a result, Baran formulated the idea of taking a message and
dividing it into parts called “blocks,” which would then be recompiled once they reached their destination. This revolutionary idea was further developed by Donald Watts Davies, a physicist for the British National Physical Laboratory. Davies’ innovative success was based on principles similar to Baran’s “block switching,” known as “packet switching,” and became a critical key to the future success of Internet technology.

ARPA was endowed with innovative, visionary minds and in 1969 was prepared to create a network that would redefine the future. ARPA allied its goals with Bolt, Beranek and Newman, Inc. (BBN), the architects of the host computers for the proposed network known as Interface Message Processors (IMP). BBN delivered the first IMP, IMP #1, to the University of California Los Angeles (UCLA) on September 1, 1969. Three subsequent IMPs were delivered to the Stanford Research Institute (SRI), the University of California—Santa Barbara (UCSB), and the University of Utah (UTAH), to complete the proposed four-node network illustrated in Figure 1. ARPANET, the first computer network, was born on October 1, 1969 with an established connection and logon between UCLA and SRI. The initial stability of the network was short lived, since it crashed following UCLA’s successful transmission of the letters “L” and “O” and “G.” “Yet a revolution had begun,” stated Leonard Kleinrock, pioneer in packet switching and distinguished professor at UCLA. It was at this moment that the ARPANET began its evolutionary process to reshape communication and commerce.

With the successful launch of the ARPA network and an established infrastructure, the development of applications for the network was the next innovative wave that has greatly impacted the form of communication worldwide. While working for BBN in 1973, Ray Tomlinson developed the technology that led to the first electronic
message (email) on the ARPANET. In the process of developing CPYNET, the first email file transfer protocol, Tomlinson selected the “@” symbol as the required separator between the user name and domain name. The impact of the first email message with the simple text, “QWERTYIOP,” was not understood or appreciated upon creation. In a report issued by ARPA in 1976, surprisingly, email was described as “unplanned, unanticipated, and unsupported [in the] nature of its birth and early growth. . . . It just happened, and its early history has seemed more like the discovery of a natural phenomenon than the deliberate development of a new technology.” Tomlinson remains a name all but forgotten in the twenty-first century, but the now famous “@” character he selected and the electronic message he developed are employed by millions of people around the globe.
Following the phenomenal success of the ARPANET, further networks began to appear throughout the United States, primarily in the academic realm. The fundamental flaw, however, was the fragmentation and lack of compatibility among networks. Robert Kahn and Vinton Cerf, pioneer networking engineers at Stanford, focused their research on ways that different networks could be interconnected. In their proposal "Protocol for Packet Network Inter-Communication," Kahn and Cerf presented a common digital network protocol that could be used to connect computers that use different hardware configurations and software programs. The new protocol, essential for the interconnection of networks and the single most critical element for the success of the Internet, was called Transmission Control Protocol/Internet Protocol (TCP/IP). The responsibility of TCP protocol is to verify that data from the client to server is correctly delivered, while IP protocol is responsible for the delivery of packets of data from node to node.

The success of TCP/IP protocols tremendously impacted the future of network computing, including the creation of the Internet. TCP/IP was first demonstrated in July 1977 by Kahn and Cerf, among three independent networks sending data from San Francisco to London and then to a third network at the University of California. The success of this first network test was a breakthrough in networking computing, since "the packet, in the end, traveled a total of 150,400 Km without losing a single bit."

The popularity of TCP/IP during the 1970s and the early 1980s resulted in many networks utilizing the protocols. The ARPANET, however, was still operating with a different protocol, known as the Network Control Protocol (NCP). On January 1, 1983 ARPANET and all networks connected to ARPANET switched over to the revolutionary
TCP/IP protocol. This day presented the first interconnection of networks under a standard network protocol and marked the official birth of the Internet. All networks that used the TCP/IP protocol were collectively called the Internet. This standardization of protocols provided the single most important impetus to the exponential growth and impact of the Internet—a network of networks.

The creation of a second layer network protocol, known as the HyperText Transfer Protocol (HTTP), and its sister programming language, Hypertext Markup Language (HTML), provided the most visible transformation of the computer era. The World Wide Web (the Web) was a vision of Tim Berners-Lee, while at the European Laboratory for Particle Physics of the Centre European pour la Recherche Nucleaire (CERN) in Switzerland and was made a reality in 1989. Karl Frieden, a former partner of Arthur Andersen and a notable electronic commerce expert, stated:

The Web introduced two major innovations to the Internet: (1) it facilitated the use of multimedia video, pictures, and music—in addition to the data and text that was already available on the Internet; and (2) it used hypertext—a tool that allows users to highlight words or icons and move from these locations to related information that may be stored on a computer in another region of the world. The Web provided standard formats for text, graphics, video, and sound, all that could be indexed and searched with ease. However, the amazing invention and development of the Web has been surprisingly described as “synergy, serendipity, and coincidence.” In response to the fact that the Web was a “side-effect” of the CERN’s scientific agenda, Ben Segal, another British researcher with CERN, stated, “Absolutely! And it was not 100% appreciated by the masters of CERN . . . that such a ‘side-effect’ with world
shaking consequences was born in the obscure bit of the organization that handled computing.”

Regardless of its obscure creation, the Web was truly visionary and phenomenally transformed the Internet by opening its window to the world through a medium that allowed point-and-click simplicity.

The second generation Web breakthrough was created by Mark Andreessen at the University of Illinois at Urbana-Champaign and called Mosaic. Introduced in January 1993, Mosaic was the first Web browser. Fundamentally, Mosaic allowed pictures to be displayed into a browser and, more importantly, Mosaic formed a compatible partnership with Unix, Windows, and Macintosh operating systems. Mark Pesce, contributing author for ZDNet, stated: “There are two ages of the Internet—before Mosaic and after. The combination of Tim Berners-Lee’s Web protocols, which provided connectivity, and Marc Andreesen’s browser, which provided a great interface, proved explosive.”

The success of Mosaic is primarily a result of its user friendly “face” to the Internet, in a “click-able” interface. Furthermore, Mosaic gained tremendous success and popularity because it was distributed for free, by Andreesen. As a result, Pesce related, “In twenty-four months, the Web [had] gone from being unknown to absolutely ubiquitous.” Thus has the innovation of technology for decades drastically transformed the Internet from its impersonal beginning, at the Department of Defense, to the forefront of the global Web with virtually unlimited capabilities and future.
EMERGING TECHNOLOGIES AND TOMORROW’S INTERNET

The historical evolution and critical developments of the Internet have been highlighted, and a look at tomorrow’s Internet will provide insight into the understanding of sales and use taxation of electronic commerce. In a sense, there are countless visions of the future Internet, yet they all concur that there will be a “Webvolution.” Microsoft, the global software developer, stated that “we see no limits to the potential we all might reach, because we see no limits to human imagination.” It is undeniable that tomorrow’s Internet will have three defining characteristics: smaller and alternative devices, wireless connectivity, and explosive speed.

The future Internet will extend beyond the unmanageable computer terminal and connect to everything from the dashboard of the car, to the toaster, and the grocery store. Obvious smaller Internet devices not only include next-generation cell phones, PDAs, tablet computers, and other portable devices, but future envisioned prototypes will encompass all aspects of our lives and will all be plugged into the Internet. Alan Boyle, contributing journalist for MSNBC, stated, “The Dutch government has been working on a plan to equip every car with wireless locator devices so that the owners can be charged a tax based on hour-by-hour usage of particular roads.” Carl Howe, principal analyst for Forrester Research, predicts that the future “isn’t about the $1,000 Pentium 9 processor. . . . This is a battle for the 1-cent chip that goes on every box of Cheerios [and] reorder themselves when they run out on the store shelf.” These visions for tomorrow’s Internet will connect smaller, portable devices and net-savvy chips to the world and lead to a whole new era of innovation, a transformation of the way business is conducted and the way we live.
The future wireless high-speed Internet is already emerging in smart phones, free-space optical networks based on laser light, and the popular high-speed wireless Internet connection, known as “Wi-fi.” Checking email, ordering a favorite book, or executing a stock purchase is well within reach while sitting at a Starbucks drinking a latte. The results of the future wireless network will have phenomenal social impacts from pole to pole, providing a global network to communities formerly excluded by the limitations of wire.

Bandwidth is defined as “a measurement of how much information can move from one location to another in a given amount of time” and in non-technical terms refers to the speed of the Internet connection. Currently, major advancements in bandwidth have been made possible with alternative connections, such as digital subscriber line (DSL) technology, cable services, and satellite technologies. However, tomorrow’s Internet, which appears on the distant horizon, is being developed by the National Research Consortium and is known as Internet2. Greg Wood, an Internet2 spokesperson, said that “sending a single stream of uncompressed high-definition digital television means pushing out 1.5 billions bits of information per second—about 30,000 times the capacity of your typical dial-up connection.” This speed and capacity are beyond the capabilities of the current Internet, but easily within the potential of the Internet2. Founding father of the Internet, Vinton Cerf, contends that Internet2 will extend common protocols and a wireless network to spacecraft and other planets. Undoubtedly, the future Internet will connect a global world at advanced speeds, defined only by human innovation.
The Internet's Global Network

The phenomenal growth rate of the Internet and the global community that it would span could hardly have been imagined at its early dawn. In 1994, Vic Sussman, a journalist for *U.S. News and World Report*, observed the Internet's growth rate was "starting to rival that of a bacteria." Without doubt, the growth and usage of the Internet in the last eight years have surpassed even these early predictions.

Globally, the Internet has expanded with surprising speed, transforming remote villages in Africa into marketplaces of the world. From its humble beginnings, the Internet increased from an estimated one million users in 1993 to a phenomenal 619 million estimated February 2003 (see Figure 2). This figure represents over 14 percent of the global population. Reasonable projections estimate that over one billion users, or one-sixth of the global population, will be connected to the Internet by the first decade of

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**Figure 2**
Global Internet Population

![Graph showing the growth of the global internet population from 1993 to 2005.](image)

the twenty-first century. Retrospectively, the growth of global Internet even exceeded the apparently optimistic projections. In 1999, it was projected that by the year 2000 over 300 million people would be online, yet the growth had expanded to an estimated 451 million users growing approximately 124 percent globally in one year. The Internet growth rate slowed to approximately 10 percent in 2002 largely due to the global economic downturn reducing technology spending. However, the future wireless network and transformation of technological devices will undoubtedly give rise to exponential global growth.

Regionally, the United States remains at the forefront of Internet usage, though losing ground with respect to the global population. In 1999, Karl Frieden reported that Canada and the United States represented 55.9 percent of the global Internet population. By September 2002, however, Canada and the United States’ share of global Internet

Figure 3
The Global Composition of Internet Usage - Total: 605.6 Million September 2002 (millions)

<table>
<thead>
<tr>
<th>Region</th>
<th>Usage (Millions)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asia/Pacific</td>
<td>187.24</td>
<td>31%</td>
</tr>
<tr>
<td>Europe</td>
<td>190.91</td>
<td>31%</td>
</tr>
<tr>
<td>Latin America</td>
<td>33.35</td>
<td>6%</td>
</tr>
<tr>
<td>Middle East</td>
<td>5.12</td>
<td>1%</td>
</tr>
<tr>
<td>Africa</td>
<td>6.31</td>
<td>1%</td>
</tr>
<tr>
<td>Canada &amp; U.S.</td>
<td>182.67</td>
<td>30%</td>
</tr>
</tbody>
</table>

population had slipped to 30 percent while the share of Internet users increased in Asia and Europe to over 30 percent (see Figure 3).

The United States’ percentage of global Internet population has declined respectively, yet the sheer magnitude and rapid growth still places the United States among the most technologically advanced countries in the world. Frieden stated that the number of households with Internet access in the United States expanded from 0.2 percent in 1993, to 14 percent in 1996 and to 37 percent based on the latest studies in 1999.27 By 2001, the Organization for Economic Cooperation and Development (OECD) reported that the number of households utilizing the Internet in the United States increased to over 50 percent.28 In the United States, as of December 2002, the estimated

Figure 4
The United States Internet Population

![Graph showing the increase in the United States Internet population from 1993 to 2005.]

Internet population was 168.13 million users or over 59 percent of the population (see Figure 4). The nation’s Internet population expanded by 3 percent in 2002, representing an increase of approximately 9.7 million new users (see Figure 4). Richard Goosey, International Chief of Measurement Science for Nielsen/NetRatings, stated, “Nearly 10 million people over the age of 16 gained Internet access in the U.S. between the end of 2001 and the end of 2002 . . . maintaining the nation’s status of highest Internet population.”

The Central Intelligence Agency (CIA) conservatively predicts that by 2005 Internet users in North America will exceed 230 million.

The number of Internet users and its rapid expansion can only be placed in proper perspective compared with other revolutionary technologies. The phenomenal growth of the Internet in the United States can be accurately revealed by comparing how long it took various new inventions to reach 25 percent of the population—or measured saturation rate. In the report “Going Digital,” Robert E. Litan and William A. Niskanen stated: “In [the United States] electricity, the automobile, and the airplane all took 50 years to reach that threshold; radio and television took about 25 years; personal computers and cellular phones took less than 15 years. Once it was opened up for commercial use, the Internet reached the 25 percent penetration threshold in . . . fewer than 10 years.”

The Internet—the unparalleled achievement in the late twentieth century—has truly expanded its global web and presents implications affecting the world’s masses on a personal, business, and economic level.
REDEFINING BUSINESS MODELS

The advent of the Internet and the phenomenal growth of users has unquestionably redefined traditional business models and provided additional complexities for the application of sales and use tax. The Internet is reshaping the conduct of business and the measure of success by the evolution of business models that extend far beyond remote selling. Business models are simply described as the way a firm capitalizes on its competencies and uses its resources to provide value to its customers. The new “eBusiness Model” is the approach that companies take to maximize competitive advantages, increase market exposure and increase customer value through Internet technologies. Emerging business models contain two broad components: business-centric and customer-centric.

Business-Centric Models

Business-centric models focus on utilizing Internet technologies to increase efficiencies and capitalize on competitive advantages internally and externally with partners in the business environment. Roslyn Doktor, a Vice President at McConnell International LLC, a global technology policy and management consulting firm in Washington, stated, “The greatest strength of the Internet is its ability to bring together people, governments and business and facilitate the flow of information among them.”

This integration and seamless transfer of information has characterized the new, evolving business models. The result is the maximization of competitive advantages by electronic integration of every aspect of business functions and the operating cycle.

Virtual companies are emerging, characterized by a consortium of companies building on each others’ strength and businesses to exploit opportunities through
technology. And this is all achieved through the electronic data integration between departments and among companies that provides a seamless flow of information and ultimate automation. Alan Greenspan, Chairman of the Federal Reserve Board, stated, “The newest innovations, which we label information technologies, have begun to alter the manner in which we do business and create value, often in ways not readily foreseeable even five years ago.” Internet technologies have unleashed a phenomenal wave of innovation, efficiency, and productivity by creating an integrated network of businesses at every point—not in the supply chain, not in the value chain, but in the “information chain.”

**Consumer-Centric Models**

The consumer-centric characteristic is a more evident component of emerging business models fashioned by the birth of Internet technologies. This aspect focuses on engaging and interacting with consumers by capitalizing on the phenomenal potential of the Internet. It has provided new opportunities for companies in content creation, packaging, distribution, value-added services, and support. At the same time, this technology has invented new distribution channels and enhanced traditional channels, while opening up a rural store in isolated regions to the marketplace of the world. Ultimately, the Internet has empowered consumers and has forced companies to respond by utilizing this unparalleled tool to transform the way they conduct business. Additionally, the Internet has fostered the unprecedented ability to redefine a company’s interaction with its customers. Companies have surpassed the once inhuman interface of the Internet and entered a new realm where digital profiles and data collection allow a company to track every virtual step shoppers take, what route they took, products they
viewed, items purchased, and if they are returning users. The consumer-centric component of emerging business models has three defining categories: customer gateways, digital storefronts, and digital stores.

Customer gateways are essentially companies providing virtual services or information to consumers over the Internet. Portals such as Yahoo! and auction sites such as eBay are defining examples of virtual gateways. The success of Yahoo! is evidenced by its virtual reach that encompasses over 237 million unique users in twenty-five countries and thirteen languages. eBay is another successful virtual gateway, and its global trading network on any one day has more than twelve million items listed. The company’s revolutionizing business model has justly received phenomenal success, and in 2002 alone, eBay members transacted $14.87 billion in gross merchandise sales. Customer gateways connect users to a virtual world where a wealth of information, abundant resources, and empowering capabilities are a click away.

Digital storefronts are often referred to as “clicks-and-mortar” business models where companies have both a physical and a virtual presence. Anne Stuart, author for CIO Magazine, stated, “[Clicks-and-mortar] signifies a monumental shift in thinking about how existing companies weave e-commerce into their business plans. They no longer think in terms of offline or online. It is offline and online. Bricks-and-clicks.” Barnes & Noble is an excellent example of a traditional retailer realizing the market access and potential of the new virtual marketplace. Although Barnes & Noble lost first-mover advantage to online competitor Amazon.com (Amazon), Barnes & Noble has set aggressive goals of becoming the Internet leader in the sales of books, music, and DVD/video. Additionally, Barnes & Noble has pursued a common Internet strategy,
known as entity isolation, by spinning off its online component to minimize, among other things, its liability exposure and to avoid nexus, or the responsibility to collect sales and use tax. Regardless of Barnes & Noble’s tax and legal motives, creating a digital storefront has increased its market access, and in 2001 the online store alone generated $404.6 million in sales. The online company thrived in 2001 with an increase of over four million new customers to bring its total unique customer base to over 11.2 million. “Clicks-and-mortar” companies are harnessing the capabilities of the Internet by creating digital storefronts to connect with their clients and increase competitive advantages. The consequences of this new business model and the accompanying strategy of entity isolation present many difficulties to the current sales and use tax system.

Digital stores provide the most perplexing challenge to existing sales and use tax legislation because of their “virtual elusiveness.” Amazon is the paramount example of a digital store that achieved sales over $3.12 billion in 2001 and served over twenty-five million customers around the world all through a digital marketplace and eight domestic and international warehouses. Unquestionably, Amazon’s innovative use of technology provides customers unparalleled selection and variety of books and other products. The company has built its remarkable history on two pillars: customer centric focus and product selection. The result of Amazon’s customer obsession has been unsurpassed success as Amazon received the highest rating of all Web retailers in the 2002 American Customer Satisfaction Index (ACSI) study by the University of Michigan. On a hundred point scale, Amazon received a score of eighty-eight, leading a performance surge and setting the bar of success for customer satisfaction. Amazon’s goal of offering the “Earth’s Biggest Selection” is largely characterized by success as it now offers over
forty-five thousand items through its virtual store.\textsuperscript{42} Digital stores, such as Amazon, are marking the transformation of new business models that characterize the global marketplace of the twenty-first century. Like digital storefronts, digital stores present many challenges to the current sales and use tax system, especially the determination of a substantial tax nexus.

Emerging technologies and the birth of the Internet have resulted in the evolution of traditional business models. Technologies have embraced business-centric and consumer-centric transformations. Chris Grejtak, Chief Marketing Officer of BroadVision Inc., noted, "The biggest problem is that the traditional [business] model imposes a strict way of doing business with customers, partners and employees that is costly to maintain."\textsuperscript{43} New successful business models, however, have been characterized by the need to be flexible and responsive to change. This key component underscores these emerging business models and is essential for survival in the new, dynamic environment. Brian Light, Chief Information Officer for Staples, Inc., stated, "We’d rather cannibalize ourselves than have someone else come in and do it."\textsuperscript{44} Fundamentally, companies have to evaluate the power that technologies have unleashed and reevaluate their view and relationship with their customers, employees, and business partners and competitors. Grejtak said, "Enterprises need to adopt an 'outside-in' perspective as opposed to the traditional, 'inside-out' viewpoint."\textsuperscript{45} The Internet has led to a transformation of business models and ultimately a redefinition of "business" in the twenty-first century. These changing business models have afforded great tax difficulties, especially the determination of a tax nexus, as the global, virtual business environment and electronic commerce have met the antiquated sales and use tax system.
A REVOLUTION AND THE RISING DIGITAL ECONOMY

Economic history is highlighted by phenomenal transforming revolutions. Robert J. Shapiro, Under Secretary of Commerce for Economic Affairs, stated, “Revolutions, by their nature, create new and unanticipated opportunities, challenges and risk for those caught up in them.”

The nineteenth and twentieth centuries witnessed the industrial revolution, which changed an agricultural economy into an industrial one and reshaped the geographical distribution of society. Undoubtedly, the defining mark of the late twentieth century and earlier twenty-first century is the digital revolution. Arguably, the digital revolution has transformed not only a fragmentation of world economies into a globally interlaced, digital economy, but has touched virtually every aspect of society. The historical creation and evolution of this digital revolution was studied previously. Quantitative analysis and measurement of the digital economy are the focus of this section, and, ideally, will provide the third dimension to the implications of this phenomenal revolution and the complexities it presents in forging sound sales and use tax policy.

The “new economy,” the digital economy, has exhibited tremendous growth in recent years. Fueling this growth is the increasing number of people with Internet access and the expanding technology infrastructure. As stated earlier in this thesis, the global Internet population was estimated at 619 million with the percentage of the United States households with Internet access estimated at 50 percent (see Figures 2 and 5). The advancement of infrastructure is one cause of growth in the digital economy which can be analyzed by the number of secure Internet servers per million. In an OECD study, the United States expanded secure servers from fewer than one hundred per million February
Figure 5
Households with Internet Access


Figure 6
Infrastructure Growth – Measured by the Number of New Secure Servers

1999 to over 330 per million January 2002 (see Figure 6).

The emerging digital economy has exceeded even previously optimistic estimations. With respect to employment, the industries using and producing information technology contributed over forty-six million jobs to the United States economy in 1996 (see Figure 7). Additionally, the average income for an information-technology-producing employee was almost fifty-three thousand dollars in 1997, compared to thirty thousand dollars for all private employees. By 2006, it is projected that information-technology-related employment will increase to over fifty-seven million and will account for almost half of the United States' workforce (see Figure 7).

Moreover, the information technology industry is the largest domestic industry. A broad perspective of the magnitude of the digital economy is highlighted by statistics compiled by the government, which reported that the information technology industry grew from 4.9 percent of gross domestic product in 1985 to 8.2 percent of gross domestic
product in 1998. This industry represented almost $700 billion in commerce in the United States and nearly $2 trillion on a worldwide basis. In terms of real economic growth, the information technology industry contributed 1.2 percent in 1998, over one-third of the total growth of real output for the overall economy over the last four years.

It was estimated that the technology sector alone would contribute $830 billion in revenues in 2000 to the United States economy, a 58 percent increase over 1999. More astonishing is the fact that the $830 billion projected revenues for 2000 from the technology sector was a 156 percent increase from 1998. The fact that one in every five dollars in United States revenue is generated from the Internet further highlights the importance and degree of the new digital economy.

Furthermore, the information technology industry, electronic commerce, and related industries have opened up a whole new wave of extraordinary productivity gains. The information economy produced revenues-per-employee in the amount of $64,827 for the second quarter of 2000 alone. This revenue-per-employee growth translates to an increase of 11.5 percent from the first quarter of 2000 and represents not only the amount but the percentage increase of productivity gains in this phenomenal sector and the digital economy as a whole. The digital economy is the product of the unparalleled technology revolution that has exploded in magnitude and has marked the emergence of a new, global economy.

The phenomenal growth and scale of the digital economy is astonishing, yet it is still in its infancy. This new economy consists of two main components: 1) telecommunication and information technology; and 2) electronic commerce. Telecommunication and information technology, the second facet of the digital economy,
Table 1
The Digital Economy

<table>
<thead>
<tr>
<th>Computer software</th>
<th>Internet access services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Movies</td>
<td>Magazines</td>
</tr>
<tr>
<td>Books</td>
<td>Electronic bill payment</td>
</tr>
<tr>
<td>Music albums</td>
<td>Stock trading</td>
</tr>
<tr>
<td>Financial transactions</td>
<td>Newspapers</td>
</tr>
<tr>
<td>Video conferencing</td>
<td>Games</td>
</tr>
<tr>
<td>Educational and training materials</td>
<td>Business databases</td>
</tr>
<tr>
<td>E-mail</td>
<td>Remote medical diagnosis</td>
</tr>
<tr>
<td>Information services</td>
<td>Remote repairs</td>
</tr>
<tr>
<td>Bulletin boards and chat rooms</td>
<td>Home banking</td>
</tr>
<tr>
<td>Telecommunications</td>
<td>Entertainment</td>
</tr>
</tbody>
</table>


refers to the information technology industries providing services, products, and infrastructure, which utilize or make electronic commerce possible. Electronic commerce generally refers to the utilization of the Internet, or some telecommunication network, for business processes. The molding of these two components has led to an economy that is witnessing a transformation of products and services to a digitized and intangible medium (see Table 1). The telecommunication and information technology was briefly analyzed previously. This industry is a major component of the digital economy, though less sensitive to the complexities of the sales and use tax structure. Therefore, further in-depth analysis of the telecommunication and information technology will not be pursued in this study. The electronic commerce facet of the digital economy proves the most perplexing aspect with respect to the sales and use tax system, and it is the subject under scrutiny in the succeeding analysis.
THE PHENOMENAL MAGNITUDE OF ELECTRONIC COMMERCE

This new millennium and the technological revolution mark the birth of a future where electronic commerce becomes commerce and the economy becomes the eEconomy. Measuring the magnitude of electronic commerce is further complicated by the conflicting definitions of exactly what constitutes electronic commerce. The United States Census Bureau proposed the following preliminary definition: “Electronic commerce is any transaction completed over a computer-mediated network that transfers ownership of, or rights to use, goods or services.” The OECD, however, developed two definitions of electronic commerce transactions and guidelines for their application. These two definitions are referred to as the broad definition and the narrow definition. According to the broad definition, “An electronic transaction is the sale or purchase of goods or services, whether between businesses, households, individuals, governments, and other public or private organizations, conducted over computer-mediated networks. The goods and services are ordered over those networks, but the payment and the ultimate delivery of the good or service may be conducted on or off-line.” The narrow classification developed by the OECD defined an “Internet transaction [as] the sale or purchase of goods or services, whether between businesses, households, individuals, governments, and other public or private organizations, conducted over the Internet. The goods and services are ordered over those networks, but the payment and the ultimate delivery of the good or service may be conducted on or off-line.” The favored definition and arguably most accurate in light of this study’s focus is the OECD’s broad definition which includes in more simple terms “any transaction that involves the exchange of goods and services by electronic means.”
To add further breadth and depth to the broad definition of electronic commerce, however, two complementary definitions are necessary. Electronic commerce is further categorized as direct or indirect. Direct electronic commerce is defined as electronic commerce that “involves goods and services that are both purchased and delivered by electronic or digital means.”  

Indirect electronic commerce “involves goods and services that are purchased by electronic means but delivered in tangible form by common carriers or some other traditional form of delivery.” These further categorizing definitions of electronic commerce are important considerations in analyzing the sales and use tax implications of electronic commerce.

The magnitude of electronic commerce in this digital era by any definition is astonishing. Electronic commerce is projected to reach almost $6.8 trillion worldwide by 2003 (see Figure 8). This represents a growth of over 70 percent from 2003. Domestically, the United States is projected to conduct almost $2.2 trillion in electronic commerce transactions in 2003. The extent of electronic commerce is expected to

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**Figure 8**
The United States and Global eCommerce Growth

![Bar Chart](chart.png)

increase by 45.8 percent to over $3.1 trillion in 2004. The discrepancy between worldwide and domestic growth of electronic commerce can be explained by the fact that the United States has experienced growth in technology infrastructure and electronic commerce earlier than other countries and is still expanding at an astonishing rate, though less dramatic relative to countries entering the development and utilization stage of technology. Consequently, countries around the globe are entering or experiencing the “hyper-growth” phases of technology, resulting in a phenomenal worldwide growth rate outpacing projected domestic growth of electronic commerce. The amazing magnitude of electronic commerce is realized by the fact that 2004 worldwide electronic commerce transactions will amount to 8.6 percent of total 2004 sales. The United States will have 47 percent of worldwide electronic commerce, and in 2004, electronic commerce will make up 13.3 percent of 2004 total domestic sales. Further analysis of the two components of electronic commerce, business-to-consumer and business-to-business, provides more insight necessary for the development of effective sales and use tax policy.

**Business-to-Consumer Electronic Commerce**

Business-to-consumer is the first component of electronic commerce and refers to any business or organization that sells its products or services to nonbusiness consumers. Notable business-to-consumer companies include Amazon and Dell Computer Corp. A Department of Commerce study reported that Dell Computer’s online computer sales in 1998 more than doubled and reached fourteen million dollars per day, accounting for 25 percent of the company’s total revenues. Business-to-consumer transactions extend far beyond remarkable “e-tailers.” This component of electronic commerce includes financial services, travel services, health care information and prescriptions, online
Figure 9
Estimated Quarterly U.S. Retail Sales: Total and E-commerce

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Retail E-commerce (in billions)</th>
<th>E-commerce as a % of total retail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q4 1999</td>
<td>5.4</td>
<td>0.7%</td>
</tr>
<tr>
<td>Q1 2000</td>
<td>6.5</td>
<td>0.9%</td>
</tr>
<tr>
<td>Q2 2000</td>
<td>8.1</td>
<td>1.1%</td>
</tr>
<tr>
<td>Q3 2000</td>
<td>9.2</td>
<td>1.3%</td>
</tr>
<tr>
<td>Q4 2000</td>
<td>10.9</td>
<td>1.5%</td>
</tr>
<tr>
<td>Q1 2001</td>
<td>12.3</td>
<td>1.4%</td>
</tr>
<tr>
<td>Q2 2001</td>
<td>13.2</td>
<td>1.3%</td>
</tr>
<tr>
<td>Q3 2001</td>
<td>14.0</td>
<td>1.1%</td>
</tr>
<tr>
<td>Q4 2001</td>
<td>14.8</td>
<td>0.9%</td>
</tr>
<tr>
<td>Q1 2002</td>
<td>15.2</td>
<td>0.8%</td>
</tr>
<tr>
<td>Q2 2002</td>
<td>15.9</td>
<td>0.7%</td>
</tr>
<tr>
<td>Q3 2002</td>
<td>16.1</td>
<td>0.7%</td>
</tr>
<tr>
<td>Q4 2002</td>
<td>16.8</td>
<td>0.7%</td>
</tr>
</tbody>
</table>


auctions, entertainment, media, and many other sectors. In fact, a study by Ernst & Young LLP estimated 63 percent of all business-to-consumer electronic commerce sales are intangible services, such as travel and financial services.65

Retail electronic commerce sales in fourth quarter 2002 were $14.3 billion (see Figure 9). This translated into a 28.2 percent increase from fourth quarter 2001 and 1.6 percent of total retail sales (see Figure 9). Forrester Research Inc., a research company that identifies and analyzes emerging trends in technology, predicted in 1999 that consumer electronic commerce in the United States would exceed $108 billion by 2003.66 Timothy J. Mullaney, contributing author for BusinessWeek, stated, “Despite recession, terrorism, and war, the number is expected to come close, at a projected $95 billion [for 2003].”67 As astounding as the current status and future of business-to-consumer electronic commerce seems, it represents less than 20 percent of total United States electronic commerce.
Unquestionably, the future of business-to-consumer electronic commerce is likely to accelerate. In the United States, over 58 percent of individuals used the Internet, but less than 23 percent ordered goods or services online (see Figure 10). Accordingly, in a study by Peppers and Rogers Group, business-to-consumer sales are projected to reach between $438 billion and $1.1 trillion by 2010 and represent between 10 and 24 percent of all sales in the United States.68

Business-to-consumer electronic commerce has achieved tremendous success and possesses a promising future because of the many advantages. The four paramount advantages for business-to-consumer purchases are convenience, selection, information, and price. The Internet has proven itself to be the virtual marketplace of the twenty-first century available twenty-four hours a day, seven days a week, at our finger tips, and in the comfort of our home. Furthermore, the Internet has been characterized by companies, such as Amazon, eBay, and other virtual marketplaces, that offer an extensive assortment

Figure 10
Percent of Individuals Using and Purchasing Over the Internet

and variety of products or services. Business-to-consumer commerce via the Internet has also provided large amounts of information on products and service. Because of the benefits of technology and electronic commerce, Internet companies can frequently price below traditional sellers. Karl Frieden stated: "the Internet enables manufacturers to avoid the use of retailers or other intermediaries and sell directly to the ultimate consumer. The Internet also has the potential for reducing transaction-processing costs for taking orders and billing. In addition, there is no need for Web retailers to maintain expensive inventories in retail outlets around the country. These factors all contribute to significant potential savings through E-commerce." Furthermore, Internet companies face increased competitive pressures to reduce prices because of the global network of competitors in the interconnected marketplace of the world.  

**Business-to-Business Electronic Commerce**

The second component of electronic commerce is business-to-business, which significantly exceeds the volume of business-to-consumer electronic commerce. Business-to-business electronic commerce describes businesses purchasing and selling goods or services from each other through the use of an electronic network. Elana Varon, Senior Editor for *CIO Magazine*, stated that "there's more to [business-to-business electronic commerce] than purchasing. It's evolved to encompass supply chain management as more companies outsource parts of their supply chain to their trading partners." Business, the business-to-business electronic commerce way, has allowed for many benefits including increased services offered to business customers, productivity and efficiencies, and an integrated network of business partners.

Business-to-business activity is dependent on Electronic Data Interchange (EDI)
and the Internet to purchase products electronically without human intervention. EDI is the primitive form of business-to-business activity, but it is generally more expensive because it requires private telecommunication networks. Furthermore, the inflexible, closed-end system has limited EDI merely to the transmission of purchase orders and invoices among existing contractual parties. Internet commerce, however, affords greater flexibility and less expense because it is based on an open system that can be accessed by customers and vendors. Business-to-business activity conducted over the Internet utilizes grammatical programming rules for handling data on the Web known as XML. XML has gained popularity for the increased variety of data transmissions it allows and because it was designed for open networks. Karl Frieden noted that “E-purchasing is part of a virtual value chain that is likely to transform the way in which businesses connect with each other. Internet commerce facilitates not only sales contracts but also other product information, inventory control, and customer service.” Business-to-business electronic commerce presents many benefits that have redefined affiliated business suppliers and customers into an integrated network of partners with unlimited synergies.

The volume of business-to-business electronic commerce is outstanding,

<table>
<thead>
<tr>
<th>Table 2</th>
<th>The Benefits of Business-to-Business Electronic Commerce</th>
</tr>
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<tbody>
<tr>
<td>• Cost reductions</td>
<td></td>
</tr>
<tr>
<td>• Adjusting more quickly to customer demand</td>
<td></td>
</tr>
<tr>
<td>• Managing inventory more efficiently</td>
<td></td>
</tr>
<tr>
<td>• Getting products to market faster</td>
<td></td>
</tr>
<tr>
<td>• Cutting the cost of paperwork</td>
<td></td>
</tr>
<tr>
<td>• Reining in improper purchases</td>
<td></td>
</tr>
<tr>
<td>• Obtaining lower prices on supplies</td>
<td></td>
</tr>
<tr>
<td>• Increased productivity</td>
<td></td>
</tr>
<tr>
<td>• Integration of affiliated partners</td>
<td></td>
</tr>
<tr>
<td>• Benefit of synergies</td>
<td></td>
</tr>
</tbody>
</table>

representing approximately 93 percent of all electronic commerce. Over $843 billion of business-to-business electronic commerce was conducted in the United States in 2002 with a projection of over $1.3 trillion by 2003 (see Figure 11). Timothy J. Mullaney, columnist for BusinessWeek, cited that “those stary-eyed projections in 1999 that had U.S. e-commerce between businesses reaching a staggering $1.3 by 2003 . . . were too low. Networked business-to-business transactions [in the United States] now stand at $2.4 trillion”

Another aspect of business-to-business electronic commerce is the increased productivity gains. The Brookings Institution projected that the productivity gains from electronic commerce would reach $250 billion a year additional inflow into the economy by 2005. Again, Mullaney stated, “With overall productivity running higher than expected last year, gains from businesses using the Net to sharpen forecasting, keep

Figure 11
Growth of Business-to-Business E-Commerce in the U.S.

Source: Karl Frieden, Cybertaxation (Chicago: CCH Incorporated, 2000), 38.
inventories lean, and communicate instantaneously with suppliers could reach $450 billion a year by 2005. Spread across the economy in lower prices, that would add $4,500 annually to the average U.S. household’s income.75

Business-to-business electronic commerce has reached staggering heights as businesses begin to understand the wave of benefits that accompany technological integration of partners. Considering that even the pessimistic expectations for business-to-business electronic commerce for 2003 represent only 9.4 percent of all business purchases from other businesses, the increased reliance of on the benefits of technology provides a great likelihood for hyper-growth and an even more phenomenal redefinition of business through electronic commerce.

Cyberspace is the unprecedented, global marketplace of the twenty-first century. Electronic commerce will undoubtedly captivate the very future of business by its unparalleled potential. Andrew S. Grove, founder of Intel Corporation, stated, “Everything we ever said about the Internet is happening.”76 What is happening is a transformation of business accompanied by a multitude of benefits for both businesses and consumers. Both forms of electronic commerce, business-to-consumer and business-to-business, are still in their infancy, but have exceeded optimistic expectations. Although business-to-business electronic commerce greatly exceeds the volume of business-to-consumer, it presents fewer sales and use tax compliance concerns than the latter arena. Therefore, the challenges that the sales and use tax systems present and the subsequent analysis in this thesis will focus on the business-to-consumer aspect of electronic commerce. The visions of electronic commerce present a future of e-business with unlimited potential, but challenged by the burdens of tax compliance.
**TAXATION OF ELECTRONIC COMMERCE FROM THE FEDERAL PERSPECTIVE**

The United States federal government is endowed with the authority to make and enforce laws governing the collective states. With this in mind, an analysis of the states’ sales and use taxation of electronic commerce would be incomplete without considering the implications of the applicable federal authority. Consequently, the following section will analyze executive directives, legislative regulations, judicial cases and the United States Constitution to the end of formulating a uniform and effective sales and use tax system at the state and local levels.

*Presidential Directive and Technology*

The Executive branch has focused on developing a response to the wave of technology and electronic commerce under the current framework of tax policy without the implementation of specific taxes or tariffs applied to the Internet and related activities. Then President William J. Clinton stated in his 1997 directive, "I direct the Secretary of the Treasury to work with the State and local governments and with foreign governments to achieve agreements that will ensure that no new taxes are imposed that discriminate against Internet commerce; that existing taxes should be applied in ways that avoid inconsistent national tax jurisdictions and double taxation; and that tax systems treat economically similar transactions equally, regardless of whether such transactions occur through electronic means or through more conventional channels of commerce."77 The new administration, under President George W. Bush, holds fast to this same vision that the future and growth of the Internet and technology should not be impeded by taxes. Upon signing the House of Representatives bill H.R. 1552, which extended the *Internet Tax Freedom Act*, he said, “The Internet is an innovative force that enables such
applications as distance learning and precision farming. Government must do its part to make access to these services affordable. It should not raise costs through additional taxation. Under both administrations, the presidential vision has greatly influenced the resulting legislation on electronic commerce and the taxation of the Internet.

The Great Tax Myth—The Internet Tax Freedom Act

The Executive perspective on electronic commerce and taxation highlights the same concern the United States Congress had that tax burdens would impede commerce and dampen the growth of technology. Title XI - Moratorium on Certain Taxes, more commonly referred to as the Internet Tax Freedom Act, was the forefront legislation passed by the United States Congress that particularly applied to the taxation of electronic commerce. The 105th Congress enacted the Internet Tax Freedom Act on October 1, 1998 and set it to expire October 1, 2001. The 108th Congress enacted H.R. 1552, the Internet Tax Nondiscrimination Act, and President Bush signed it into law November 28, 2001. This act effectively extended the Internet Tax Freedom Act through November 1, 2003. Considering the implications of the Internet Tax Freedom Act to electronic commerce and the sales and use tax system, its provisions must be analyzed.

The Internet Tax Freedom Act embodied three main provisions. The first two provisions are found in section 1101(a) of this act which asserts:

No State or political subdivision thereof shall impose any of the following taxes during the period beginning on October 1, 1998 and ending on November 1, 2003—(1) taxes on Internet access, unless such tax was generally imposed and actually enforced prior to October 1, 1998; and (2) multiple or discriminatory taxes on electronic commerce.
Section 1102(a) of the *Internet Tax Freedom Act* incorporates the third main aspect of this act and provides:

There is established a commission to be known as the Advisory Commission on Electronic Commerce. The Commission shall—(1) be composed of nineteen members appointed in accordance with subsection (b), including the chairperson who shall be selected by the members of the Commission from among themselves; and (2) conduct its business in accordance with the provisions of this title.\(^{80}\)

Because of the importance of these three provisions to the development of sales and use tax framework in the twenty-first century, they will be analyzed further in their entirety.

The first provision of the *Internet Tax Freedom Act* will be analyzed initially considering that it is the provision that directly impacts the sales and use tax system. An understanding of the language and definitions of this subsection is necessary to fully comprehend the intent of the United States Congress. Section 1001(e)(3)(D) states:

The term “Internet access services” means a service that enables users to access content, information, electronic mail, or other services offered over the Internet. . . . Such term does not include telecommunication services.\(^{81}\)

To further analyze the consequences of this subsection, the language “generally imposed and actually enforced” and its meaning must be understood. The definition is further expanded in section 1101(d) which asserts:

For purpose of this section, a tax has been generally imposed and actually enforced prior to October 1, 1998, if, before that date, the tax was authorized by statute and either—(1) a provider of Internet access services had a reasonable
opportunity to know by virtue of a rule or other public proclamation made by the appropriate administrative agency of the State or political subdivision thereof, that such agency has interpreted and applied such tax to Internet access services; or (2) a State or political subdivision thereof generally collected such tax on charges for Internet access. 

In other words, this first provision prohibits a state or political jurisdiction from enacting a new sales and use tax on the actual Internet access service unless it was imposed and enforced by the state prior to October 1, 1998. Consequently, states cannot impose a sales and use tax on Internet access provided by American Online or MSN unless it meets the exemption provided by section 1101(d) prior to October 1, 1998. This moratorium, however, does not preclude the imposition of sales or use taxes on other forms of electronic commerce delivered as final products to the ultimate customer.

The second provision impacts sales and use tax as well, but, unlike the first provision, it more directly applies to electronic commerce transactions. This section prohibits any state or political jurisdiction from imposing "multiple or discriminatory taxes on electronic commerce." Congress provided in section 1004(2)(A) that the term "discriminatory tax" generally includes:

Any tax imposed by a State or political subdivision thereof on electronic commerce that—(i) is not generally imposed and legally collectible by such State or such political subdivision on transactions involving similar property, goods, services, or information accomplished through other means; (ii) is not generally imposed and legally collectible at the same rate by such State or such political subdivision on transactions involving similar property, goods, services, or
information accomplished through other means, unless the rate is lower as part of a phase-out of the tax over not more than a five year period. (iii) imposes an obligation to collect or pay the tax on a different person or entity than in the case of transactions involving similar property, goods, services, or information accomplished through other means; (iv) establishes a classification of Internet access service providers or online service providers for purposes of establishing a higher tax rate to be imposed on such providers than the tax rate generally applied to providers of similar information services delivered through other means.\textsuperscript{83}

Additionally, section 1104(2)(B) relates to the definition of discriminatory tax in terms of jurisdictions and obligations to collect tax and includes:

Any tax imposed by a State or political subdivision thereof, if—(i) . . . the sole ability to access a site on a remote seller’s out-of-State computer server is considered a factor in determining a remote seller’s tax collection obligation; or (ii) a provider of Internet access service or online services is deemed to be the agent of a remote seller for determining tax collection obligations solely as a result of—(I) the display of a remote seller’s information or content on the out-of-State computer server . . . (II) the processing of orders through the out-of-State computer server\textsuperscript{84}

According to these provisions, discriminatory taxes including any additional taxes or specific taxes on electronic commerce are prohibited as well as any tax imposed because of an obligation determined by the remote seller’s use of an out-of-state computer server. For example, a state would be prohibited by this act from imposing sales and use tax on digitized software delivered by electronic means but exempt the same software delivered
by a traditional method. States are also prohibited by this statute from forcing a remote
seller conducting business over the Internet to collect sales or use tax unless it requires a
similar mail order vendor to collect the same tax.

In addition to prohibiting a “discriminatory tax,” the Internet Tax Freedom Act
prohibits taxing authorities from imposing a “multiple tax” on electronic commerce.
Section 1104(6) defines a “multiple tax” as follows:

Any tax that is imposed by one State or political subdivision thereof on the same
or essentially the same electronic commerce that is also subject to another tax
imposed by another State or political subdivision thereof (whether or not at the
same rate or on the same basis) without a credit (for example a resale exemption
certificate) for taxes paid in other jurisdictions.

Consequently, the Internet Tax Freedom Act requires a tax credit to eliminate multiple
taxes on the same good or service in order to avoid the double taxation of the said
transaction between jurisdictions. Prohibiting multiple or discriminatory taxes are the
primary provisions this statute affords online sellers.

The Advisory Commission on Electronic Commerce was created according to the
third main provision of this act. In general, the duty of the commission was to “conduct a
thorough study of Federal, State, and local, and international taxation and tariff treatment
of transactions using the Internet and Internet access and other comparable intrastate,
interstate, or international sales activities.” Furthermore, the Commission was to issue a
report on its findings and recommendations within eighteen months. Section 1103
declares that “No findings or recommendations shall be included in the report unless
agreed to by at least two-thirds of the members of the Commission.” As a result of this
provision and the fact that a two-thirds majority agreement was reached on but a few issues, the Commission was largely unsuccessful.

The *Internet Tax Freedom Act* effectively provided no resolution to the complexities of the sales and use taxation of electronic commerce. In fact, it has proved one of the most perplexing and misunderstood aspects of the taxation of electronic commerce. The myth is that the *Internet Tax Freedom Act* created a virtual tax haven where all goods and services sold online are tax free. Of course, this is hardly accurate. The implications of this act to electronic commerce and sales and use tax, aside from prohibiting sales and use tax of Internet access services, and preventing multiple and discriminatory taxes on electronic commerce, were minimal. The success of the Commission could be described as futile at best considering its agreement on only three official findings and recommendations. The *Internet Tax Freedom Act* did provide an outlet for Congress to express its declaration that the Internet should be free of foreign tariffs, trade barriers, and other restrictions. Lastly, this moratorium’s primary effect was to provide additional time for the study and analysis of the taxation of electronic commerce in order to achieve an effective and equitable tax policy that will not impede but foster the growth and future of technology.

**Constitutional Provisions and the Determination of a Tax Nexus**

Article VI of the United States Constitution provides that the Constitution, laws, and treaties of the United States are “the supreme Law of the Land.” This is often referred to as the Supremacy Clause. Therefore, it is imperative to analyze two provisions of the Untied States Constitution that directly impact the determination of sales and use tax nexus, and when the states can assert a tax obligation on the remote
seller. The importance of the Commerce Clause and the Due Process Clause can not be
understated because they have greatly influenced landmark sales and use tax cases, and,
ultimately, the application of the sales and use tax on electronic commerce.

The Fourteenth Amendment of the Constitution is often referred to as the Due
Process Clause. It provides in part that "No State shall make or enforce any law which
shall abridge the privileges or immunities of citizens of the United States; nor shall any
State deprive any person of life, liberty, or property, without due process of law; nor deny
to any person within its jurisdiction the equal protection of the laws." The Court held in
Miller Brothers Co. v. Maryland that "Due process requires some definite link, some
minimum connection, between a state and the person, property or transaction it seeks to
tax." The Due Process Clause presents significant implications for the taxation of
electronic commerce and ultimately provides a check on the states’ ability to impose a tax
obligation on remote sellers.

The second constitutional provision that is engrained in the Court’s key rulings on
tax nexus and of great importance in considering effective tax policy is the Commerce
Clause. Article I, Section 8, of the United States Constitution specifically provides
Congress the power “[t]o regulate Commerce with foreign Nations, and among the
several States, and with the Indian Tribes.” This provision affects business commerce
more than any other constitutional clause. Unlike the Due Process Clause, the Commerce
Clause does not explicitly restrict the authority of the states, but rather empowers
Congress with the authority to regulate commerce. For this reason, it is often referred to
as the “dormant Commerce Clause.” In Wardair Canada v. Florida Dept. of Revenue the
United States Supreme Court established that in applying the Commerce Clause the
courts must consider the purpose and "whether action taken by state or local authorities unduly threatens the values the Commerce Clause was intended to serve."\textsuperscript{90} Extended to the subject of sales and use tax and electronic commerce, the Commerce Clause is concerned with the potential burdens the mass complexities of tax laws and regulations place on interstate commerce. As a result, under the current taxing structure, the Commerce Clause is at the focal point of the Court’s rulings on establishing tax nexus and obligations as well as formulating sales and use tax policy.

\textit{Judicial Precedent and a Capstone Ruling}

Judicial rulings play a critical role in the development and evolution of the legal framework of the United States common law. Under the doctrine of \textit{stare decisis}, judges are compelled to follow legal precedent, referred to as binding authorities, established by the courts. Considering this, it is imperative to analyze and understand the implications of the famous sales and use tax case, \textit{Quill Corporation v. North Dakota}.

\textit{Quill Corporation} (Quill) was a mail-order company incorporated in Delaware. The company operated with offices and warehouses located in Illinois, California, and Georgia, but none within the confines of North Dakota. Likewise, the company did not have any employees working in North Dakota and minimal and inconsequential property holdings in the state. Quill, however, accumulated annual sales near one million dollars from three thousand customers in the state, and all orders were solicited through mailed catalogues and flyers. In 1987, North Dakota revised a statutory provision requiring a vendor to collect sales and use tax to include "every person who engaged in regular or systematic solicitation of a consumer market in the state."\textsuperscript{91} The state statute defined "regular or systematic solicitation to mean three or more advertisements within a twelve
month period."  Nonetheless, Quill refused to collect sales or use tax on its merchandise sold to North Dakota customers. Consequently, Quill’s refusal led to the state of North Dakota filing an action to require the company to pay taxes, interest, and penalties on the sales. The facts of the case, as presented above, resulted in Quill appealing to the United States Supreme Court claiming that North Dakota violated both the Due Process Clause and the Commerce Clause of the United States Constitution. The high Court granted Writ of Certiorari, which unfolded the most important ruling on sales and use tax.

Implications for the taxation of electronic commerce can be drawn from this ruling.

In Quill v. N. Dakota, the first issue related to whether North Dakota violated the Due Process Clause by requiring Quill to collect sales and use tax. The focal point of the Court’s ruling rested on a previous case decided in 1967, National Bellas Hess, Inc. v. Department of Revenue of Illinois. In this case, the United States Supreme Court declared that “the Court has never held that a State may impose the duty of use tax collection and payment upon a seller whose only connection with customers in the State is by common carrier or the United States mail.” In other words, the Court held in that case that some “minimum contact” was necessary for a state to impose an obligation to collect tax on a remote seller according to the Due Process Clause.

The Court addressed in Quill v. N. Dakota the legal precedent set by Bellas Hess v. Dept. of Revenue of Ill., relating to the “minimum contact” requirement and the Due Process Clause. The Court noted in Quill v. N. Dakota that “[t]he Due Process clause does not bar enforcement of the State’s use tax against Quill. This Court’s due process jurisprudence has evolved substantially since Bellas Hess, abandoning formalistic tests focused on a defendant’s presence within a State in favor of a more flexible inquiry into
whether a defendant’s contacts with the forum made it reasonable, in the context of the
federal system of Government, to require it to defend the suit in that state.”94

Consequently, the Supreme Court of the United States held that “to the extent that this
court’s decisions have indicated that the Clause requires a physical presence in a State,
they are overruled. In this case, Quill has purposefully directed its activities at North
Dakota residents, the magnitude of those contacts are more than sufficient for due process
purposes, and the tax is related to the benefits Quill receives from access to the State.”95

The Court construed that the requisite “minimum contact” did not require a “physical
presence,” as was cited in Bellas Hess v. Dept. of Revenue of Ill., but was sufficiently
satisfied by an “economic presence” which enabled the state of North Dakota to impose
the obligation of collecting and remitting the use tax without violating the Due Process
Clause of the United States Constitution.

The second issue in Quill v. N. Dakota the Court addressed related to the
Commerce Clause and the element of “substantial nexus.” Unlike the Due Process
Clause, the Commerce Clause and its interpretation is concerned with the state regulation
of commerce and its impact with the national economy. The Commerce Clause, as
analyzed previously, grants Congress encompassing power of regulating commerce
among the states. Furthermore, the Court is empowered with the authority to interpret the
extent and effect of the burden placed upon interstate commerce by the state regulation.

The implications of the Commerce Clause and the resulting ruling of the Supreme
Court of the United States in Quill v. N. Dakota again rested on legal precedent set by the
Court. In particular, the Court’s ruling relied heavily on two key cases. These two cases
will be analyzed in order of their structural components and relations rather than their
chronological occurrence.

The first crucial case that influenced the Court’s decision was *Complete Auto Transit, Inc. v. Brady*. Pursuant to this ruling, the Court devised a four-part test to guide subsequent questions relating state regulation and its conformity with the Commerce Clause. The test considers whether “the tax is applied to an activity with a substantial nexus with the taxing State, is fairly apportioned, does not discriminate against interstate commerce, and is fairly related to the services provided by the State.”

*Bellas Hess v. Dept. of Revenue of Ill.* was the second important case that guided the Court’s ruling in *Quill v. N. Dakota*. With respect to the Commerce Clause and its implications, *Bellas Hess v. Dept. of Revenue of Ill.* concerns the first test established in *Complete Auto v. Brady* and principally the “proposition that a vendor whose only contacts with the taxing State are by mail or common carrier lacks the ‘substantial nexus’ required by the Commerce Clause.” In determining the existence of a “substantial nexus” the Court has taken recourse in the “bright-line,” physical presence rule established in *Bellas Hess v. Dept. of Revenue of Ill.* The Court declared, “In sum, although in our cases subsequent to Bellas Hess and concerning other types of taxes we have not adopted a similar bright-line, physical-presence requirement, our reasoning in those cases does not compel that we now reject the rule that Bellas Hess established in the area of sales and use taxes.” Consequently, the legal precedent set by *Bellas Hess v. Dept. of Revenue of Ill.* requiring a physical presence, referred to as the “bright-line” test, in order to establish a “substantial nexus” was critical in the Court’s ruling in *Quill v. N. Dakota*.

In deciding the impacts of the Commerce Clause in *Quill v. N. Dakota*, the
Supreme Court of the United States applied the legal precedent and binding authority set by former Courts while considering the changing economic environment of the time. In applying the guidance of previous rulings, the Court declared that the precedent set by *Bellas Hess v. Dept. of Revenue of Ill.* requiring a physical presence was “good law” and, therefore, required in determining a “substantial nexus” and tax obligation of remote sellers in the area of sales and use taxes. Therefore, the Supreme Court of the United States ruled that “The State’s enforcement of the use tax against Quill places an unconstitutional burden on interstate commerce” in violation of the Commerce Clause.99

There seems to be an apparent paradox in this ruling since North Dakota had authority to enforce Quill to collect the sales and use tax because the “minimum contact” requirement of the Due Process Clause was established, but at the same time was prevented from enforcing the tax obligation because the “substantial nexus” requirement of the Commerce Clause was unconstitutional. The Court recognized this argument and clearly addressed the distinction between these two constitutional provisions. The Supreme Court of the United States asserted: “Due process concerns the fundamental fairness of governmental activity, and the touchstone of due process nexus analysis is often identified as ‘notice’ or ‘fair warning.’ In contrast, the Commerce Clause and its nexus requirement are informed by structural concerns about the effects of the state regulation on the national economy.”100 In its ruling, the Court noted that a remote seller “may have the ‘minimum contacts’ with a taxing State as required by the Due Process Clause and yet lack the ‘substantial nexus’ with the State required by the Commerce Clause.”101 With this consideration, the Court reconciled the apparent conflict between the “minimum contact” of the Due Process Clause and the “substantial nexus”
requirement of the Commerce Clause because of their distinct constitutional concerns and policies. Although North Dakota exercised appropriate jurisdiction consistent with the Due Process Clause, the Supreme Court of the United States ultimately barred the state’s enforcement of the sales and use tax obligation on Quill because of the undue burden it placed on interstate commerce and the threat it placed on the national economy.

The judgment in Quill v. N. Dakota fundamentally rested on the Commerce Clause and the fact that enforcement of a tax obligation without the requisite “substantial nexus” was constructed as a significant burden on interstate commerce. The Supreme Court of the United States declared that “because Congress is free to disagree with the Supreme Court’s evaluation of the burdens that use taxes impose on interstate commerce, Congress remained free to decide whether, when, and to what extent states may burden interstate mail-order concerns with a duty to collect use tax.” With over thirty thousand potential taxing jurisdictions, the Court perceived that a substantial burden could be placed on commerce by imposing a duty to collect tax on remote sellers. However, the Court also noted that the Constitution affords Congress the right to regulate interstate commerce and Congress could create necessary legislation to require the enforcement of the tax obligation on remote sellers lacking a physical presence within the state jurisdiction without violating the Commerce Clause. The Court closed its ruling by encouraging Congress to take an active role in clarifying the issue relating to the duty of remote sellers to collect sales and use tax and concluded with the suggestion, “In this situation, it may be that ‘the better part of both wisdom and valor is to respect the judgment of the other branches of the Government.’”

The Supreme Court’s ruling in Quill v. N. Dakota presented significant
implications to the sales and use taxation of electronic commerce. An intricate part of this case addressed the future concern of remote electronic commerce activities. In this case, Quill licensed computer software to North Dakota customers that allowed them to check current inventory levels and prices, and to place an order directly with the company. The Supreme Court of the United States conceded “that the existence in North Dakota of a few floppy diskettes to which Quill holds title seems a slender thread upon which to base nexus. . . . We therefore conclude that Quill’s licensing of software in this case does not meet the ‘substantial nexus’ requirement of the Commerce Clause.”

Under the Quill v. N. Dakota ruling, a company does not have an obligation to collect sales and use tax unless it has a physical presence in the state that seeks to enforce the tax. Karl Frieden acknowledged, “Under the traditional physical presence standard for nexus, a vendor with employees, equipment or other property in the state will have sufficient nexus for sales and use tax purposes.” According to the Supreme Court’s ruling in Quill v. N. Dakota, a nexus could not be established by a de minimis contact. The Court noted that licensed software allowing customers to remotely place orders directly with the out-of-state vendor did not create a constitutional nexus because it constituted the “slightest presence.” The legal precedent set by the Court’s decision in Quill v. N. Dakota relating to remote sellers has been appropriately applied to electronic commerce and Internet transactions to avoid a remote seller’s responsibility to collect sales and use tax in states where it has a de minimis presence. Frieden acknowledged that the difficulty presented with the application of the de minimis rule is that “it is unclear how much physical presence of either employees, representatives, or property will exceed the constitutionally permissible threshold and thus impose a filing responsibility on an
out-of-state vendor."106 This vagueness is further compounded by the lack of state
guidance on *de minimis* presence. The lack of clear and consistent direction ultimately
creates the underlying complexity with the convergence of the sales and use tax system
and electronic commerce.
SALES AND USE TAX ENVIRONMENT

The effects of electronic commerce on the sales and use tax system extend beyond the states impacting cities, counties, transit authorities, and other special purpose jurisdictions. The number of potential taxing jurisdictions in the United States exceeds thirty thousand. There are an estimated 7,458 taxing jurisdictions including forty-five states and the District of Columbia, 4,696 cities, 1,603 counties, and 1,113 other taxing jurisdictions (see Table 3). Only the states Alaska, Delaware, Montana, New Hampshire, and Oregon do not have a state level tax. The convergence of electronic commerce with the mass of taxing jurisdictions has not only presented overwhelming difficulties to Internet and remote selling transactions, but presents implications for the whole state and local tax fabric.

The sales and use tax system has been the critical point of concern with the emergence of electronic commerce. States generate a significant share of tax revenues from sales and use tax. In 2002, the states collected over $178 billion on general sales and use tax and over $82 billion on selective sales tax on products such as alcohol, tobacco, and motor fuel. Combined general and selective sales tax results in a per capita sales and use tax of $906.74. In addition, general sales and use tax revenues represent 34 percent of total tax revenues (see Figure 12). If the selective sales tax is included, sales tax represents nearly 50 percent of all tax revenues generated by the states (see Figure 12). Furthermore, it is estimated that local sales and use tax accounts for 11 percent of local tax revenues.

The tremendous state and local reliance on sales and use tax revenues is being strained by electronic commerce in the digital era. The digital transformation of products
### Table 3
Number of Taxing Jurisdictions for Sales and Use Tax, 1999

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Alaska, Delaware, Montana, New Hampshire, Oregon; States without a sales tax

and services, and the avoidance or evasion of tax obligations in an elusive digital world, are two primary factors of electronic commerce affecting state sales and use tax revenues. The transformation of traditional services and tangible personal property to a digitized format more evasive to the current tax system is a source of lost revenues to the states. Furthermore, state tax revenues are being impaired by the sales and use tax revenues not collected because of the provisions afforded by Quill v. North Dakota to remote sellers without a physical presence.

Projections of lost sales and use tax revenues on electronic commerce are astonishing even with conservative assumptions. In a 1998 study by Ernst & Young, LLP, it was conservatively estimated that less than $170 million were lost on sales and use tax due to Internet transactions and the increase in remote selling. The General Account Office (GAO) estimated that state and local sales and use tax losses for all Internet sales were between $300 million and $3.8 billion. The GAO projected loss for
2003 is between $1 billion and $12.4 billion or reaching 5 percent of projected sales tax revenues. The critical sales and use tax revenues lost on electronic commerce and Internet sales present themselves at a crucial period when states are surmounting record deficits threatening the very future of conventional taxing mechanisms.

The combination of the mass number of sales and use taxing jurisdictions and lost revenues pressures has presented tremendous difficulties on electronic commerce and future tax policy. As can be imagined with the sheer number of taxing jurisdictions having an invested interest in revenue losses due to electronic commerce, there are numerous interests and perspectives that conflict to add further difficulties in formulating effective sales and use tax policy without placing a burden on interstate commerce and damping the future of technology. At the city, county, and state level, each layer adds a burden of difficulty to electronic commerce and the conduct of business, as well as surmounting a multitude of complexity in the development of acceptable sales and use tax policy. This thesis, however, will continue by limiting the primary focus to the state level sales and use tax system as this layer demonstrates the highest degree of reliance on sales and use tax revenues and is the most crucial matter in the taxation of electronic commerce.
A COMPARATIVE ANALYSIS OF THE SALES AND USE TAX SYSTEM

A comparative analysis of the sales and use tax systems of the states of Hawaii and Texas will provide a snapshot view of this tax system at the state level and insight into developing tax policy. These two states both demonstrate significant reliance on the tax revenues generated from the sales and use tax systems. For fiscal year 2002, general excise and use tax represented 47 percent of Hawaii's total tax revenues (see Figure 13). Similarly, Texas received over 55 percent of all tax revenues from general sales and use tax at the state level alone in 2002 (see Figure 14). Hawaii's and Texas' similar dependence on the sales and use tax system, but the divergence of composition and structure, provides an ideal model representative of the complexities of the sales and use tax system for a comparative and contrasting analysis in order to develop effective and efficient tax policy.

STRUCTURAL COMPARISON OF HAWAII AND TEXAS

Hawaii and Texas both are dependent on the revenues generated from the sales and use tax system, though they are remarkably dissimilar in the structural makeup as is common among sales and use taxing jurisdictions. Hawaii only has one tax level, assessed at the state layer (see Table 3). Texas, on the other hand, has a total of 1,357 taxing jurisdictions, more than any other state (see Table 3). The state's jurisdictions consist of one state level tax, 118 taxing counties, 1,193 taxing cities, and 45 transit authorities and special purpose districts imposing a sales or use tax (see Table 3). Consequently, any seller with a "substantial nexus" in Texas must generally collect tax in all local taxing jurisdictions of the respective sale. The impact of the multi-level taxing jurisdictions, such as Texas, on the sales and use taxation of electronic commerce is
Figure 13
Hawaii Tax Composition – Revenue by Sources


Figure 14
Texas Tax Composition – Revenue by Sources

tremendous, adding further complexity. For purposes of this study, an awareness of the existence and basic implications of the local system is the limited extent in the consideration of tax policy and the following analysis will concentrate on the state level sales and use tax.

**Sales and Use Tax Fundamentals**

The sales tax, the use tax, and the sales tax credit are the three principal aspects of the respective state tax systems. A sales tax is generally a tax imposed on gross sales receipt of non-exempt tangible personal property and specifically taxable services. A use tax is the complementary system to the sales tax. It, however, is imposed on the consumption or use of non-exempt tangible personal property and specifically taxable services that were exempted from the sales tax. Such cases in which the use tax would be imposed are if the seller is outside the buyer’s state, seller lacked the requisite “substantial nexus” and obligation to collect the sales or use tax, the property was purchased or service performed in a taxing jurisdiction other than where it was later used or consumed, among other reasons. The premise of the use tax is to “collect taxes on sales which do not take place in their state [and] the tax is meant to insure that all purchases are taxed, whether purchased locally or from out of state sellers.”

The use tax is typically one of the most misunderstood aspects of the sales and use tax system. However, the use tax is also the most important aspect since it generally is applicable to remote sellers and electronic commerce. The final foundational pillar of the sales and use tax system is the sales tax credit. In certain circumstances, tangible personal property or services may have been subject to sales tax in one state, but used in another state and subject to this state’s use tax. To minimize the potential of double taxation, or “multiple
taxes" as defined in the *Internet Tax Freedom Act*, the sales tax credit generally reduces the use tax in the respective state of consumption or use. The credit is usually the lesser of the amount of sales tax paid or the use tax imposed. The basics of sales and use tax provide the necessary overview of the tax system, and these three main aspects of the tax systems for the states of Hawaii and Texas will be comparatively analyzed in their respective turn in the proceeding study.

The imposition of the sales tax in Texas, as provided in the *Texas Limited Sales, Excise and Use Tax Code*, appears straightforward at first. Section 151.051(a) states, "A tax is imposed on each sale of a taxable item in this state."\(^{114}\) It is important to determine who legally incurs the tax burden. Section 151.052 of the *Texas Tax Code* provides: "A seller who makes a sale subject to the sales tax imposed by this chapter shall add the amount of the tax to the sales price, and when the amount of the tax is added: (1) it becomes a part of the sales price; (2) it is a debt of the purchaser to the seller until paid; and (3) if unpaid, it is recoverable at law in the same manner as the original sales price."\(^{115}\) Accordingly, the Texas sales tax burden is legally imposed on the purchaser. The Texas statute relating to the imposition of the sales tax seems clear, but the simple language is overwhelmed with complexity that is covered in more detail in further sections.

Hawaii's sales and use tax system includes a general excise tax in lieu of a sales tax. Section 237-13 of the *Hawaii Revised Statutes* states: "There is hereby levied and shall be assessed and collected annually privilege taxes against persons on account of their business and other activities in the State measured by the application of rates against values of products, gross proceeds of sales, or gross income, whichever is specified."\(^{116}\)
The general excise tax is typically applied to the gross receipts, rather than the retail sale, from doing business in Hawaii. Furthermore, in contrast to the Texas sales tax regime, the Hawaii general excise tax burden and liability are imposed on the seller.

The corresponding element of the sales tax is the use tax. Section 151.101 of the Texas Tax Code declares, “A tax is imposed on the storage, use, or other consumption in this state of a taxable item purchased from a retailer for storage, use, or other consumption in this state.” To avoid the imposition of both the Texas sales tax and use tax, section 151.303(a) provides that “the storage, use, or other consumption of a taxable item the sale of which is subject to the sales tax is exempted from the use tax imposed by Subchapter D of this chapter.” Likewise, section 151.303(b) avoids the double assessment of the use tax “on which the person storing, using, or consuming the item has paid a use tax” previously. The complexities of the language and application of the use tax in Texas will be further analyzed in greater detail. Again, the importance of understanding the liability of the tax burden is essential to understanding the sales and use tax framework. Similar to the Texas sales tax, section 151.102 provides that “the person storing, using, or consuming a taxable item in this state is liable for the tax imposed. . . . [T]he liability continues until the tax is paid to the state.” Therefore, the tax burden and liability of the use tax in Texas is imposed on the purchaser.

Complementing the general excise tax and to minimize the disadvantage of domestic companies, Hawaii imposes a use tax that is generally defined as “an excise tax on the use in the State of tangible personal property imported or purchased from an unlicensed seller, for use in Hawaii.” Section 238-2 of the Hawaii Revised Statutes states, “There is hereby levied an excise tax on the use in this State of tangible personal
property which is imported, or purchased from an unlicensed seller, for use in this State."\textsuperscript{122} Furthermore, section 238-2.3 provides, "There is hereby levied an excise tax on the value of services or contracting as defined in section 237-6 that are performed by an unlicensed seller at a point outside the state and imported or purchased for use in this State."\textsuperscript{123} In more general terms, Hawaii imposes a use tax on tangible personal property and services, as provided in the statutes, purchased outside of the state and imported for use or consumption. The tax burden and liability of the Hawaii use tax are imposed on the purchaser and importer according to the provision that "The tax imposed by this chapter shall accrue when the property [service or contracting] is acquired by the importer or purchaser."\textsuperscript{124} Purchaser is defined by statute as "any person purchasing property, service, or contracting," and importer, defined as "any person importing property, services, or contracting."\textsuperscript{125}

Texas, like most states, has a sales tax credit provision in the statutes to minimize double taxation. Section 3.338(b)(1) of the Texas Administrative Code provides that "Texas will allow as a credit against Texas use tax due any combined amounts of legally imposed sales or use taxes paid on the same property to another state or any subdivision of another state."\textsuperscript{126} However, with respect to Hawaii’s general excise tax, "a credit against the Texas use tax will not be allowed for any gross receipts tax imposed on retailers in another state, which tax is not customarily separated from the sales price of taxable items and is not passed on directly to customers as tax."\textsuperscript{127} The sales tax credit is applied first against local use tax and then the remaining, up to the amount of use tax, is applied at the state level.

The sales tax credit is also incorporated in the statutes of the state of Hawaii.
Section 238-3(i) of the Hawaii Revised Statutes states, “Each taxpayer liable for the tax imposed by this chapter on tangible personal property, services, or contracting shall be entitled to full credit for the combined amount or amounts of legally imposed sales or use taxes paid by the taxpayer with respect to the same transaction and property, services, or contracting to another state and any subdivision thereof, but such credit shall not exceed the amount of use tax imposed under this chapter on account of the transaction and property, services, or contracting.” The credit is applied to individual items or transactions and, therefore, the sales tax credit may only be used to offset the use tax applied to the same item or transaction. The maximum sales tax credit available is the lesser of the sales tax paid on the purchased or imported item or the Hawaii use tax imposed. According to the use tax statutes, the effective use tax on an item will generally be the higher of the sales tax paid to another jurisdiction or the use tax imposed in Hawaii.

The similarities and contrasting differences between the fundamental definitions and framework of the sales and use tax system in Texas and Hawaii are quite evident. Texas imposes a sales or use tax on the applicable transactions, and the tax burden and liability rest on the purchaser or consumer. Hawaii, however, imposes a general excise tax on the seller in lieu of the sales tax. The Hawaii use tax generally applies to all transactions that escape the general excise tax to minimize the competitive disadvantage of local sellers. The use tax, like Texas' use tax, is the legal responsibility and expense of the importer or purchaser. Both states allow a sales tax credit to minimize the possibility of multiple taxes imposed on the same underlying transaction. The use tax is most applicable and of most concern with respect to the sales and use tax system and electronic
commerce because most sales transactions made by online sellers occur outside of their state taxing jurisdiction. This is not to imply that the sales tax, at all levels of taxation, does not present compelling implications to developing a comprehensive sales and use tax policy for electronic commerce. It certainly does. However, because the use tax is most applicable to remote sellers and the taxation of electronic commerce, the topic of this thesis, it will be the primary component of further analysis. A concise and thorough examination of the use tax system, which more directly impacts electronic commerce transactions, will prove invaluable in the development of tax policy for the twenty-first century.

The Use Tax

The previous examination presented, on a limited basis, the primary aspects of the sales and use tax system. There are, of course, overwhelming complexities relating to the above analysis and cited tax statutes. The primary aspects of the use tax and its application and complexities will be analyzed in turn in this and subsequent sections. The issue of analysis in this section is the comparison of the related use tax rates in Hawaii and Texas and their application.

The Texas state level use tax, as provided in section 151.101(b), is the same rate as the sales tax. Accordingly, the use tax percentage “is 6-1/4 percent of the sales price of the taxable item.”\(^{129}\) The term “sales price” may seem quite clear, but is further complexity added to the imposition of the use tax. Section 151.007 defines “sales price” or “receipts” to mean:

(a) The total amount for which a taxable item is sold, leased, or rented, valued in money. . . . (b) The total amount for which a taxable item is sold, leased, or rented
includes a service that is a part of the sale and the amount of credit given to the purchaser by the seller. . . (c) ‘Sales price’ or ‘receipts’ does not include [(1) cash discounts allowed on the sale; (2) the amount charged for tangible personal property returned by a customer if the total amount charged is refunded by cash or credit; (3) a refund of the charges for the performance of a taxable service. . . ]

(d) ‘Sales price’ or ‘receipts’ of item sold as edible products for human consumption through the use or operation of a money-operated vending machine is 50 percent of the total gross receipt of the vendor for sales of those items except for sales of soft drinks and candy, for which the ‘sales price’ or ‘receipts’ are the total gross receipts from those sales. . . (e) the sales price of membership in a private club or organization consists of the dues, fees, and other charges and assessments, including initiation fees, required for membership or a special privilege, status, or membership classification in the club or organization.130

Without even considering the range of taxable property or services, the complexity of determining the “sales price” to multiply the use tax rate by is evident. Additionally, the 1,356 local taxing authorities have the authority to impose a tax, which varies with the taxing authority and jurisdiction, not to exceed a combined use tax rate of 8-1/4 percent (see Table 4). The combined complexities of determining the total use tax rate and the taxable sales price unique to the Texas Tax Code provide an overwhelming burden upon remote sellers and electronic interstate commerce.

Contrasting the state of Texas, Hawaii has two applicable state level use tax rates. The first category includes “tangible personal property which will be: 1) sold at the retail level, 2) leased or rented, 3) incorporated by a manufacturer into a finished or saleable
Table 4
Texas Sales and Use Tax Rates

- State - 6 1/4%
- City - 1/4% - 2%, depending on local rate.
- County - 1/2% - 1%, depending on local rate.
- MTA/CTD - 1/4% - 1%, depending on local rate.
- Special Purpose Districts - 1/8% - 1%, depending on local rate.


product in such a form that remains perceptible to the senses and which subsequently is sold at the retail level, or 4) incorporated by a contractor into a finished work or project in such a form that it remains perceptible to the senses.” Section 238-2(2), and the complementary section 238-2.3 relating to services, provide that for all imported or purchased transactions in this category “the tax shall be one-half of one percent of the purchase price of the property [services or contracting].” Applicable to taxable transactions not in this first category, sections 238-2 and 238-2.3 provide that the use tax is “in all other cases, four percent of the value of such property [services or contracting].” The use tax is applied to the “purchase price,” which is defined as “the total amount for which tangible personal property, services, or contracting are purchased, valued in money, whether paid in money or otherwise, and wheresoever paid; provided that cash discounts allowed and taken on the sales shall not be included.” Section 238-3 of the Hawaii Revised Statutes generally provides that use tax will not apply to products or services that the general excise tax applied to nor to products or services on which the use tax was previously paid. The inherent concern presented by Hawaii’s multiple use tax rates is that it requires a remote seller to determine the purchaser’s intention, making complete automation of Internet sales difficult.
The analysis of the use tax and the general application for Texas and Hawaii highlights the complexity and disparity between two states that are common among all states. Texas has one rate at the state level, but the problem is presented in determining the "sales price" and the intended purpose of the taxable item. Hawaii, on the other hand, has two use tax rates, and the first difficulty is determining the purchase's end purpose of the product or service and which rate to apply to the sales transaction. There is little consisting among states and this is further complicated by multiple rates for local jurisdictions (see Figure 15). Coincidentally, the average combined tax rate for all states equals Texas’ state level tax of 6-1/4 percent. The previous analysis has been limited to the fundamental differences between the use tax laws of Texas and Hawaii as well as evaluating the use tax rates in the respective states and the general application. The ensuing analysis will focus on what products and services are taxable and the similarities and differences that exist between two states and magnified among the other states.

Figure 15
State Sales Tax Rates – Combined Average Local Rates

imposing a sales and use tax.

Comparison of the States' Tax Base

The complexity presented by use tax and electronic commerce is not limited to multiple rates and varying application to the sales price, but extends to the tax base in the respective states. The tax base refers to the range of taxable products and services within the state or taxing jurisdiction. There are large variances among states of the taxable products and services, depending on the reliance on the sales and use tax revenue and the degree of fiscal policy exercised by the taxing jurisdiction. Generally, all "tangible personal property is taxable unless exempted by statute. Services, however, are generally non taxable unless specifically taxed by statute. A comparative analysis of Texas' tax base and Hawaii's tax base will provide insight into the inherent complexities that are representative of the state sales and use tax system.

Texas imposes 6-1/4 percent use tax on a "taxable item." Section 151.010 of the Texas Tax Code states that a "Taxable item" means tangible personal property and taxable services. Except as otherwise provided by this chapter, the sale or use of a taxable item in electronic form instead of on physical media does not alter the item's tax status."136 Section 151.009 defines "tangible personal property" as "personal property that can be seen, weighed, measured, felt, or touched or that is perceptible to the senses in any other manner, and, for the purposes of this chapter, the term includes a computer program and a telephone prepaid calling card."137

Texas invokes a broad definition of tangible personal property. Furthermore, Texas incorporated a clause that specifically includes a computer program under the traditional definition of tangible personal property. A computer program is defined by
section 151.0031 to mean "a series of instructions that are coded for acceptance or use by a computer system and that are designed to permit the computer system to process data and provide results and information. The series of instructions may be contained in or on magnetic tapes, punch cards, printed instructions or other tangible or electronic media." The purpose of this specific clause in the Texas Tax Code was to clearly define as taxable computer programs delivered by electronic means that did not clearly fit into the definition of information services and telecommunication services, or the traditional definition of tangible personal property. Although computer programs lack the typical definitive trait of tangible personal property, this statute had recourse to the fact that computer programs must be stored on a tangible media and, therefore, are classified as taxable tangible personal property.

Additionally, Texas has exempted by statute a number of products from use tax adding further complexity to the determination of tax liability for remote sellers utilizing Internet technologies. For example, Texas exempts from both sales and use tax certain health care supplies. Accordingly section 151.313 specifies the exempted items which include a drug or medicine, insulin, a hypodermic syringe, corrective lenses and other medical devices. As an example of the complexity, section 151.313(b) exempts from use tax specified items "used by a person who is deaf to enable the person to function more independently." Likewise, section 151.313(a)(1) exempts from tax "each of the following items if purchased for use by the blind to enable them to function more independently: a slate and stylus, print enlarger, light probe, magnifier, white cane, talking clock, large print terminal, talking terminal, or harness for guide dog." The complexities presented to electronic commerce and remote sellers in this one example of
exempted tangible personal property are clearly evident. The seller requires knowledge of the medical condition of the purchaser in order to determine if the item, possible adaptive computer software or a dog harness, is tax exempt. Not only does this provision provide a complexity to electronic commerce but it challenges the privacy of a disabled person resulting in a compromise of the very effectiveness and end result that this provision hoped to foster. A selective list of exempted tangible personal property in Texas is exhibited in Table 5.

Texas, like the majority of states, determines the taxability of services by inclusion according to specifically listed services in the statutes. The *Texas Tax Code* provides that information services are subject to sales or use tax (see Table 6 for a list of taxable services). Information services are defined by section 151.0038 to mean "furnishing general or specialized news or other current information, including financial information, unless furnished to: (A) a newspaper or to a radio or television station licensed by the Federal Communications Commission; or (B) a member of the homeowners association of a residential subdivision or condominium development, and is furnished by the association or on behalf of the association; or (2) electronic data retrieval or research." Although included as taxable services, section 151.351 provides, "There is exempted from taxes imposed by this chapter 20 percent of the value of information services and data processing services." With the advent of the technology age, information services are being transformed to a digitized form which has presented great difficulty to the sales and use taxation. Evident by the statutory provisions regarding information services, the *Texas Tax Code* is overwhelmed with technical definitions, exemptions, and statutory provisions that accumulate to form a
Table 5
Texas – Tangible Personal Property Exemptions

- Property purchased for improvement of realty for non profit organization
- Oil, sulphur, motor fuel and special fuel, and cement
- Motor vehicles, trailers, and seimitrailers
- Non motorized boat or outboard motor
- Water
- Property that will become an ingredient or component of a manufactured product
- Non returnable containers when sold without contents
- Returnable containers when sold with contents
- Meals and food products serviced by public or private school and certain other organizations
- Food and food products for human consumption
- Drugs and medicine prescribed for human and animal use
- Horses, mules, and work animals
- Feed for ranch and farm animals, and seed and annual plants
- Fertilizers, fungicides, herbicides, defoliants, desiccants, and insecticides
- Machinery or equipment used for farms, ranches, road maintenance, and pollution control.
- Property to be installed as a component of an underground irrigation system
- Commercial ships or vessels of eight tons load displacement
- Aircraft sold to carriers
- Gas and electricity
- Rolling stock and locomotives
- Periodicals and writings published or distributed by a non profit organization.
- Property sold for offshore exploration and production outside Texas
- Property made or assembled by a person aged 65 or older part of a fund-raising drive
- Newspapers sold by individual copy or subscription, and property used in newspaper production
- Bins used as containers for transporting fruit or vegetables
- Poultry cages
- Sales of food, candy, chewing gum or toys and items for 50 cents or less through vending machines
- Sale of gold, silver, or numismatic coins if total sales is $1,000 or more
- Motion pictures, videos, or audio masters by producers
- Internal and external wrapping, packing, and packaging supplies used for laundered or dry cleaned items
- Occasional sales

Table 6
Texas – Taxable Services

- Amusement services
- Cable television services
- Personal Services
- Motor vehicle parking and storage services
- Repair, remodeling, maintenance, and restoration of tangible personal property [certain exemptions apply]
- Telecommunication services
- Credit reporting services
- Debt collection services
- Insurance services
- Information services
- Real property services
- Data processing services
- Real property repair and remodeling
- Security services
- Telephone answering services
- Internet access services
- Sale by a transmission and distribution utility of service directly to an electricity end-use customer

Source: Texas Tax Code, sec. 151.0101.

myriad of sales and use tax complexities in the era of digital transformation and
electronic commerce.

Hawaii has two use tax rates that it imposes on tangible personal property and
services imported or purchased for use in the state. The Hawaii Revised Statutes define
“property” to mean “tangible personal property and prepaid telephone calling services but
does not include newspapers or other periodical publications purchased on the
subscription plan.”¹⁴³ The purpose of the use tax in Hawaii is to minimize the
competitive disadvantage that local sellers face because of the general excise tax
imposed. Typically, only products and services that are imported or purchased for resale
or to be incorporated in a perceivable fashion into items sold subject to the general excise
tax are exempted from use tax.
For both products and services, the Hawaii Revised Statutes adhere to the exclusion method whereby all products and services imported or purchased outside of the state for use in the state are taxable unless specifically exempted. Section 238-3 states, "The tax imposed by this chapter shall not apply to any property, services, or contracting or to any use of the property, services, or contracting that cannot legally be taxed under the Constitution or the laws of the United States, but only so long as, and only to the extent to which the State is without power to impose the tax."\(^{144}\)

Hawaii exempts a number of specifically defined items by statutory provisions. Excluded items include "any intoxicating liquor . . . imported into the State and sold to any person or common carrier in interstate commerce, whether ocean-going or air, for consumption out-of-state by the person, crew, or passengers on the shipper’s vessels or airplanes."\(^{145}\) The difficulty presented with the items excluded from use tax, evident with the statute relating to the intoxicating liquor, is that a remote seller who may be required to collect the use tax must determine the intent and purpose of the purchaser to determine

<p>| Table 7 |</p>
<table>
<thead>
<tr>
<th>Hawaii – Tangible Personal Property and Services Exemptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Any property or the use of property that cannot legally be taxed under the United States Constitution or laws</td>
</tr>
<tr>
<td>• Any property or the use of property by agencies, instrumentalities, and political subdivisions of the United States and Hawaii</td>
</tr>
<tr>
<td>• Sales subject to the general excise tax</td>
</tr>
<tr>
<td>• Imported intoxicating liquor and tobacco products sold to persons or carriers in interstate commerce for out-of-state consumption</td>
</tr>
<tr>
<td>• Fishing vessels constructed prior to July 1, 1969</td>
</tr>
<tr>
<td>• Any use of air pollution control facilities exempt under the general excise tax</td>
</tr>
<tr>
<td>• Aircraft and vessels if the transfer, acquisition or rental was subject to the sales tax.</td>
</tr>
</tbody>
</table>

the specific application of the use tax exemptions. Table 7 provides a relatively complete list of products and services exempted by the use tax in the state of Hawaii. The benefit of the exclusion method in determining a tax base is that it normally is more encompassing and generally only gives rise to questionable application to products and services specifically exempted by statute. However, Hawaii statutes include a lack of uniformity of both application and definition with respect to the tax base among states that presents overwhelming difficulties to electronic commerce in the digital era.

The comparison of Hawaii’s and Texas’ use tax base provides insight into the great divergence among states. A fundamental difficulty is the lack of uniform definitions of products and services. Furthermore, certain exempted items often require information relating to the end purpose or purchaser’s intent to determine if the transaction meets the statutory requirements. The tax base in Hawaii provides an example of a state that determines taxable products and services by exclusion. Texas, on the other hand, determines taxable products by exclusion and services by inclusion. This varying degree of determining tax base adds to the confusion and complexity which is only multiplied with the consideration of the applicable sales and use tax laws at the local level. Ultimately, the disparity among states, as is evident with the comparison of Texas and Hawaii, in terms of statutory definitions, language, application, and interpretation of the sales and use tax laws is the center of the difficulty with the convergence of electronic commerce and the tax system and, a burden on interstate commerce.

Sales and Use Transaction Sourcing

If a remote seller’s products or services are taxable, it is crucial to determine the taxing jurisdiction to source the sales or use transaction. Determining the source or
location of the transaction is another aspect of the sales and use tax system that has presented further complexity to remote sellers and electronic commerce. Sourcing electronic commerce transactions is particularly troublesome since they are usually instantaneous and interstate. There are generally two methods of determining the source for the sales and use tax application: the market-state sourcing rule and the vendor-state sourcing rule. The market-state sourcing rule is commonly used in the taxation of tangible personal products and, accordingly, the transaction is taxed where the consumer takes possession of the product. Some states use the vendor-state sourcing rule for services, and the transaction is typically sourced where the service is performed.

Texas generally follows the market-state sourcing rule relating to sourcing the sale or use of transactions. To understand the sourcing of transactions, it is necessary to know the state’s definition of “use.” Section 151.011 of the Texas Tax Code defines “use” to mean “the exercise of a right or power incidental to the ownership of tangible personal property over tangible personal property. . . . With respect to a taxable service, ‘use’ means the derivation in this state of direct or indirect benefit from the service.”

In the determination of the source of a transaction, section 151.104(a) states, “A sale of a taxable item by a person for delivery in this state is presumed to be a sale for storage, use, or consumption in this state unless a resale or exemption certificate is accepted by the seller.” Furthermore, section 151.105 states that “tangible personal property that is shipped or brought into this state by a purchaser is presumed, in the absence of evidence to the contrary, to have been purchased from a retailer for storage, use, or consumption in this state. . . . A taxable service use in this state is presumed, in the absence of evidence to the contrary, to have been purchased from a retailer for use in this state.” The
application of these sourcing rules to the telecommunication services will provide insight into the Texas provisions.

Often, telecommunication services presents difficulty in sourcing transactions since the use of a mobile cellular phone allows a person the ability to originate a call from multiple jurisdictions. Section 151.061(c) of the Texas Tax Code specifically defines the sourcing of charges for mobile telecommunication services. This section states:

The federal Mobile Telecommunications Sourcing Act governs the sourcing of charges for mobile telecommunications services. In accordance with that Act: (1) mobile telecommunications services provided in a taxing jurisdiction to a customer, the charges for which are billed by or for the customer’s home service provider, shall be deemed to be provided by the customer’s home service provider; and (2) all charges for mobile telecommunications services that are deemed to be provided by the customer’s home service provider in accordance with this Act are authorized to be subjected to tax, charge, or fee by the taxing jurisdictions whose territorial limits encompass the customer’s place of primary use, regardless of where the mobile telecommunications services originate, terminate, or pass through, and no other taxing jurisdictions may impose taxes, charges, or fees on charges for such mobile telecommunications services.\textsuperscript{149}

The federal Mobile Telecommunication Sourcing Act provides detailed sourcing specifications that reduce the potential complexity of sourcing mobile communications. However, clearly defined sourcing specifications are generally limited to telecommunications services according to the federal act, and the majority of transactions
default to the ambiguous general sourcing requirements of sections 151.104 and 151.011 of the *Texas Tax Code*.

Hawaii, like the majority of states, follows the market-state sourcing rule. The *Hawaii Revised Statutes* define “uses” to mean “any use, whether the use is of such nature as to cause the property, services, or contracting to be appreciably consumed or not, or the keeping of the property or services for such use or for sale, and shall include the exercise of any right or power over tangible or intangible personal property incident to the ownership of that property, but the term ‘use’ shall not include: (1) Temporary use of property. . . (2) Use by the taxpayer of property acquired by the taxpayer solely by the way of gift; [among others].” Sections 238-2 and 238-2.3 provide, “The tax imposed by this chapter shall accrue when the property [services or contracting] acquired [is received] by the importer or purchaser and becomes subject to the taxing jurisdiction of the State.” Furthermore, section 18-238-5-02 of the *Hawaii Administrative Rules* states, “When a taxpayer is subject to the use tax, the taxpayer shall allocate the purchase price or value of the tangible personal property to the taxation district where the property is first used.” Section 18-238-2 of the *Hawaii Administrative Rules* also provides, “Although the sales transaction may be based outside of Hawaii, which is merely a method or means of determining who is to pay the freight from the particular point, primary consideration should be given to the place of delivery of the tangible personal property. Whether the general excise tax or the use tax would be applicable depends upon where the place of delivery of the tangible personal property is located and whether the seller has nexus.” Therefore, according to the applicable sections in the *Hawaii Revised Statutes* and the provisions in the *Hawaii Administrative Rules*, transactions are
sourced to the jurisdiction where they are received or first used by the purchaser consistent with the market-state sourcing rule. Hawaii’s sourcing rules are rather straightforward; however, there is enough inconsistency among states that even this proves a complexity in the current sales and use tax environment.

The comparison of the sourcing rules according to the use tax laws in the states of Texas and Hawaii provides insight into the difficulties faced by the emergence of electronic commerce. Both states generally follow the market-state sourcing rule. However, the inconsistencies of sourcing transactions that do exist among states present tremendous difficulty especially when the sourcing to a multitude of local jurisdictions is considered. In addition, the lack of uniform definitions is an evident problem. For example, Texas’ definition of use focuses on rights and benefits while Hawaii’s definition relates particularly to physical use, possession, or rights. The previous analysis provides insight into the sourcing requirements in Texas and Hawaii at the state level. The many complexities presented by electronic commerce and the current sourcing rules are easily foreseeable such as electronically delivered services, multi-state use of electronically delivered products or services, and the general anonymity provided purchasers in the digital world of the Internet. The cumulative effect of the inconsistency of the sourcing rules among the states, the ambiguities of the sourcing rules in light of electronic commerce, and the general lack of guidance by taxing authorities is an overwhelming burden of complexity faced by remote sellers in this digital era.

**Substantial Tax Nexus and the States’ Jurisdiction to Tax**

Sourcing of transactions relates to which jurisdiction has the authority to impose its applicable sales and use tax. Substantial nexus relates to whether the taxing
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jurisdiction can require the remote seller to collect the sales or use tax. Substantial nexus was thoroughly analyzed previously relating to Quill v. N. Dakota since it was at the center of the United States Supreme Court’s decision. Furthermore, the examination of the Internet Tax Freedom Act revealed in the legislative provision relating to discriminatory tax that an Internet computer server could not be a determining factor in establishing a substantial nexus and tax collection obligation for a remote seller.

Considering the paramount judicial ruling and the limited legislative guidance established in the Internet Tax Freedom Act, this section comparatively analyzes Texas’ and Hawaii’s statutory provisions relating to substantial nexus and a seller’s obligation to collect the sales or use tax.

The provisions in the Texas Tax Code relating to the seller’s liability to collect use tax, like most states, are checked by the Supreme Court’s ruling in Quill v. N. Dakota. Section 151.103(a) of the Texas Tax Code requires “except as provided by section 151.052(d), a retailer engaged in business in this state who makes a sale of a taxable item for storage, use, or consumption in this state shall collect the use tax that is due from the purchaser and give the purchase a receipt for the tax payment.”

The determination of seller’s tax liability in Texas primarily rests on the language “a retailer engaged in business in this state,” implicitly referring to a tax nexus. A “retailer” is defined by statute as “a person engaged in the business of making sales of taxable items of a kind the receipts from the sale of which are included in the measure of the sales or use tax imposed by this chapter.” The key to determining a seller’s liability to collect the use tax in Texas is whether he or she is “engaged in business in this state” and thus has a substantial nexus according to Texas Tax Code. Section 151.07(a)
Converging Borders in a Virtual World

further clarifies the meaning of this critical phrase and provides:

For the purpose of this subchapter and in relation to the use tax, a retailer is engaged in business in this state if the retailer: (1) maintains, occupies, or uses in this state permanently, temporarily, directly, or indirectly or through a subsidiary or agent by whatever name, an office, place of distribution, sales or sample room or place, warehouse, storage place, or any other place of business; (2) a representative, agent, salesman, canvasser, or solicitor operating in this state under the authority of the retailer or its subsidiary for the purpose of selling or delivering or the taking of orders for a taxable item; (3) derives rentals from a lease of tangible personal property situated in this state; (4) engages in regular or systematic solicitation of sales of taxable items in this state by the distribution of catalogs, periodicals, advertising flyers, or other advertising, by means of print, radio, or television media, or by mail, telegraph, telephone, computer data base, cable, optic, microwave, or other communication system for the purpose of effecting sales of taxable items; (5) solicits orders for taxable items by mail or through other media and under federal law is subject to or permitted to be made subject to the jurisdiction of this state for purposes of collecting the taxes imposed by this chapter; (6) has a franchise or licensee operating under its trade name if the franchisee or licensee is required to collect the tax under this section; or (7) otherwise does business in this state.156

All subsections except four and five directly apply to the *Quill v. N. Dakota* ruling and the general requirement of physical presence in the form of property, employees, or representatives in order to establish a substantial nexus. Subsection four provides the
state far-reaching authority to compel a retailer to collect the use tax if it determines the
seller engages in the nebulous criteria of "regular and systematic solicitation of sales."
Subsection five extends the state’s power to require a seller to collect the use tax to mail
and other media sellers in conformity with federal laws. The effects of this statutory
 provision are to broaden the realm of sellers liable to collect tax by providing six far-
reaching criteria to establish a tax nexus.

To ensure that the broad factors in determining a tax nexus in Texas as established
by sections 151.103 and 151.107 do not infringe on federal provisions, section 151.107(c)
of the Texas Tax Code checks the authority the state exercises over nonresidents. This
section provides that "Nonresident persons shall collect the tax imposed by this chapter
with respect to the sale of tangible personal property to the extent authorized by federal
law." This section essentially provides a safeguard to ensure that the state’s laws and
exercised authority relating to imposing a tax obligation are in conformity with the
constitutional requirements, federal laws, and judicial precedent. While the criteria for
establishing a tax nexus according to the Texas Tax Code are quite encompassing, remote
sellers can seek further recourse in the court system which ultimately will determine the
facts of the case and ensure that the state’s power does not infringe on federal provisions,
in particular the precedent set by Quill v. N. Dakota.

Although the Texas Tax Code affords the state a relatively liberal approach to
establishing a tax nexus and the ability to require a seller to collect the use tax, it is
tempered by the state tax administration’s vigor in pursuing and enforcing the broad
provisions. The concern for legal recourse and the ruling that the administration’s effort
to impose a tax obligation on remote sellers under the broad and ambiguous statutes is
unconstitutional formulates the degree of enthusiasm with which Texas’ administration pursues remote sellers. Currently, the Texas administration limits its interpretation of the definition and extent of the nexus requirement and term “engaged in business.” The administration procedures state that “An out-of-state retailer who conducts business in the state only by telephone or through shipments by common carrier or the U.S. mail is not engaged in business in Texas.” Furthermore, the Texas administrative guidelines provide:

A retailer with any of the following in Texas must collect sales or use tax on taxable goods or services delivered in Texas: *A Location* - This includes both permanent and temporary locations, whether operated by the retailer directly, a subsidiary or by an agent. It may be an office, warehouse, distribution center, storage place, sales or sample room or any other place of business; *An Agent* - A representative operating under the authority of the retailer or its subsidiary for the purpose of selling, delivering or taking orders for taxable goods or services; *A Texas Franchisee* - If the Texas franchisee or licensee sells taxable goods or services; *Delivery* - When the retailer uses company vehicles (whether owned, leased or rented) to deliver to Texas customers; *Lease Equipment* - Deriving income from the lease of equipment or other tangible personal property in Texas; *Service Provider* - This may include company employees or authorized repair or service agents; [and] *Independent Salespersons* - This includes salespersons who take orders for taxable goods or services on behalf of an out-of-state retailer.159

The statutory definition of “engaged in business” which subjectively includes sellers who engage in “regular and systematic solicitation” and a seller who “solicits orders for
taxable items by mail or through other media” seems to extend beyond the general physical presence as evidenced by property, employees, or representatives, established in *Quill v. N. Dakota*. However, the administration seems to limit the extent of this apparent statutory authority, as evidenced by the Texas administrative guidelines, in accordance with the more conservative approach taken by the courts in determining tax nexus.

The state of Hawaii also incorporates into its statutes specific provisions governing the determination of a seller’s obligation to collect the use tax. A “seller” is defined as “any person engaged in the business of selling tangible personal property, services, or contracting, wheresoever engaged, but does not include the United States or its wholly owned agencies or instrumentalities other than national banks, the State or political subdivision thereof, or wholly owned agencies or instrumentalities of the State or a political subdivision.”160 For a seller to establish a substantial tax nexus and an obligation to collect use tax in Hawaii, section 238-6(a) requires:

> [E]very seller having in the State, regularly or intermittently, any property, tangible or intangible, any place of business, or any representation as hereinabove defined, (and irrespective of the seller’s having or not having qualified to do business in the State) shall, if the seller makes sales of property, services, or contracting for use in the State (whether or not the sales are made in the State), collect from the purchaser the taxes imposed by sections 238-2(3), 238-2.5, and 238-2.3, on the use of the property, services, or contracting so sold by the seller.161

Hawaii’s nexus requirements, as outlined in the above section, require a seller to have a
physical presence evidenced by property and representatives in accordance with the mandates established by the courts including the precedent set by *Quill v. N. Dakota*.

The state of Hawaii further expands on the nexus requirements in its publications. The Department of Taxation provides guidelines for remote sellers in more general terms. The department states: “Your company is not subject to the taxation jurisdiction of Hawaii including the use and general excise taxes, if it does not have sufficient presence in Hawaii. If your company sends the goods to your customers via the mail or common carrier, does not have an office, employees, representation, or inventory or other property in Hawaii, and does not provide supplementary services in Hawaii such as installation, training, or maintenance and repair of equipment, then your company is not subject to either the use tax or the general excise tax.” Clearly, the state of Hawaii will not impose a liability to collect the use tax on sellers unless they have a substantial nexus evidenced by property, services performed in state, or representatives. Hawaii, however, does not directly address the situation involving a remote seller utilizing the Internet as a channel of purchase and possible delivery. Hawaii’s position with respect to sellers who send goods via mail or common carrier can be partially applied to Internet sellers. Furthermore, according to *Quill v. N. Dakota*, access and purchases through a computer server located in the state of Hawaii represent a *de minimis* presence not sufficient to establish a substantial tax nexus and a liability to collect the use tax. Consequently, a remote seller utilizing electronic commerce, both direct and indirect, without a physical presence in the state of Hawaii would generally not be required to collect the use tax.

The previous analysis of the substantial nexus requirements in the states of Texas and Hawaii provides insight into the complexities of the sales and use tax laws that are
common among states and the implications to remote sellers and electronic commerce. The use tax was the direct focus of the analysis of substantial nexus because it most directly impacts remote sellers. The purpose of determining whether a seller has a substantial tax nexus relates to whether a seller is required to collect the use tax. However, it is important to note that the use tax in Texas and Hawaii is the tax burden and liability of the purchaser or importer. In fact, the imposition of the use tax on the purchaser is generally common among the states and local jurisdictions. Consequently, even if the seller does not have a responsibility to collect the use tax because the seller does not have a substantial tax nexus within the taxing jurisdiction, the purchaser is required to self-assess the use tax on the taxable item. Although businesses generally do self-assess the use tax because they are subject to increased risk of audit, individuals commonly do not assess the use tax because of ignorance or disregard of the required tax liability.

The nexus issue is the essential crux of complexity with the convergence of the sales and use tax system and electronic commerce because it is the determining factor whether a remote seller is obligated to collect the tax. The analysis in this section was limited to the requirements of establishing a tax nexus in the states of Texas and Hawaii. Although the states’ definition of tax nexus includes the general aspects established by the Supreme Court of the United States, there is little consistency in language and extent as was apparent between Texas and Hawaii. The complexity relating to the issue of tax nexus is further magnified by the multiple levels of taxing jurisdictions and the prevalence of electronic commerce. The fundamental issue of tax nexus relates to the degree of physical presence necessary to determine a seller’s liability to collect the sales
and use tax. Such complex issues of the degree of physical presence required include whether telecommuters, temporary physical presence, web servers, virtual malls, affiliated companies, isolated entities, returned merchandise, refunds, kiosks, third party computer warranty services, software in-state, intangibles used in state, and customers in-state are sufficient to establish a tax nexus and impose a liability to collect sales and use tax on remote sellers. The divergence among states is further complicated by the fact that states provide little guidance to these issues of tax nexus and the related ambiguities incorporated in the sales and use tax laws. Ultimately, the complexities of determining tax nexus are left to the court system to ascertain the facts of the case and determine if the seller has a sufficient physical presence establishing a substantial tax nexus and a liability to collect the sales or use tax.

Sales and Use Tax Summary

The sales and use tax system has presented tremendous complexities to remote sellers and electronic commerce. The number of taxing jurisdictions presents a layer of complexity. Further difficulty is found in the fact that the sales and use tax system is generally a depression era tax structure with complex details and little guidance in light of the transforming business environment. The former subsections presented an analytical comparison of the critical elements of the tax systems in the states of Texas and Hawaii. The examination of the respective state laws pertaining to the definition and application of the use tax, the taxable products and services, sourcing concerns, and the determination of a substantial tax nexus not only highlights the depth of complexity with the tax laws, but also underscores the lack of uniformity and general disparity among states. Collectively, the many inconsistencies, the countless taxing jurisdictions at the
Table 8
Comparison and Summary of the Sales and Use Tax Systems – Texas v. Hawaii

<table>
<thead>
<tr>
<th>Sales Tax Fundamentals</th>
<th>State of Texas</th>
<th>State of Hawaii</th>
</tr>
</thead>
<tbody>
<tr>
<td>State level tax</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Local level tax</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Number of taxing jurisdictions</td>
<td>1,357</td>
<td>1</td>
</tr>
<tr>
<td>Sales tax imposed</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>General excise tax imposed</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Liability of sales or general excise tax imposed</td>
<td>Purchaser</td>
<td>Seller</td>
</tr>
<tr>
<td>Use tax imposed</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Liability of use tax</td>
<td>Purchaser</td>
<td>Purchaser</td>
</tr>
<tr>
<td>Sales tax credit available</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>The Use Tax</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of state level tax rates</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>State use tax rate</td>
<td>6.25%</td>
<td>0.5% and 4%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tax Base</th>
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<tr>
<td>Taxable products determined by</td>
<td>Exclusion</td>
<td>Exclusion</td>
</tr>
<tr>
<td>Taxable services determined by</td>
<td>Inclusion</td>
<td>Exclusion</td>
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<tr>
<th>Transaction Sourcing</th>
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<tbody>
<tr>
<td>Definition of &quot;use&quot;</td>
<td>Rights and benefits</td>
<td>Physical use, possession, or rights</td>
</tr>
<tr>
<td>General sourcing rules</td>
<td>Market-state sourcing</td>
<td>Market-state sourcing</td>
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</tbody>
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<tr>
<th>Substantial Tax Nexus</th>
<th></th>
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<tbody>
<tr>
<td>Nexus determination</td>
<td>Broad definition</td>
<td>Narrow definition</td>
</tr>
</tbody>
</table>

various levels, limited guidance, administrative burdens, and the nature and degree of
electronic commerce in the new, global marketplace have resulted in a substantial burden
on commerce that threatens the future of both technology and the sales and use tax
structure. The next section will present an analytical critique of the sales and use tax
system in light of the changing technological environment of electronic commerce in
order to develop guiding standards for the development of an effective and efficient sales
and use tax system for the twenty-first century business world.
**GUIDING PRINCIPLES OF TAX POLICY AND THE SALES AND USE TAX SYSTEM**

In light of the emergence of electronic commerce and the transformation of business in the digital era, an analysis of the current sales and use tax system considering guiding principles of tax policy will provide insight for the development of a successful tax structure. Adam Smith, in his book titled *An Inquiry into the Nature and Causes of the Wealth of Nations*, outlined four maxims of tax policy that will provide the first critiquing lens of the sales and use tax system (see Table 9). The second analytical lens consists of seven guiding principles of good tax policy developed by the American Institute of Certified Public Accountants (AICPA) that expand on Adam Smith’s maxims (see Table 10). The unification of the great economist of the eighteenth century and the tax perspectives of the twenty-first century will prove invaluable in the analysis and critique of the current tax environment for the development of a model sales and use tax system for the twenty-first century.

**Table 9**

<table>
<thead>
<tr>
<th>Adam Smith’s Maxims of Tax Policy</th>
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<tbody>
<tr>
<td>Equity</td>
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<tr>
<td>Certainty</td>
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<tr>
<td>Convenience of Payment</td>
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<tr>
<td>Economy in Collection</td>
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**Table 10**

<table>
<thead>
<tr>
<th>AICPA’s Twentieth Century Tax Perspective Expansion</th>
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<tr>
<td>Fairness</td>
</tr>
<tr>
<td>Simplicity</td>
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<tr>
<td>Neutrality</td>
</tr>
<tr>
<td>Economic Growth and Efficiency</td>
</tr>
<tr>
<td>Transparency and Visibility</td>
</tr>
<tr>
<td>Minimum Tax Gap</td>
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<tr>
<td>Appropriate Government Revenues</td>
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</tbody>
</table>

Equality and Fairness

Adam Smith’s first maxim relates to the equality of the tax system. Adam Smith stated: “The subjects of every state ought to contribute towards the support of the government, as nearly as possible, in proportion to their respective abilities; that is, in proportion to the revenue which they respectively enjoy under the protection of the state.”163 The AICPA further expanded on the principle of equity in that “similarly situated taxpayers should be taxed similarly. . . . The concept of horizontal equity provides that two taxpayers with equal abilities to pay should pay the same amount of tax. . . . The concept of vertical equity comes into play, which means the person with the greater ability to pay should pay more tax.”164 Closely related to equity is the principle of fairness. Fairness, in part, is subjective considering that the term generally is relative to the case and individual. The AICPA noted that the “use of the word fair in describing a tax might be better used in the context of whether a tax system is perceived as fair.”165

The sales and use tax system does not fit into the criteria or meaning of equality as Adam Smith established in terms of a tax “in proportion to the revenue which they respectively enjoy under the protection of the state.”166 The sales and use tax system is a highly regressive structure. That is to say the proportion of sales and use tax relative to income decreases as income increases and increases as income decreases. Essentially, the sales and use tax is inversely related to income and, therefore, lower income taxpayers carry a substantially higher burden of sales and use tax in proportion to their income. For example, a taxpayer earning $250,000 and spending $50,000 on taxable goods and services in Texas would pay approximately 8-1/4 percent sales and use tax—that is $4,125 in sales or use tax, or 1.65 percent of income. In contrast, if a taxpayer
earns $50,000 and spends $30,000 on taxable goods and services at the same tax rate, the sales or use tax would be $2,475 or over 4.95 percent of income. The sales and use tax is a tax imposed on consumption. The marginal propensity to consumer is normally higher among lower income taxpayers. Therefore, lower income groups are generally required to spend a higher proportion of their incomes on products and services than higher income groups. Consequently, the sales and use tax system is a regressive tax that does not distribute the tax burden in proportion to revenues because it is an excise tax imposed on consumption.

With the emergence of technology and electronic commerce, a “digital divide” has emerged that magnifies the inequality of the sales and use tax system. The digital divide refers to the fact that higher income households have greater access to the Internet. Approximately 59 percent of the United States population has access to the Internet (see Figure 4). However, in a study conducted by the NTIA it was discovered in 1998 that “8.1% of the households with income under $5,000 used the Internet, 12.1% of those in the $20,000 - $25,000 income range, 29.5% in the $35,000 - $50,000 range, and 60.3% in households with income over $75,000.” Furthermore, “Black and Hispanic households are approximately one-third as likely to have home Internet Access as households of Asian/Pacific Islander decent, and roughly two-fifths as likely as White households.”

If a remote seller conducting business over the Internet is not required to collect the sales or use tax, the purchaser is required to self-assess the tax. However, this is almost always ignored among non-business purchasers and the transaction escapes from the sales or use tax. Lower income taxpayers do not have easy access to the Internet in comparison to taxpayers with higher income levels, and, therefore, must make purchases from sellers.
with a physical presence in the state and an obligation to collect the sales or use tax. In considering the effects of the digital divide on the incidence of tax, as well as the proposal of exempting all sales and use tax on Internet-related transactions, essentially the sales and use tax burden is disproportionately shifted to lower income taxpayers with limited Internet access, impeding the equality and fairness of the whole tax structure.

**Certainty**

The second aspect outlined by Adam Smith is the maxim of certainty. He insisted: “The tax which each individual is bound to pay ought to be certain, and not arbitrary. The time of payment, the manner of payment, the quantity to be paid, ought all to be clear and plain to the contributor, and to every other person. . . . The certainty of what each individual ought to pay is, in taxation, a matter of so great importance, that a very considerable degree of inequality, it appears, I believe, from the experience of all nations, is not near so great an evil as a very small degree of uncertainty.”169 The AICPA commenting on Adam Smith’s maxim stated, “A tax system’s rules must enable taxpayers to determine what is subject to tax (the tax base) and at what tax rate.”170

The analysis of the tax base (the taxable products and services) in the states of Hawaii and Texas highlighted the difficulty in determining exactly what is a taxable item and this hinders the certainty of the tax system. With the transformation of products and services to a digitized format that does not easily fit within the statutory definitions, the certainty and ability to determine the tax base is further rendered difficult. The number of taxing jurisdictions, the disparity among jurisdictions, and the lack of administrative guidance in the digital era adds further complexity in determining the tax base and the amount of tax to be paid under the current sales and use tax system. The AICPA further
asserted: "If the tax base is dependent on subjective valuations or transactions that are difficult to categorize, the principle of certainty might not be attained. . . . Certainty is important to a tax system because it helps to improve compliance with the rules and to increase respect for the system. Certainty generally comes from clear statutes as well as timely and understandable administrative guidance that is readily available to taxpayers."\textsuperscript{171} The analysis of Texas' and Hawaii's tax laws revealed a system overwhelmed with complexity only magnified by the emergence of electronic commerce. Furthermore, the state and local taxing authorities provide limited administrative guidance to address the many difficulties associated with the antiquated tax system. As a result, the principle of certainty is compromised by the sales and use tax system in the digital era of the twenty-first century.

\textit{Convenience of Payment}

The third tax maxim as outlined by Adam Smith is the convenience of payment. Adam Smith contended that "Every tax ought to be levied at the time, or in the manner, in which it is more likely to be convenient for the contributor to pay it."\textsuperscript{172} The importance of the convenience of payment with respect to good tax policy is that it encourages compliance with the tax laws. Generally, the sales and use tax is imposed at the time of purchase. Even if a seller is not required to collect the sales or use tax, the purchaser is required to self-assess the tax at the time of purchase or use. Adam Smith stated: "Taxes upon such consumable goods as are articles of luxury, are all finally paid by the consumer, and generally in a manner that is very convenient for him. He pays them by little and little, as he has occasion to by the goods. As he is at liberty too, either to buy, or not to buy, as he pleases, it must be his own fault that he suffers any
considerable inconvenience for such taxes." Consequently, because the sales and use tax is generally imposed and payable at the time of purchase which proves the most convenient allowing the purchaser to make an informed decision, the tax conforms to the principle of convenience of payment.

**Economy of Collection**

Economy of collection is the fourth tax maxim established by Adam Smith as a requirement of good tax policy. He asserted, "Every tax ought to be so contrived as both to take out and to keep out of the pockets of the people as little as possible, over and above what it brings into the public treasurer of the state." The AICPA, adding further clarity to this maxim, insisted that "the costs to collect a tax should be kept to a minimum for both the government and taxpayers." These costs include administrative costs and other costs necessary for the collection of the sales and use tax. The multitude of taxing jurisdictions, the disparity of tax laws, and the administrative burden place tremendous cost on remote sellers compromising the maxim of economy of collection.

With the advent of technology and the increased reliance on electronic commerce, remote sellers are operating in a marketplace that is geographically indifferent. In light of the new environment, remote sellers are being compelled to collect the sales and use tax in an increasing number of the multitude of taxing jurisdictions. In a study conducted by Ernst and Young, LLP, titled *Masters of Complexity and Bearers of Great Burden*, the key finding was as follows: "State and local sales and use taxes are expensive to administer and the costs are borne primarily by retailers. The major finding in this study is that the complex system of unique sales and use taxes in 46 different states and almost 7,500 local governments imposes a significant compliance cost burden.
on retailers. Although the consumer is legally obligated to pay the sales or use tax in most states, the tax is collected almost exclusively from retailers with nexus in the taxing jurisdictions.

Furthermore, the study performed by Ernst and Young, LLP estimated the cost of collecting the sales and use tax as a percentage of sales and use tax collected. The alarming concern with the cost is the fact that small businesses (annual taxable sales less than $250,000) operating in a single state incur a cost of compliance in excess of 7 percent of sales and use taxes collected (see Figure 16). This ultimately places smaller companies at a competitive disadvantage. With medium and large size companies operating in a single state, the cost of compliance is reduced because of economies of scale to approximately 3.7 percent and 1 percent (see Figure 16). Ernst and Young, LLP estimated that the cost of compliance for a large remote seller operating in fifteen states exceeds 8 percent of total sales and use taxes collected (see Figure 16). The contrast

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**Figure 16**

Compliance Costs as a Percent of Sales and Use Taxes Collected

![Bar Chart](chart.png)

between the cost of compliance for a large single-state company and a company operating in multiple jurisdictions highlights the tremendous cost of compliance for remote sellers utilizing the Internet in the current sales and use tax environment. The cost of compliance for a small company operating in fifteen states and forty-six states was 54 percent and 87 percent respectively (see Figure 16). The cost of compliance, especially for small businesses, is a "great burden," a competitive disadvantage, and a tremendous cost that certainly threaten to impede interstate commerce. Therefore, the diversion among the many taxing jurisdictions, as was analyzed with the comparison of the states of Texas and Hawaii, and the mere complexity of the unique sales and use tax systems in the new, digital world compromise Adam Smith’s maxim of economy of collection and proves a burden on electronic commerce and interstate commerce.

Simplicity

The AICPA incorporated in its framework for good tax policy the principle of simplicity. The principle of simplicity is closely related to the principle of certainty as was previously analyzed. The AICPA stated that under this principle "the tax law should be simple so that taxpayers understand the rules and can comply with them correctly and in a cost-efficient manner."177

The reoccurring aspect revealed in this thesis is the overwhelming complexity that has resulted with the confrontation of the digital era and the current sales and use tax system. This complexity is forged by a number of factors including the drastically changing nature of technology, the globalization of markets in a geographically indifferent world, the detail of the sales and use tax statutes with limited consideration of electronic commerce, administrative burdens, limited administrative guidance, and a
general lack of uniformity among jurisdictions. This complexity is further compounded by the sheer number of independent taxing jurisdictions creating an overwhelming web of complexity. The principle of simplicity is the fundamental tax policy in the new digital era that the sales and use tax system compromises. Ultimately, the collective sales and use tax system’s magnitude of complexity is the underlying flaw of the tax system that presents a tremendous burden of difficulty, proves an infringement on interstate commerce, and threatens the very future of innovation and technology.

Neutrality

Another element of the AICPA’s framework for sound tax policy is the principle of neutrality. Accordingly, the AICPA asserted, “The effect of the tax law on a taxpayer’s decisions as how to carry out a particular transaction or whether to engage in a transaction should be kept to a minimum.” In other words, the sales and use tax should not directly impact a taxpayer’s decision to purchase a book from a local vendor or remote online seller, or in a digital format rather than tangible form.

Remote sellers are only required to collect the sales and use tax in jurisdictions where they have a physical presence because of the Supreme Court’s concern for the burden upon interstate commerce. In the case that a seller is not required to collect the sales or use tax, the purchaser is required to self-assess and pay the applicable tax. However, as stated earlier, non-business purchasers (business-to-consumer transactions) rarely self-assess the tax. With the advent of electronic commerce, purchasers have ready access and ability to make purchase from remote sellers who are not required to collect the tax applicable to the purchaser. With the rise of electronic commerce, the sales or use tax does in fact affect the purchaser’s decision on the method of purchase and especially
favors purchasing from a remote seller where it is likely that the taxpayer will avoid the applicable sales or use tax that is legally imposed on the transaction. Consequently, it would appear that the sales and use tax conflicts with the principle of neutrality in the digital era of electronic commerce.

Furthermore, there are notable studies and surveys that indicate that if the sales and use tax were imposed on all Internet transactions, it would greatly affect a purchaser’s decision on how to carry out the transaction. In a study by Austan Goolsbee, professor at the University of Chicago, it was reported that “applying existing sales tax to the Internet might reduce the number of online buyers by as much as twenty-four percent or more.”179 Likewise, in a 1999 poll by the Information Technology Association of America if the sales and use taxes were to be collected, 34 percent of those polled would be less likely to buy from mail order or Internet sellers.180 Lastly, bizrate.com reported in a December 1999 survey that approximately 59 percent of Internet shoppers would make fewer purchases if sales tax were assessed on the online purchases.181 Therefore, not only is the principle of neutrality compromised by influencing a taxpayer’s online purchases to avoid the sales and use tax, but it is also compromised by the fact that it would drastically influence a taxpayer’s decision not to purchase online if the tax were imposed on all online transactions.

**Economic Growth and Efficiency**

The principle of economic growth and efficiency relates to the tax system’s impact on the national economy. The AICPA asserted that “the tax system should not impede or reduce the productive capacity of the economy.”182 The inherent complexity of the sales and use tax system does in fact have an impact on the national economy. For
example, the United States Supreme Court’s ruling in *Quill v. N. Dakota* was based on the fact that the current sales and use tax system presented such overwhelming complexity as to threaten interstate commerce and the national economy. Therefore, the liability to collect the sales and use tax by remote sellers without a physical presence was ruled unconstitutional by the Court according to the powers of Commerce Clause. The AICPA further stated, “Economic growth and efficiency is impeded by tax rules that favor a particular industry or investment thereby causing capital and labor to flow to such areas for reasons not supported by economic facts which can potentially harm other industries and investments, as well as the economy as a whole.” Therefore, on the flip side, the Supreme Court’s ruling in a sense poses a competitive disadvantage for some firms because it tends to favor remote sellers by reducing the burden to collect the sales and use tax. Additionally, the multitude of complexities that the sales and use tax system presents could likely threaten the future potential and growth of innovation and technology, which undoubtedly would impact economic growth and efficiency and place the United States at a competitive disadvantage in the global arena. Consequently, considering the prevalence and nature of electronic commerce, the current sales and use tax system threatens to hinder the national economy and compromises the principle of economic growth and efficiency.

**Transparency and Visibility**

The AICPA determined that the principle of transparency and visibility is another aspect of good tax policy. According to this principle, “Taxpayers should know that a tax exists and how and when it is imposed upon them and others.” There are two perspectives of transparency and visibility: micro-transparency and macro-transparency.
Micro-transparency refers to the individual transaction and knowledge or the ability to determine whether the transaction is subject to the sales and use tax. As was evident in the former analysis of the federal implications and the comparison of the states of Texas and Hawaii, it is not easily determined if an item is taxable under the current sales and use tax system, especially in light of the revolutionizing nature of electronic commerce.

The macro-transparency aspect refers to the sales and use tax system as a whole and the awareness by taxpayers of its existence and application. Taxpayers may be aware of the sales tax in their respective state, but have a general misunderstanding of the sales and use tax impacts when they make purchases from remote sellers, primarily Internet purchases. For example, many taxpayers are under the impression that the Internet Tax Freedom Act (see previous analysis) exempts all online purchases from tax.

Consequently, when a remote seller is required to collect the use tax, consumers often view the tax as a new tax, and if the seller does not collect the applicable tax, taxpayers are often not aware of their liability to self-assess the use tax. Annette Nellen, professor at the San José State University, stated: “Consumer understanding of taxes is inadequate.... When it comes to the use tax, the cause of taxpayer rumblings is arguable due to the fact that they view it as a new tax. Very few states make any serious effort to educate their residents about their use tax obligations.”

From the view of the seller, who is often required to collect the sales and use tax, the great number of taxing jurisdictions, the obscurity and dissimilarity the tax laws afford, plus the lack of administrative guidance essentially offer no transparency or visibility of the tax system. As a result, the micro and macro aspects of the sales and use tax system conflict with the principle of transparency and visibility.
Minimum Tax Gap

A crucial part of the AICPA’s framework on good tax policy is the principle of minimizing the tax gap. This principle provides, “A tax should be structured to minimize noncompliance.” Accordingly, the tax gap refers to the “difference between taxes that are owed and taxes that are voluntarily paid” and occurs with any tax system “for a variety of reasons, such as intentional errors (non-filing, underreporting of income, overstating of deductions, omission of transactions) and unintentional errors (math mistakes and lack of understanding of the rules).”

The likelihood of intentional and unintentional errors increases by the degree of complexity of the tax laws. As was analyzed previously, in a study by Ernst & Young, LLP the tax gap related solely to Internet sales was estimated to be $170 million. Business-to-business commerce represents approximately 80 percent of electronic commerce, while business-to-consumer makes up 20 percent. Ernst & Young, LLP’s conservative projection is based on the fact that business purchasers assess the sales or use tax because they are more susceptible to audit concerns, but the majority of lost sales and use tax revenues are connected to business-to-consumer electronic commerce which is relatively less in magnitude in the current stage. More significant is the estimated sales and use tax gap in the near future with the increased degree of technology, electronic commerce, and business-to-consumer transactions. The GAO projected that by 2003 the loss from Internet sales could reach between $1 billion and $12.4 billion, approximately 5 percent of sales tax revenues. The compromise of this principle is largely a function of the sheer complexity of the sales and use tax laws and multitude of taxing jurisdictions which promote intentional and unintentional errors, reducing the effectiveness of the tax
system and resulting in lost tax revenues.

**Appropriate Government Revenues**

The final principle in the AICPA’s framework of good tax policy is whether the tax provides an appropriate source of government revenues. The AICPA contended in its interpretation of this principle, “The tax system should enable the government to determine how much tax revenue will likely be collected and when.”\(^1\) The reliance on the sales and use tax by the states was analyzed previously. However, it is important to recall that the states generated $178 billion from general sales and use tax and over $82 billion on selective sales tax.\(^2\) As a result, the states generate almost 50 percent of total revenues from the sales and use tax systems, while local authorities receive approximately 11 percent of revenues from this tax structure (see Figure 12).\(^3\) The primary infraction of this principle that potentially exists with the convergence of electronic commerce and the sales and use tax system would be the lost revenues because of the intense complexity (analyzed in the previous subsection) and the erosion of the tax base with the digital transformation. Therefore, the sales and use tax system in light of the development of electronic commerce currently fulfills the essential requirements of the principle of providing appropriate government revenues.
A TAX SYSTEM FOR THE NEW MILLENNIUM AND CONCLUSION

At the dawn of the new millennium, a digital world has emerged that holds a promising future and virtually unlimited potential. Yet the existing sales and use tax system presents a web of complexity for electronic commerce and compromises principles of sound tax policy. The instantaneous, interstate, and digitally elusive nature of electronic commerce in the borderless and timeless dimensions of the new, virtual world has converged with state borders defined by the limitations of the antiquated sales and use tax system. This thesis analyzes the conflicting forces of dynamic technology and the restraining sales and use tax system and their impact upon the development of effective and efficient sales and use tax policy for the new millennium.

The current magnitude and the unimaginable future of the Internet require a tax system that complements the defining aspects of technology in the twenty-first century. The underlying characteristic of the technology environment that bears heavily on the development of tax policy is the unimaginable rate of change. One of the many implications of the technological influences is the transformation of business models. Furthermore, a new, digital economy of tremendous magnitude has emerged from the fusion of these revolutionizing models and the unleashed potential of technology, creating an integration of global markets. A facet of the digital economy is electronic commerce, which has reached phenomenal heights and prominence. Technology transcends the traditional borders of the states, and the difficulties presented by electronic commerce directly challenge the future of the current sales and use tax structure.

With the advent of electronic commerce, the sales and use tax system in the United States has received the most concern. This tax system was devised from the
depression era, but provides many complexities in the new, digital era. As a result, the sales and use tax system in its present form pits its very future against the future potential of technology. At the federal level, presidential perception, legislative provisions, judicial precedent, and the United States Constitution present many implications to the state sales and use tax system. The resounding theme from the federal perspective is that the future of the Internet and the national economy should not be compromised by the tremendous burdens of the state tax system. The state level analysis and comparison of the tax systems of Texas and Hawaii present a picture of great disparity that is representative of the fragmented collage of taxing jurisdictions in the United States. The sales and use tax system plays a vital role in the state and local taxing mechanisms, but its future will be dependent on a transformation to meet our rapidly changing, digital world.

The unification of Adam Smith's maxims on tax policy and the expanded tax perspective of the twentieth-first century provide the final critique and analysis supporting the conclusion of this thesis. The conclusion reached is that fundamental changes in the sales and use tax system are needed. The future of the tax system rests on its underlying transformation defined by simplification and uniformity. To reinvent the sales and use tax system of the early twentieth century for the digital world of the new millennium, the following provisions are essential:

- State level administration
- One sales tax rate per state
- Limitations on the use of tax holidays, tax caps, and tax thresholds
- Simplified and limited application of exemptions
- Uniform sales and use tax base categories
• Uniform definitions within the tax base
• Uniform sourcing rules for all taxable transactions
• Uniform nexus rules for the new digital era
• Simplified administrative procedures
• Simplified and uniform tax remittance forms

Implementing these changes will present great challenges. However, the necessary reform will establish an effective and efficient sales and use tax system that is sensitive and responsive to the technological transformation of our world in the twenty-first century.

The pervasiveness of technology has resulted in a transformational wave in the new millennium accompanied by a multitude of benefits and a near limitless future. At the same time, the advent of technology and the magnitude of electronic commerce have also afforded a multitude of complexities that have tested the limits of the established sales and use tax system in the digital era. The 105th United States Congress stated: "The twenty-first century marketplace requires a twenty-first century sales tax system that is more uniform, consistent, and streamlined. Not only will tax simplification make business more competitive, but it will make the government more efficient, resulting in personal benefits to every consumer and citizen." The findings of this report encompass this vision that the collective sales and use tax laws must be simplified and uniform to create a bridge between an old nation and a new, digital world.
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