

UNIVERSITY OF CENTRAL OKLAHOMA  
Edmond, Oklahoma  
GRADUATE COLLEGE

THE CYBER-ECONOMY AND  
THE NATION-STATE

A THESIS

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for

the degree of

MASTER OF ARTS IN POLITICAL SCIENCE

By

KEVIN DAVID ARCHER

Edmond, Oklahoma

1996

UNIVERSITY OF CENTRAL OKLAHOMA  
LIBRARY  
EDMOND, OKLAHOMA 73034-0192

LV  
4294  
.87/aA63  
c.2

THE CYBER-ECONOMY AND THE  
NATION-STATE

A THESIS

APPROVED FOR THE DEPARTMENT OF POLITICAL SCIENCE

July 22, 1996

By Louis Furmanski  
Chairperson  
George M. Scott  
Yongtae Shin

## ACKNOWLEDGMENTS

The production of this thesis would not have been possible without the guidance and advice of my advisor, Dr. Louis Furmanski. I am truly grateful for his input, and have enjoyed working under his direction. In addition I owe a profound thanks to Dr. Chris Markwood for serving as my chief editor and general counsel. I would like also to thank Dr. Greg Scott and Dr. Young-Tae Shin for agreeing to serve as readers.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS .....iii

TABLE OF CONTENTS .....iv

ABSTRACT .....v

CHAPTER

    I. INTRODUCTION .....1

    II. FOUNDATIONS OF THE CYBER-ECONOMY .....3

    III. COMPONENTS OF THE CYBER-ECONOMY .....18

    IV. CHALLENGES TO NATIONAL SOVEREIGNTY .....32

    V. REGULATING THE CYBER-ECONOMY .....46

    VI. CONCLUSION .....59

    VII. REFERENCES .....61

ABSTRACT OF THESIS

University of Central Oklahoma  
Edmond, Oklahoma

NAME: Kevin David Archer

TITLE OF THESIS: The Cyber-Economy and the Nation-State

DIRECTOR OF THESIS: Dr. Louis Furmanski

PAGES: 60

ABSTRACT:

The cyber-economy which is developing via the Internet represents a serious challenge to the ability of nation-states to exercise sovereignty over their economies. Nation-states stand to lose the ability to control their commercial borders, monetary controls, and the ability to utilize fiscal policies. If national sovereignty is to be maintained, then governments must develop effective regulations focusing upon the cyber-economy. However, recent attempts at regulating the Internet are proving to be ineffective and it is unlikely that regulating the Cyber-economy will prove any easier. Thus, national sovereignty over certain important economic matters may be coming to an end.

## INTRODUCTION

Control over a nation's economy is assumed to be an area over which a nation is able to maintain a comfortable level of sovereignty. With the rise of an international cyber-economy the control which a nation-state may exert over its economic destiny is becoming more uncertain. Technology has caught up with the power of the nation-state, and the commerce which is being made possible by these new technologies strikes a direct blow to the notion of economic sovereignty. Nation-states no longer possess the ability to maintain absolute control over the commercial transactions which cross their borders, nor are they likely to possess control over their fiscal and monetary policies in the near future. The developing cyber-economy seriously challenges the sovereignty of nation-states as they attempt to exert control over their economic matters.

This paper is divided into four broad sections in an effort to explain the nature of the problem more fully. The first section lays the foundation for any investigation by describing the Internet over which the Cyber-economy

functions, and the virtual community in which it exists. The second section outlines the major components of the cyber-economy, and discusses their importance. The third section deals with the direct challenges faced by nation-states as the cyber-economy develops, and the loss of sovereignty associated with each challenge. Finally, in the fourth section, current governmental attempts at regulation are examined in an effort to understand the effectiveness which future regulations of the cyber-economy are likely to have.

The cyber-economy is the most profound development in the world economy in the last half of the 20th century. How nation-states deal with its impact upon their ability to control their national economies is of considerable importance. The challenges posed by the cyber-economy are unique, and if nation-states are to maintain current levels of sovereignty, these challenges must be considered. As will be discussed later in the paper, the nature of these challenges is such that their effective regulation may prove impossible. If this proves to be the case, and the challenges of a cyber-economy are too great to be regulated, then the era of national economic control has come to an end.

## FOUNDATIONS OF THE CYBER-ECONOMY

The concept of "Cyberspace" has become common place for the average university educated individual living throughout the industrialized world. Global society seems continuously bombarded by such cyber-topics as the "Web," the "Net," e-mail, cyber-democracy, cyber-nation, cyber-hate, etc. It seems as if society's passion for being online is only slightly less than its passion for coining new expressions that use the newly developed prefix, "cyber."

Any discussion concerning the challenges soon to face nation-states arising from the "cyber-economy" must be rooted in a firm understanding of Cyberspace itself. An examination into what sort of environment this new economic system will function in is therefore in order. To accomplish this, it is important to examine the history of Cyberspace, and then turn to the actual nature of the "virtual community" in which this sovereignty challenging cyber-economy will develop. Therefore, let us begin by focusing our attention upon the makeup of the complicated grouping of computers which has become known as the



Internet.

#### Foundations of the Internet

The Russian launch of Sputnik in 1957 ushered in a new age of technological priorities and spending by the U.S. government. By the late 1960's the United States was locked in a space race with the Soviet Union, at the heart of which was technological innovation. In the midst of this rather tense environment the Department of Defense began funding an experimental network of computers which became known as ARPANET (Krol 1992, 11). The objective was to develop communication protocols which would allow networked computers to communicate transparently across multiple, linked, networks.

Originally designed to develop a networking of command and communication centers that could withstand nuclear attack, ARPANET quickly became the foundation upon which the future of digital communications would rest (Krol 1992, 11). The key to ARPANET's built-in ability to withstand destruction was its diffusion of power. The system was designed so that the destruction of one portion of the ARPANET did not mean an end to the system's ability to communicate. This protection of the ARPANET was made possible by using what became known as "packet-switching,"

technology, or in layman's terms, the use of multiple computers with multiple links to broaden the network and protect its integrity. This diffusion of central authority was a vital feature of the early ARPANET, and has remained a vital component of the Internet of today.

The National Science Foundation (NSF) soon began looking into ways of improving upon the ARPANET to facilitate communication between major Universities and governmental offices in the United States. This endeavor by the NSF to link academic and governmental communities began in the late 1970's and eventually became known as the Internet. Throughout the 1980's the Internet was the exclusive domain of thousands of researchers and scholars around the globe (Rheingold 1994, 69). Expansion of the Internet was soon at hand.

By the end of the 1980's literally hundred's of thousands of people were online. Most of these early Internet users were students at various colleges which had connections, and their use of the Internet was limited to the sending and receiving of electronic mail (E-mail). Exponential growth in the number of homes with personal computers (PC'S) soon led to an increase in demand for the same types of Internet services which had been readily available at many Universities. This increase in demand led

the NSF to seek an exit from the Internet business, and in 1987 it awarded a contract to Merit Inc., in partnership with IBM and MCI, to maintain the network of communication links and to upgrade the Internet (Rheingold 1994, 84).

This move toward privatization inflamed many who were suspicious of IBM's motives, but by the end of 1993 more large companies were involved in the management of the Internet and the government had essentially left it in private hands (Rheingold 1994, 88). By the beginning of 1994 what exists as the Internet today was largely in place, and was being facilitated by some of the largest corporations in the U.S. The government, which had developed the system in the first place, stepped back from the Internet leaving it free to run itself. By early 1994 the Internet had become a global, boundary free, and instant means of carrying out the important functions of communication and commerce.

#### Current Status of the Internet

Growth on the Internet is exponential. It is growing at such a fast pace that even the most reliable estimates are little better than shots in the dark. Currently, it is estimated that more than three million host computers with as many as 50 million users around the world are online, and

the number of users is estimated to be growing by 10 percent per month or more (Hagerty 1995, 7). Today, 78 countries have full Internet connections, and 146 countries are connected sufficiently to exchange E-mail. This kind of growth could never have been imagined by the founders of the Internet, and these 50 million users represent an uncontrolled experiment in human communication.

This growth placed enormous strains on both the servers which provide access to the Internet and the phone lines over which the Internet operates. In order to control these stresses the Internet is facilitated by the major telecommunications companies. While these companies provide the Internet access to their lines they exert little control over the Internet as a whole. Since at its most basic the Internet is merely a conglomeration of networks with no central authority or control, a couple of voluntary organizations have arisen which give some semblance of governance to the Internet.

The most important of these pseudo-governmental institutions is the Internet Society (ISOC). Made up of volunteers from different Internet operating interests, ISOC maintains a loose control over the technological makeup of the Internet, and attempts to address any problems when they arise (Krol 1992, 15). ISOC maintains such technological

control by establishing standard operating procedures for new Internet servers. It's important to remember that ISOC is not a governmental institution, and has representatives from many different interests. In the future this structure is likely to become even more diffuse as the Internet expands and technological purity is not as important. Because of its limited structure the ISOC works well when dealing with technological decisions, but exercises no real control over the Internet itself.

In order to control the technological makeup of the Internet the ISOC appoints a "council of elders" known as the Internet Architecture Board (IAB). Because the Internet is made up of different types of computers standard protocols have been established to assure communication throughout the system (Krol 1992, 15). The IAB meets regularly to determine these standard protocols, and to make decisions concerning the expansion of the Internet. Thus, the IAB has primary responsibility for both the maintenance and the future of the Internet, making it a powerful extension of the ISOC, and an example of the non-governmental driving force behind the Internet.

#### Virtual Community

Economic systems do not operate in a vacuum devoid of

human society. Every economic system is as much a function of the society in which it exists as it is an independent entity. To understand what the future impact will be of a "Cyber-economy" it is important to understand the society in which it will function. The society which has grown up on the Internet has become known as a "Virtual Community," and exhibits many of the same societal characteristics that are found in other human communities. The only difference being that this "Virtual Community" does not exist outside its computer constructed boundaries. Some say that Cyberspace is a more debauch place than the "real" world, but that seems highly unlikely considering the current state of affairs in our global society (Cockburn 1995, 43). Within the boundaries of this "Virtual Community" exists everything from libraries and museums, to shopping malls and conference centers (Shapiro 1995, 10). Almost anything that exists outside of Cyberspace can exist in some form within it. The virtual community of the Internet may be global in scope and yet as easy to access as a word processing program.

#### *Communication and the Internet*

The ease at which the Internet has been transformed into a global virtual community is a by-product of one of the key elements of the Internet itself. Electronic mail, known to most only as E-mail has globalized the human

ability to communicate privately with ease. Originally designed with little more in mind than memos, the Internet's electronic mail ability has provided reliable international communication for more than a decade. This global reach of the average personal computer has transformed how many view their lives in the world at large. No longer does the distance between Hong Kong and Denver seem insurmountable, in reality it is as close as your co-worker on the next terminal.

Present in this global web of electronic mail are the same personalities which may be seen in the world at large. Such is the nature of the Internet that the Unabomber would probably have been online had he not despised the technology which created it. Other radicals who don't share such technological disgust have come online in droves, and it is common to hear E-mail being condemned for its sometimes aggressive nature (Tober 1995, 27). E-mail certainly can be aggressive, but being a microcosm of global society, the fact that there exists the occasional radical in Cyberspace is no cause for alarm. The anonymity that allows for lunatics to exist easily in Cyberspace is of much greater interest.

The Internet in all of its freedom has evolved around the concept of supreme anonymity. The Internet is not

subject to the grip of any government or corporation and is thus a fine example of a decentralized human order (Negroponte 1995, 30). This decentralized human order which has grown up over the Internet provides the foundation for the "Virtual community" that was mentioned earlier. It also provides the foundation for the coming Cyber-economy, an economy which for all practical purposes will be as impossible to regulate as E-mail has shown itself to be. This impossibility to regulate will be discussed at length in later chapters, but the concept of the anonymity of the individual on the Internet is an important one.

#### *Politics and the Internet*

Every community of humankind ever to exist has had some sort of political structure to assure the continuation of the clan, tribe, civilization, etc. The Internet is currently the newest medium by which mankind is communicating those political values, and they are doing so by the megabyte. The spread of Democracy onto the Internet was an inevitable occurrence, but the level of activity is greater than anyone had ever envisioned (Henderson 1995, 43). Could the Internet be the political future of the human race, allowing for online voting and for true democracy? Many have speculated about the importance of the Internet to the democratic process, and many more remain



pessimistic about the future of democracy on the Internet (Henderson 1995, 43).

Obviously the Internet is not the perfect medium for the free exchange of thought (Bond 1995, 250), but it does provide the format under which democratic values could flourish. As of 1994 the Internet was becoming a major force in the democratic process. No fewer than one third of Capitol Hill was online, not to mention the widely publicized White House debut on the Internet, complete with E-mail accounts for the President, Vice-president, and First Lady (Draper 1995, 731; Millhollan 1995, 24). The White House is so interested in the concept of Electronic Government that it recently held online town meetings to discuss the issue with the "citizens of Cyberspace" (Millhollan 1995, 24).

Global society is plagued by social and societal identifiers which separate us as human individuals from one another. The Internet, being an anonymous medium, makes these identifiers unrecognizable, thus the "citizens of Cyberspace" are without race, creed, gender, national origin, etc. They are individuals first and foremost. Whether or not this is completely true is impossible to know, but it is obvious that the anonymity provided by the Internet makes identifiers such as race a moot point. Even

if someone identifies themselves as African, Asian, or Caucasian, who is to say that they are telling the truth. The anonymity of the medium provides the user with the ability to create a "virtual self," who may take on any number of characteristics not transparent in everyday existence (Ehrenreich 1995, 110).

At least one author claims that the idea of a prejudice free Internet is an impossible dream (Hannaham 1995, 23). That may be so, but the ability to interact anonymously at least creates the medium through which individuals may connect without getting caught up in their characteristics. Thus, it is possible for persons from entirely different backgrounds to connect via the Internet because they share one common characteristic, such as a love for Armenian cuisine. By far the larger danger facing the concept of online race relations, and thus the virtual community as a whole is the danger of the Internet becoming an exclusive club.

Numerous authors have denounced the Internet as a "Suburban" tool with little chance of affecting the poor and down trodden who are nonwhites (Cordrescu 1996, 48; Bryant 1995, 47). While it's true that many Internet users are middle class white males, this identification leaves out literally millions of users from around the world who

represent the fastest growing segment of the Internet population . The key, according to Amy Bruckman of the Technology Review magazine, is to discover one's own portion of the Internet, and find one of the many communities which exist online for your benefit (Bruckman 1996, 50-52). Of course the Internet is not the ideal of egalitarianism, but what human endeavor has ever been.

#### *Education and the Internet*

Having discussed the nature of communication and political discourse, the final area within the virtual community which I feel is important to the foundation of the community itself is education. Broad as the topic may seem, I want to focus upon a few simple aspects. First, the Internet may be the most impressive educational tool ever created. The sheer amount of information which is easily accessible through its many connections is unfathomable. What would have taken a Ph.D. candidate years to research, a college freshman is now able to access in a few minutes online (Draper 1995, 728). This explosion of information has led to the use of the Internet to promote every kind of educational experience imaginable. Through such things as the linking of ninth grade students in Ohio with University students in Saudi Arabia, the Internet has changed the scope of education (Noden 1995, 19-20). No longer are

schools bound by their small libraries and shrinking budgets. For the cost of a PC and a phone line a classroom can be opened up to the world.

The second key development in Education which is beginning to occur is the formation of "virtual schools." These schools literally exist nowhere outside Cyberspace, and the implications are enormous (Blumenstyk 1995, A19). Students can begin taking advantage of technology to make their futures brighter, and more productive. Costs can be minimized and expensive educations could become a thing of the past. If one instructor can teach thousands of students via E-mail or Internet conferences, doesn't it follow that costs for universities will decrease. The idea that students could learn via Internet, regardless of geography, eventually might expose even the most average community college student to some of the truly great minds in Academe. If we truly live in an information age, then the development of "virtual universities" is the next step for the "virtual community."

#### *The Virtual Economy and the Internet*

The term "Virtual economy" I use to distinguish the economy which is currently emerging online via the Internet from more traditional forms of carrying out commercial transactions. The current virtual economy is made up of a

handful of vendors who are using the Internet as a kind of electronic billboard. This is a crude form of electronic commerce which will soon give way to fully online commercial transactions which will encompass almost every aspect of day to day life. Goods and services which may or may not exist outside Cyberspace will be bought and sold.

How this economy will develop remains a relative mystery, but there are some factors associated with it which represent huge challenges to the current global system of nation-states. How this system will respond to these challenges remains another mystery. One thing, however, appears to be fairly clear. The Internet has laid the foundation for what will be the greatest challenge to the ability of governments to control the direction of their economies. No longer will governments be able to strictly control their tax base, or even levy taxes on goods and services. No longer will governments be able to control their money supplies by tightening certain controls. The economy which is emerging via the Internet may in fact be the greatest experiment in mass-based capitalism ever attempted, and the challenges may prove to be overwhelming.

## Conclusion

The Internet has grown from a modest Defense Department

network to one which encompasses virtually every nation on earth. This vast expanse is known as Cyberspace and is a true microcosm of global society. Cyberspace knows no political boundaries, nor does it seek approval from any nation-state. It is replete with every form of interaction which humankind involves itself in, and has become a "virtual community" of individuals from throughout the globe. Everything from libraries and universities, to shopping malls and posts offices now exists in Cyberspace. While there are many aspects of Cyberspace which challenge traditional nation-state sovereignty, it is the development within the virtual community of a cyber-economy which will significantly weaken the control which nation-states have over their economies.

## COMPONENTS OF THE CYBER-ECONOMY

The emerging cyber-economy is rapidly expanding the scope of the international marketplace, and is challenging long-held conceptions of commerce. As with all things related to the Internet, growth has been exponential, and the Cyber-economy is expected to account for \$4 billion of sales by the year 2000 (Martin 1996, 127). Corporations of all shapes and sizes are beginning to realize the cyber-economy's coming importance, and are flocking to the Internet by the tens of thousands in an effort to stake out profitable claims on the electronic frontier (Sussman & Pollack 1995, 73). How these claims will be staked, and what the long term consequences for corporations will be remains to be seen. However, there can be no doubt that the cyber-economy is transforming some of the most fundamental economic concepts, including the most basic ideas concerning the nature of sales and distribution.

The cyber-economy will not just change the way corporations do business, it will change the very nature of the current international economic system (Cronin 1994).

All over the globe barriers to free trade are falling by the way side, and free trade is becoming the rule among nations. This process will not only be enhanced by the online economy it will be given a significant boost (Bottoms 1995, 44). Every aspect of the international economy will be affected, and the affects upon the nation-states which operate in that system will be profound. Significant fiscal and monetary challenges are on the horizon for nation-states because of the development of cyber-economy, and the power of the nation-state in the international system will be eroded.

The Cyber-economy incorporates a number of new concepts that challenge conventional economic thought. The most important of these challenges center around the nature of international commerce, and the nature of cash. These challenges represent a significant departure from current forms of commerce, and will shake the foundations of government control over economic processes. The emerging Cyber-economy represents the truest form of capitalism ever devised (Bottoms 1995, 44), and as such will pose significant challenges to the nation-state's ability to control the key functions of fiscal and monetary policy. It has also blurred the definition of International boundary, serving to further weaken the control a nation-state may exert over its borders.



## International Commerce

No longer the exclusive venue of big business, international commerce has been greatly simplified thanks to the international nature of the Internet. What has emerged in the international system has been termed by one author to be a "meta-mart" (Bleecker 1995, 17). In coining the term "meta-mart" the author is referring to the ability of consumers to purchase a wide variety of goods and services direct from a manufacturer without leaving the comfort of their own home. The broader and more important component of this "meta-mart" has little to do with the availability of goods and services. It has do with where those goods and services are likely to have been produced.

For centuries international commerce has given great respect to national boundaries and the sovereignty of the nation-state. Because of the international nature of the Internet and the rise of commerce via the Internet, respect for International boundaries is beginning to wane (Cronin 1994, 65-75). That the sovereignty of nation-states has been challenged by the rise of multi-national corporations is not a new concept. It has been argued that the nation-state is a relic of a bygone era, not fit for existence in today's global corporate environment (Schmidt, 1995). How the Internet will facilitate the further reduction of

national sovereignty is an emerging concept which revolves around the ability of the Internet to easily bypass national boundaries, and to exchange information across those boundaries.

It is important to remember the nature of the Internet as a vast networked system when considering its ability to bypass conventional national boundaries. Because the Internet is a vast system of networks with no central operating authority, the Internet is not something which may be easily regulated. Nor are international connections made via the Internet easily regulated. Internet communication is not as easily controlled as traditional methods of communication, because traditional methods of communication are not nearly as diffused and transnational in nature.

The Internet represents a significant shift in how the commerce of information is carried out because of its ability to transmit information from one portion of the globe to another inexpensively. This ability to bypass national boundaries, and transmit information with little or virtually no cost makes the Internet a far more fluid environment than traditional forms of commerce (Bottoms 1995, 45). As more and more individuals and businesses throughout the world flock to the Internet and become a part of the Cyber-economy, globalization occurs on a scale never

before considered.

One of the keys to the cyber-economy is its transnational nature. For example, suppose an American consumer discovers a Malaysian manufacturer via the Internet and communicates a willingness to purchase a small number of widgets. These widgets are small and easily shipped via Federal Express or any of the many international air carriers. The transaction is completed online and the widgets are shipped the following day, payment being made via credit card. Upon arrival in the U.S., the box containing the widgets is delivered to the consumer unopened and in perfect condition.

This example challenges traditional economic thinking because of one simple characteristic, its fluidity. There were no expensive international phone calls involved, no middle men who had to be dealt with, and no distributors with whom to negotiate shipment. The process was extraordinarily simple to conduct and to conclude. Even though all international mail packages are routed through the U.S. customs service (U.S. Customs 1982, 2), the sheer number of international mail pieces prevents the Customs Service from opening every small international package. Therefore, it is not likely that import duties were applied to the purchase, nor is it likely that the consumer paid any

form of sales tax. Thus, the governments of both Malaysia and the United States had no direct involvement with this international transaction. Neither government collected any taxes or duties from the transaction, and the Internet allowed for the conduct of absolute free trade.

#### *Friction Free Capitalism*

Free trade via the Internet is not just a product of hypothetical scenarios, it is reality. The foundation of today's economy is the creation of and transmission of information. The Internet allows information to be transmitted easily, and without friction. Anything which can exist in the memory of a computer may now be transmitted virtually anywhere in the world. This fluidity of commerce which the Internet enables has been termed "friction free capitalism," and is a revolutionary economic force in the international system. Friction free capitalism represents such a powerful force that some consider Internet commerce to be more significant development than the advent of current retail giants such as Wal-Mart (Bottoms 1995, 46-47).

Considering the devastation wrought on smaller retail stores by chains such as Wal-Mart, the Internet is poised to bring about changes no less devastating. By some estimates, half of all retail stores will be out of business by the

year 2000 (Bleecker 1995, 17). Of course, the advent of new technologies always provides for the disruption of economic sectors which are replaced by innovation. As went the horse and buggy, so too might the retail establishment. The current trend in marketing utilizes facilities in the home such as the television, telephone, and computer. The Internet expands this home based marketplace across borders and makes it international in nature. As commerce on the Internet develops the international scope of the cyber-economy will become more apparent. Adding to the importance of the cyber-economy is the fast approaching release of electronic cash payment systems. Such payment systems will allow for the easy movement of cash between nations, and further erode national sovereignty.

#### Electronic Cash

The development of electronic means through which to facilitate the movement of cash and credit are not new concepts. Certainly the use of computers and networked systems have provided for electronic transfers of cash and credit for over 30 years. As far back as the 1960's the American Management Association pointed to the coming revolution in finance which would be facilitated in the future via electronic means (Anderson, et al. 1966). While

these early conceptions of electronic commerce were relatively crude by today's standards, they did revolutionize the way money is dealt with throughout the world. In much the same way, but with much broader effects, will the development of electronic cash systems revolutionize the world of commerce. As will be demonstrated in the following chapter, electronic cash will challenge the long held ability of governments to maintain absolute control over their money supplies.

#### *The Development of Electronic Currency*

Electronic currency, "E-cash for short," is a method of electronic payment which safely and inexpensively transfers cash over an electronic medium. While the idea of a system utilizing electronic cash has been with us for thirty years (Anderson et al. 1996), the emerging cyber-economy demands the creation of a truly electronic currency. The exact nature of this electronic currency is still uncertain, but its arrival seems imminent (Levy 1994, 174).

"Smart cards" and "digital cash" are two of the current forms of electronic cash payment services being developed. Both would require very little in the way of new technology, and both are scheduled to be tested extensively in the coming months and years (Patton 1995, 74-75). All electronic payment systems operate under the same general

assumption that cash value may be transferred electronically. The only difference between the two is that smart cards rely on a microchip to store value and transfer cash, whereas digital cash may be stored on a personal computer, or "electronic wallet". In all likelihood both forms of E-cash will be used in the coming years, each presenting the conventional economic system with unique challenges (U.S. Dept. Of Treasury 1995, 15-24).

The term "smart card" refers to credit card sized pieces of plastic which are embedded with a microchip capable of storing and transferring value. These cards are currently in use in major cities throughout the world in the form of subway fare cards, and the Cubic Corporation is now bringing them to the world of electronic payment systems (Patton 1995,74). Visa corporation has also entered the smart card business recently, and its smart card is being showcased in Atlanta during the 1996 summer Olympic games (Giedroyc 1995, 1). The key to smart cards, like the, Visa or Cubic cards, is their stored value. A consumer would purchase one of these cards from a card vendor using currency, and then would be able to use that smart card at any retailer which will accept them. The smart card has a predetermined value, and when its value is depleted it may be recycled by the card issuer or discarded.

Smart cards operate in much the same way as many types of prepaid calling cards which have been in use for years. The significant difference between the E-cash on the smart cards and value placed on phone cards is the architecture that stores and transfers value. Most phone cards transfer value using a digital code which is debited every time the card is used by a central clearing house. Smart cards on the other hand, actually store value in a microchip, which eliminates the need for every transaction to be run through a central clearing house. In the current run of tests being carried out by corporations such as Visa, smart cards are being limited to a maximum stored value of less than one hundred dollars, which makes them ideal for small purchases. There are also plans to create stored value cards which could be easily recharged by phone or ATM, giving the smart card expanded use and greater flexibility (Hansell 1994).

Digital cash, as it has become known, is a much more revolutionary concept than is the use of smart cards. The digital cash concept goes so far beyond the smart card that the very existence of digital cash could result in a financial revolution of sorts (Holland & Cortese 1995, 66). Under a digital cash system, E-cash would be the equivalent of electronic legal tender. This would make digital cash transferable between individuals and acceptable for payments



of all types and amounts. The key to digital cash is that it would be acceptable as payment for goods and services purchased both on and off the Internet. Unlike "smart cards," whose use is limited by the number of merchants able to possess the sophisticated machinery capable of subtracting value from the actual physical cards, digital cash is virtually free of machinery requirements. The use of digital cash would be open to virtually any person, business, etc. with access to a personal computer and relevant software. Thus, the cost for merchants would be considerably less than a similar smart card system.

According to David Chaum, founder of Digicash Inc., digital cash is designed to bridge the gap between a smart card and a totally electronic form of currency (U.S. House, Banking and Financial Services 1995, 134). By bridging this gap, digital cash is poised to replace paper currency as the preferred medium of exchange. In its most basic form digital cash is nothing more than a grouping of digits which may be transmitted electronically. What makes a digital cash system so revolutionary lies in its ability to move any monetary value over long distances almost instantly. Chaum's vision of digital cash is based upon his vision of the Internet as the marketplace of the future, and digital cash is designed to thrive in this marketplace (U.S. House,

Banking and Financial Services 1995, 135). Because of its ability to be transmitted via the Internet or other electronic means, digital cash is the perfect vehicle for financial transactions in the future.

Digital cash is the form of E-cash which is likely to dominate online commercial transactions because it is the most versatile. It is also the form of electronic currency which will have the greatest impact upon the current international economic system. Smart cards may eventually coexist with digital cash, but it will be digital cash which will provide the value to be stored on the cards. The key reason smart cards do not represent a coming financial revolution is the necessity of purchasing value upon the card using traditional currency. In stark contrast, the digital cash model is not necessarily tied to traditional currency at all, freeing it from the bounds of a nations current money supply (Newman 1995, 30). It is for this reason that the infusion of digital cash in to the Cyber-economy is of greater importance than the development of smart cards for every day use.

#### *Digital Cash and Privacy*

A key component of digital cash which separates it from current forms of electronic payment transactions is its ability to provide the same anonymity and privacy which is

typical of cash transactions. To David Chaum this element of privacy is by far the most important feature, because it prevents the consumer from being tracked using electronic means. In addition to this, the encryption technology which makes the use of digital cash so private also protect it from theft and misuse (Chaum 1992, 96-99). The ability of digital cash to maintain the privacy of its user should not be understated, because it is likely to be one of the most revolutionary components of the entire emerging cyber-economy.

Currently, all electronic financial transactions may be easily traced, and the level of privacy for the individual is mediocre at best. The situation would change dramatically with the creation of digital cash, because through the use of its encryption technique, known as a "digital signature," no purchase using digital cash could be traced to the individual whose "digital signature" is encrypted upon the currency (Chaum 1992, 96). While the technology involved is extremely complicated, it is based upon the simple notion the digital cash can never exist unless it provides the same kind of anonymity and privacy that consumers have come to expect when using cash in transactions. Of course the ability of the individual to maintain anonymity represents yet another challenge to the

nation-state as it attempts to maintain control over its money supply.

#### Conclusion

The significance of the cyber-economy is based upon its international nature, including its facilitation of international friction free capitalism, and the development of electronic currency. The cyber-economy's international nature is already largely in place, and is breaking down numerous national barriers to the free trade of certain types of goods and services. The currency used to purchase these goods and services is not yet fully developed, but it stands to represent a major shift in how currency is used and supplied. Both of these aspects represent a significant change in how nation-states will manage their economic affairs in the future.

## CHALLENGES TO NATIONAL SOVEREIGNTY

The significance of the nation-state has been eroding for many years. In the past, authors such as Kenichi Ohmae have pointed to the rise of regional economic systems and global trade patterns to account for much of this decline (Ohmae, 1996). More recently, however, the factors which are leading to the further decline of the nation-state have changed. Specifically, the rise of an international cyber-economy poses significant challenges to national sovereignty and the ability of individual nation-states to control their economic destinies.

Cyber-economic challenges may be grouped into three broad categories: challenges to the international economic system; fiscal challenges; and monetary challenges. The first is simply the challenge which the international nature of the cyber-economy presents to the national sovereignty of nation-states. As was mentioned in earlier, the cyber-economy knows no boundaries, because the Internet on which it exists knows no boundaries. The second challenge revolves around the cyber-economy's usurpment of any

nation-state's ability to strictly control its fiscal policies. From sales taxes to custom's duties, the cyber-economy is changing the way governments define their fiscal policy. The third general challenge affects the ability of nation-states to control their monetary policy. The key factor in this challenge to monetary sovereignty is the coming introduction of E-cash, specifically the development of digital cash. Each of these challenges are significant, and represent major challenges to the power of a nation-state to control its economic destiny and deserve further investigation.

#### International Cyber-economy

The most significant recent change in the world economic system is the creation of an international marketplace via the Internet. The cyber-economy represents a revolutionary change in the most basic understanding of political geography and the geographical nature of economics. Recent studies in political geography have tended to point toward the presence of a classification of states in the world economic system (Taylor 1989, 16-17). These states may be loosely categorized into three types: "core, periphery, and semi-periphery" (Wallerstein, 1966) The core consists of the major economic powers and the

periphery and semi-periphery occupy lesser degrees of importance in the international economy (Wallerstein, 1966). The cyber-economy's most significant contribution to the international economic system is its disregard of these classifications. By doing so, many long held beliefs about the nature and stature of the powerful economies are destroyed.

As previously mentioned, because of its extraordinary inexpensiveness the Internet is an equalizing force among corporations. The same equalizing effect which the Internet has upon corporations may also be seen with respect to economies, especially developing economies. For the first time, developing economies have a window through which they may pursue economic growth by producing goods and services for the cyber-economy. These goods and services may be marketed directly to the consumer via the Internet, and there are virtually no barriers to access and future profits.

The cyber-economy represents a significant shift in the world economy because it removes the isolation from developing economies and provides them direct access to the major world markets. By providing developing economies with the same access to consumers that "core" economies have had, the cyber-economy strengthens the position of the "semi-

periphery" and "periphery" economies in the global marketplace. Assuming the cyber-economy continues to expand over the next few years at the same kind of rate which it has been, developing economies that produce goods and services for market via the Internet could see billions of dollars in returns.

What is mentioned above is more of a challenge to the nation-state system than to the sovereignty of a particular nation-state, but it illustrates the immense changes which are due the current economic system because of the rise of a cyber-economy. The international nature of the Internet is also proving to be challenging to other traditional forms of national sovereignty. One of the more identifiable of these challenges is the transmission and sale of information via the Internet that would otherwise be prohibited. The current debate surrounding pornography on the Internet is a prime example of this challenge.

The United States has laws which limit the sale and distribution of pornography. Enforcement of these laws in Cyberspace is not an easy task, and it is virtually impossible to maintain complete control over the material which may be present for sale in the cyber-economy at any given time (Barlow 1995, 84). The most important reason for the inability of governments to strictly control information



is the structure of the Internet itself. Given that the Internet is a large conglomeration of networks throughout the entire world, many servers which sell or display pornographic material may be located in a country outside the U.S. Because the laws of the nation in which the server is located permit the material in question there is no legal basis for the material being stopped at its origin.

The National sovereignty of the U.S. is weakened because it is physically impossible control the transmission of illegal material across its borders. The control of such material is impossible because a single server on the Internet may not be singled out if that server is in another country. The only way to effectively limit the transmission of the material from the server in question would be to break all Internet ties with the entire network in which the server resides. Not only is this impossible, it would be tyrannical, and something akin to throwing the baby out with the bath water.

#### Challenges to Fiscal Policies

From the application of sales taxes to the tracking of income taxes, the cyber-economy represents a formidable foe to national jurisdiction over fiscal policies. Literally every form of taxation is challenged by the developing

cyber-economy (U.S. Dept of Treasury 1995, 16-17). Assuming the cyber-economy achieves \$4 billion in annual commerce by the turn of the century, hundreds of millions of dollars could be missing from government coffers because the cyber-economy proved to difficult to tax.

#### *Income Tax*

Income taxes make up one of the most important mechanisms used to generate income for the state. The development of a cyber-economy, complete with online methods of cash transfer, strikes at the heart of a nations ability to generate an income tax. This inability to generate income taxes on billions of dollars of cyber-economic transfers could eventually threaten the entire system of taxation. After all, if a small portion of individuals discover the ease at which taxation may be avoided by using the cyber-economy doesn't it follow that more individuals would wish to become involved. Because of the virtual impossibilities of tracking and tracing information on the Internet the cyber-economy could become the largest tax shelter ever developed (Bennahaum 1995, 25).

Governments around the world will quickly try to come to terms with the growing problems of income taxes, but their task is complicated by both the structure of the cyber-economy and the use of digital cash. The cyber-

economy is structured in such a way that it provides absolute fluidity of payment and goods and services. Therefore it is likely that an individual could reside in a European Union country and do no banking within the Union. Banking could be facilitated through the use of E-cash and any one of hundreds banks which are scheduled to go online in the next few years (Economist, Oct. 7 1995, 77). How is income to be taxed when portions of the income are received from all over the planet, and may be held in any number of off shore banks (Wallenstein 1996, 31). Payment could be received using a direct deposit, and the individual could then withdraw enough E-cash to meet his or her needs. Tracking the cash would be virtually impossible because of the nature of digital cash, and the individual would likely never be subject to income taxes on earnings generated through the cyber-economy.

Currently there are treaties in place which attempt to head off this kind of evasion, but the prospects for their future enforcement are questionable (U.S. Dept of Treasury 1995,17). How is a government to deal with information that may have only passed through its jurisdiction. Furthermore, the relevant information may be encrypted, and impossible to retrieve without the digital signature of the sender. A government could literally have knowledge of millions of

dollars of taxable income, and never have the receipts needed to prove its existence. These troubles are bound to occur with regard to the taxation of income, and yet they do not represent the whole of the cyber-economy's attack on fiscal control.

#### *Sales and Excise Taxes*

While sales and excise taxes are not nearly as important to national taxation efforts, they do constitute a sizeable portion of governmental income. In a cyber-economy the creation of these taxes is virtually impossible, and governmental ability to impose such taxes on the cyber-economy is extremely limited (Wittes 1995, 1). This inability is due, in part, to the structure of the Internet itself, and the multiple servers which move information. If a sale occurs between a buyer in Oklahoma and a seller in Hong Kong, but is routed through servers in Europe, Mexico, and various U.S. states, the imposition of a sales or excise tax becomes extremely complicated. Possibly the tax should be paid in Hong Kong, but this does not take into account complexities involved in the imposition of sales and excise taxes. Without a trail of receipts to follow in Hong Kong, and possibly no durable good whose inventory has lessened, it is unlikely the any government could impose such a tax.

Suppose that the governments of the world do succeed in

developing sales and excise taxes for the cyber-economy. Is it not likely that some adventurous government would declare themselves to be tax free? Almost immediately scores of companies would be likely to set up shop within its borders to avoid having to charge their customers sales taxes. It seems highly unlikely that given the current nature of the cyber-economy that any effective means of regulating and taxing the cyber-economy would be difficult at best.

#### *Custom Duties*

Customs duties represent a unique fiscal challenge for nation-states in the cyber-economy. The key to the imposition of customs duties is the effective control of imports at various ports of entry around a nation. Since the cyber-economy disregards borders, a nation-state's borders in Cyberspace effectively do not exist. Thus, it is virtually impossible to impose customs duties on goods and services which are transferred via the Internet. Furthermore, as in the earlier hypothetical which used the services of Federal Express, rarely are small packages from overseas opened and even rarer still are customs duties applied to them. As greater numbers of corporations go online in the coming years it is likely that they will pay less, or continue to pay less in the way of customs duties. This loss of fiscal customs control represents a huge loss

of sovereignty to the cyber-economy.

### Challenges to Monetary Policies

Broadly speaking, the coming Cyber-economy poses great challenges to the ability of Nation-states to strictly control their monetary policy. This focus upon monetary policy will be somewhat limited because of the need to focus upon what appears to be the greatest monetary challenge, E-cash. Specifically, "digital cash", and the challenge which it represents to a nation's ability to control its money supply. The ramifications of this new technology are far reaching, and with the emergence of digital cash, money supplies may cease to be controlled by anything other than free market forces.

### *Who Issues Currency?*

In most nations of the world currency is issued by a nation's central bank, or some other governmental institution. The development of digital cash may prove to be too powerful a mechanism of exchange for currency to be left solely to the discretion of central banks. While early forms of digital cash are tied to their respective currencies, it seems likely that future forms of digital cash could be issued by the individual banks which use them. Currently the drive toward the use of electronic forms of

cash is being funded by some of the largest private banks in the world (Hansell 1994, D-2), and as digital cash develops, these giant banks could begin to determine the value of digital cash by fixing it to some asset which is held by the bank .

Digital cash could be backed by virtually anything of value. As long as it was accepted by both the seller and consumer in a business transaction it would be perfectly valid. Digital cash makes this movement away from national currencies possible because of its nature as an electronic means of exchange which may be easily converted to any other currency in the world based upon its market value. There is currently literature which attests to the significance of the transnational nature of certain monies (Cohen 1994, 3). The cyber-economy is transnational by its very nature, and therefore any means of payment acceptable in the cyber-economy would have to be transnational as well.

While no transnational currency has been fully developed, digital cash makes such a currency both feasible, and technologically possible. This move toward a transnational electronic currency has not happened yet in the cyber-economy, but some observers feel its creation to be in the near future. The significant pitfalls which governments have encountered when attempting to regulate the

Internet speak to the difficulties which nations will have controlling who or what provides the foundation for the exchange of digital cash via the Internet.

#### *Amount of Currency*

Control of a nation's money supply is generally the responsibility of a nation's central bank. Typically, central banks attempt to control the amount of currency in circulation by raising or lowering interest rates, and by printing or destroying currency. Over the last fifty years, the use of such tactics by central banks has contributed to the relatively stable supplies of currency available on the international market. This monetary system has never been perfect. While there have been stresses over the years, most major currencies have been relatively stable since the end of World War II. The stability of this currency regime, whereby central banks exert almost total control over a nation's currency may be coming to an end.

The cyber-economy, specifically the advent of digital cash as a component of the cyber-economy, threatens to revolutionize how and by whom currency is controlled. Digital cash, by being perfectly fluid and easily transmitted, threatens to undermine the most basic control which Central Banks have over currency. Even if all digital cash were to be tied to each individual nation's form of



currency, and no banks in the entire world were to issue their own digital cash, significant monetary challenges would still be present. The ability of the national banking system to control the amount of currency in circulation would still be virtually impossible.

For example in the United States, the challenges presented by digital cash to the Federal Reserve system are enormous. First, digital cash would challenge the most basic aggregate methods of measuring currency. Currently the Federal Reserve considers M1 monies to be the amount of currency present within the borders of the U.S. in the form of cash, travelers checks, demand deposits, and checkable deposits (Hyman 1994, 306). It is important to note that this conception of available currency excludes the approximately one trillion dollars residing outside U.S. borders known as "Eurodollars."

Digital cash may be traded and moved so easily and efficiently via the Internet that these massive amounts of "Eurodollars" would have to become part of the accounting mechanism which the Federal Reserve uses to account for M1 monies. If the current system is left unchanged Federal Reserve estimates could be incorrect by hundreds of billions of dollars. A mis-accounting of this magnitude by the Federal Reserve could weaken its ability to control

inflation through manipulation of the money supply. Thus, the economic integrity of the United States would be greatly weakened, resulting in a clear challenge to national sovereignty.

### Conclusion

Ironically, it has been the United States and her western European allies which have been at the forefront of online technologies, and it is this group which stands to lose the greatest amount of control over their economies. From the inability to control transnational commercial transactions, to the fiscal and monetary challenges posed by the cyber-economy the loss of national sovereignty to the cyber-economy is great. If these challenges are to be met, nation-states must effectively regulate the cyber-economy. As the U.S. and others have discovered, regulating the Internet is not as easy as regulating other forms of communication. The ability of Nation-states to control other components of the Internet has direct relevance to any discussion of Cyber-economic regulation. In the next chapter, the ability of the nation-state to regulate the Internet and thus control the cyber-economy will be explored in greater length.

## REGULATING THE CYBER-ECONOMY

Government regulations are the backbone of any ability which a government has to exert sovereignty over its borders, populace, economy, etc. While governments vary in the levels of regulatory burden placed upon their populations, the Internet, and thus the Cyber-economy is proving to be difficult to regulate. Not only has the U.S. struggled with regulation of the Internet, but other states, including China and Germany, have struggled to maintain control as well. As the Cyber-economy gains momentum, governmental regulation will surely attempt to follow suit. If nation-states are to maintain current levels of sovereignty, regulatory measures must be taken. But, as the U.S. has discovered recently, regulating the Internet may prove to be an all but impossible task.

While the cyber-economic challenges to national economic sovereignty are clear, how to deal with these challenges remains somewhat problematic. The success which governments have had in regulating the Internet is suggestive of the success governments are likely to enjoy as

they attempt to regulate the cyber-economy. Attempts by governments to regulate such things as private property, obscenity, and offensive speech on the Internet will provide insights into the ability of governments to regulate the cyber-economy. Because of the diffuse nature of the Internet, any form of regulation will be difficult, but the success of any form of regulation could provide the backbone for future cyber-economic regulations. It is important therefore to examine the success which governments have had in regulating other areas of the Internet.

#### Current Attempts at Regulation

Governments around the globe are attempting to regulate different aspects of the Internet. The reasons that differing governments give for attempting to regulate the Internet are different, but such diverse countries as China, the United States, and Germany have introduced Internet governing laws. Whether or not these laws will ultimately be successful remains to be seen, but their imposition has generated heated debate in Internet circles (Dougherty 1995, 77). Again, the nature of the Internet is an important factor, because ultimately it may prove impossible to regulate under any circumstance.

Currently, China is the greatest regulator of Internet

activities. According to a correspondent for Asia Week magazine the Chinese have instituted a rigorous Internet controlling mechanism known as "China Net" which filters all Internet traffic (World Press Review, March 1996, 40). The Chinese regulation scheme is based upon the absolute control which the Beijing government has over its citizens, and this control has merely been extended to the Internet as well. The China net is a fully regulated network, with all decisions being made by administrators as to what is appropriate for Chinese Citizens. Western news services are not accessible, nor are other many other sites available to Internet users. In addition all e-mail must pass through the government server and is subject to examination by government examiners.

The German attempt at regulation is not as far reaching, and focuses only upon major Internet service providers. When the German government sought to enforce its anti-pornography laws it did so by barring major providers such as CompuServe from doing business in Germany as long as certain pornography was available through its system. In order to remain in Germany, CompuServe ended its contact with some 200 network groups in order to comply with German law, (Crain 1996, 16). This assertion of regulatory sovereignty over an international service was limited in

scope, and affects only CompuServe. However, other Internet provider services may now shy away from doing business in Germany, resulting in a diffusion of Internet services to small local providers.

Even though it is the birthplace of the Internet, the United States has only recently begun to grapple with regulatory problems posed by the Internet. So important has this issue become that large scale congressional hearings have been held in the past year, and legislation has been signed attempting to regulate certain forms of Internet information. All of the current attempts at regulation deal with the enforcement of pornography and intellectual property laws (U.S. House, Science, 1995 & U.S. Senate, Judiciary, 1995). There is, however, a move toward regulation of other forms of Internet information. These attempts involve the regulation of certain forms of disagreeable speech, as well as online hate groups (Hernandez 1995, 122). Should current forms of regulation prove effective, it seems likely that further regulations will be imposed.

The most aggressive attempt at Internet regulation was included in the 1995 Telecommunications Act. While 99% of the Telecommunications Act dealt with subjects other than the Internet, a strong amendment, tacked on by Senator James

Exon, attempts to regulate Pornography on the Internet (Hellwege 1996, 11). The main thrust of this amendment is directed toward the punishment of individuals who engage in the distribution pornography to children (Dibbell 1995, 75). As with any piece of sweeping regulation there are many individuals who are affected by the new regulations that have never engaged in the transmission of illegal information. Because of the far reaching implications of the Exon amendment the constitutionality of that portion of the law has already come close scrutiny, and its effectiveness remains to be seen. As with all things related to the Internet regulation is going to grow exponentially, whether it will be effective or not is an entirely other matter.

#### Effectiveness of Regulations

The effectiveness of regulations which have been put into place by the United States, China, and Germany in an attempt to control the Internet within their borders has not yet been determined. But there is little doubt that the regulations are, for the most part, currently ineffective. Whether or not the three nations will devise better and more productive means of regulation remains to be seen. What is currently understood around the world is the drastic steps

which would be required in order to fully regulate the Internet. Again at the heart of the regulatory problem is the structure of the Internet itself. It's diffuse nature makes the imposition of regulations extremely difficult, and even the strong measures which have been taken by China have proven to be ineffective.

Some of the troubles China is having with its Internet regulation scheme are mentioned in the same Asia Week article which appeared in early 1996 (World Press Review, March 1996, 40). At the heart of China's troubles are new computer and cellular technologies which have become available to Chinese citizens in recent years because of their new found economic prosperity. For example, the use of cellular phone technologies to tap into other networks outside of China is apparently widespread. Chinese citizens who have access to cellular technologies may dial up regular Internet service, allowing them to avoid the Chinese governments attempt at regulation.

Certainly the Chinese could temporarily plug this kind of a technological hole, but at what cost? Will the government in Beijing restrict all access to cellular technologies, and in the process destroy a booming industry. Certain members of Chinese society will continue to possess the cellular technology and maintain unrestricted access to



the Internet. This unrestricted access which is available to some will continue to pose a huge problem to the Chinese regulatory regimes as the numbers of individuals with access to the regulatory bypassing technologies grows.

The problem with regulating technology in China is overshadowed by the threat which the return of Hong Kong will pose to Chinese regulations. Because of Hong Kong's status as a British colony it has had full Internet access for years. In the agreement which returns Hong Kong to China it is mandated that China respect a 50 year transition period during which most basic civil rights will remain unchanged. If China respects this agreement and does not immediately restrict the Internet access of the residents of Hong Kong, then it is likely that Hong Kong's Internet connections could have a ripple effect throughout China. Even if Beijing decides to regulate Hong Kong in a similar manner, the Chinese regulations would be easier to bypass than on the mainland because there is a greater diffusion of cellular technologies in Hong Kong.

It seems apparent that Chinese regulations are ineffective at regulating Internet access and information with any degree of reliability. While it is true that the majority of Chinese citizens are denied access to the technologies which would allow them to by-pass the

regulatory regime. It is also true that numerous individuals have that ability, which has rendered Chinese regulations moot.

The attempt at regulating pornography by the German government is an example of a nation-state attempting to stop unwanted material at the source. The German government denied access to its market to the CompuServe corporation until it removed all networks from its service which provided pornography. While this may have been effective in removing pornography from the CompuServe network, the likelihood that Germany can keep all pornography out of its networks is remote. Indeed, there is no evidence that German regulations have reduced the pornographic sites available to its citizens who do not use the CompuServe service. Again, the key to the German Government's inability to comprehensively regulate Internet material is the sheer scope of the Internet. The government would have to ban all Internet activities in order to assure that its regulations are enforceable.

The United States Department of Justice has been working to regulate portions of the Internet for years (U.S. Dept of Justice 1996, 1). Until this year the focus was: 1) the providing of services and information to the Internet using public, and 2) the aiding of local authorities in

their fight against crime on the Internet. What has developed in the past year, however, has been move toward the restriction of information which may be accessible via the Internet through the imposition of new regulations. At recent congressional hearings, A.M. Rutkowski, current Executive Director for The Internet Society, testified to the difficulties the government faces as attempts are made to enforce these regulations. Rutkowski stated that "it would be exceptionally difficult for government at any level to actually govern operation and use, or dictate conduct that applies to the Internet as a medium." He gave examples which make such regulation impossible and urged congress not to destroy this growing medium with unnecessary regulations (U.S. House of Reps., Technology and Science 1995, 35).

One example of the difficulties which Rutkowski was speaking of occurred last year when a California man was extradited to Mississippi to face pornography charges. Apparently, a resident of the state of Mississippi was downloading pornographic material off of the California man's Internet server. This material was judged to be illegal by the obscenity standards of Mississippi law, but not by the standards of California law. Thus a man breaking no laws in his home state, was extradited because he posted material which was transferred into a state which forbade

such material (Hellwege 1996, 12). This scenario brings up serious jurisdictional problems for governmental authorities because it calls the most basic understanding of geographical jurisdiction into question.

The 1995 Telecommunications Act had little effect upon the Internet as a whole. Not only has the constitutionality of the law been challenged (ACLU 1996, 1), but the effects of the regulations seem to be minimal. European servers have maintained a business as usual stance, and their American counterparts may be slightly more careful to insure that the persons using their services are adults. But the kind of pornographic information which the telecommunications bill attempts to deal with is still readily available. The multiple servers which route information around the world make it possible to bypass the restrictions of U.S. law all together. Thus U.S. regulations may be easily by-passed by connecting to local servers which then connect to servers in countries where U.S. law may not be enforced.

Is regulation of the Cyber-economy possible?

Considering the difficulties governments have enforcing current Internet regulations it is questionable whether governments will find success regulating the cyber-economy.

Christine Varney, who is heading up the Federal Trade Commission's (FTC) push into Cyberspace believes regulation will be difficult, and that self-regulation may be the key to controlling Cyberspace (Yang 1996, 97). It is important to remember that all laws concerning trade practices that exist outside of Cyberspace also exist inside of it. In order to enforce these laws the FTC has turned to many Internet related groups in order to facilitate communication between the government and those involved with the Internet. The FTC hopes to avoid a burdensome regulation process by allowing those involved in the cyber-economy the opportunity to police themselves (Yang, 1996 98; Curtis 1996, 57).

According to the FTC, the greatest concern the government currently has with the developing cyber-economy is the protection of consumers against fraud (Yang 1996, 98). Since this is a difficult task in the non-virtual world, the task in Cyberspace may prove to be overwhelming. If the FTC is going to be effective in its protection of consumers against online fraud, then a dialogue must be opened with the individuals and corporations who make up the cyber-economy. The cyber-economy exists in a community, and like all communities in an open society it requires a certain level of input in the shaping of its own destiny. Therefore, any successful regulatory attempts must be rooted

in the acceptance of those regulations by the cyber-economy itself. The question remains, however, whether or not the cyber-economy is easily regulated, thus preserving national sovereignty.

If governments are unsuccessful in regulating various forms of information which are currently available and distributed via the Internet, it seems questionable that the cyber-economy will lend itself to regulation. The developing cyber-economy represents such a paradigm shift for traditional economic thought, that to regulate it would be to destroy it. If the destruction of the cyber-economy is not the goal, then governments will have to give up some sovereignty in exchange for greater economic prosperity.

There is little doubt among Internet observers that the Internet will prove to be a very lucrative resource for those that involve themselves in the cyber-economy (Newman 1996, 30). With potential commerce expected to be in the hundreds of billions of dollars range, governments are mistaken if they attempt to control the coming financial boom. Just as there have been significant economic changes in the past which at first were feared, so to shall it be with cyber-economy. If governments want to harness the power of the cyber-economy they would be better suited to nurture its growth, and then harness its economic power.

## Conclusion

Governments around the globe are finding that regulation of the Internet is a difficult task. Even the Chinese government is experiencing problems as it attempts to enforce its regulations. For open societies the task is proving to be overwhelming. If the current attempts are suggestive of what is likely to be attempted in the future as governments attempt to come to terms with the cyber-economy, then it is doubtful that the cyber-economy is regulatable. Thus, the loss of sovereignty to the cyber-economy may be permanent.

## CONCLUSION

The loss of national sovereignty to the cyber-economy appears to be permanent. Governmental regulations of other Internet areas are proving to be unenforceable, and the ability of governments to regulate the cyber-economy is unlikely. The Internet is too vast, and the cyber-economy too much a part of the Internet to be regulated easily. Without regulation national control can not be exerted, and a significant portion of national economic sovereignty is therefore being surrendered to the cyber-economy.

The cyber-economy removes from governments the ability to control their commercial borders, and is a direct challenge to national fiscal and monetary controls. Borders may be crossed with the touch of a button, and goods and services transferred quickly and easily around the globe. No longer may taxes be imposed and collected with relative ease. Taxes face such a grave threat that they may become relics of a by-gone era as governments seek new ways to impose them upon the cyber-economy. National control over money supplies and currencies are being rested from the



control of the nation-state by digital cash and new encryption technologies. These are the cyber-economic challenges facing today's governments, and if the failure of current governmental efforts to deal with the Internet are a guide, national control over some economic matters is coming to an end.

## REFERENCES

- ACLU, Press Release-ACLU V. Reno, [www.aclu.org](http://www.aclu.org), June 28, 1996.
- Anderson, Allen H., et al. *An Electronic Cash and Credit System*. New York: American Management Association, 1966.
- Barlow, John Perry. "The Economy of Ideas," *Wired*, March 1994, 84.
- Bennahum, David. "The Trouble with E-Cash," *Marketing Computers*. April 1995. 25.
- Bleecker, Samuel E. "The Emerging Meta-Mart: How Shopping in Cyberspace Will Change the Landscape," *The Futurist*, May-June 1995. 17-19.
- Blumestyk, Goldie. "Campuses in Cyberspace," *The Chronicle of Higher Education*, December 15, 1995. A19-21.
- Bond, George. "Bosnia On-Line," *Byte*, March 1995. 250.
- Bottoms, David. "The Coming Cyber-economy: Fact or Science Fiction?" *Industry Week*, November 5, 1995. 43-47.
- Bruckman, Amy. "Finding One's Own Space in Cyberspace," *Technology Review*, January 1996. 48-54.
- Bryant, Howard. "Will There Be Redlining in Cyberspace," *Black Enterprise*, July 1995. 47.
- Chaum, David. "Achieving Electronic Privacy," *Scientific American*, August 1992. 96-101.
- Cockburn, Alexander. "The Pretensions of Cyberbabble," *The Nation*, July 10, 1995. 43-44.
- Cohen, Benjamin J. "The Geography of Money." Presented at

the Seminar "Convergence en histoire economique," Paris OFCE, October 27, 1994.

Cordescu, Andrei. "Not So Brave New World," *World Press Review*, March 1996. 48.

Cronin, Mary J. *Doing Business on the Internet: How the Electronic Highway is Transforming American Companies*. New York: Van Nostrand Reinhold, 1994.

Curtis, Sara. "Policing Cyberspace," *Maclean's*, February 19, 1996. 56-57.

Dibbell, Julian. "Muzzling the Internet," *Time*, December 18, 1995. 75.

Dougherty, Steve & Dodd, John. "John Perry Barlow: A Wyoming rancher turned digital visionary fights to keep fences off the electronic frontier." *People*, December 4, 1995. 77-80.

Draper, Mark. "Beyond Cyberspace: The Real Promise of Virtual Reality," *Appearing in Vital Speeches of the Day*, September 15, 1995. 726-733.

*Economist*. "Surf's Up For New Wave Bankers," October 7, 1995. 77-78.

Ehrenreich, Barbara. "Put Your Pants On, Demonboy," *Time*, October 23, 1995. 110.

Gianturco, Michael. "Digital Cash," *Forbes*, August 14, 1995. 164.

Giedroyc, Richard. "Visa poised to replace small notes, coins with chip-based debit cards in United States," *Coin World*, July 17, 1995. 1, 67.

Haggerty, William F. *The Computer Systems Policy Project*, Presented to NII Copy Right Protection Act of 1995 part 2.

Hannaham, James. "Cyber: Tales From the Encryption," *Village Voice*, January 23, 1996. 18.

Hannaham, James. "Cyber: Don't Believe the Hypertext," *Village Voice*, November 7, 1995. 23.

- Hansell, Saul. "An End to the Nightmare of Cash," *The New York Times*, September 6, 1994.
- Hellwege, Jean. "Internet Regulation: Lawmakers Try to Tame Cyberspace," *Trial*, January 1996. 11-14.
- Henderson, Rick. "Cyberdemocracy," *Reason*, April 1995, 43-46.
- Hernandez, Debra G. "Mayhem Online," *Editor & Publisher*, June 24, 1995. 34-36, 112-113.
- Holland, Kelley & Cortese, Amy. "The Future of Money," *Business Week*, June 12, 1995. 66-78.
- Hyman, David N. *Macroeconomics*. Boston: Irwin, 1994.
- Krol, Ed. *The Whole Internet Users Guide and Catalog*. Sebastopol, CA: O'Reilly and Associates, 1993.
- Levy, Steven. "E-money," *Wired*, December 1994, 174.
- Martin, Michael H. "Why the Web is Still a No Shop Zone," *Fortune*, February 5, 1996. 127-128.
- Millhollon, Michelle. "Citizens in Cyberspace," *Quill*. October 1995. 24.
- Negroponete, Nicholas. "The Headless Net-An interview with Nicholas Negroponete," *New Perspectives Quarterly*, Fall 1995. 30.
- Newman, Peter C. "E-Cash: a looming financial revolution," *Maclean's*, June 26, 1995. 30.
- Noden, Harry R. "A Journey through Cyberspace: Reading and Writing in a Virtual School," *English Journal*, October 1995. 19-26.
- Ohmae, Kenichi. "China's 600,000 Avon Ladies," *New Perspectives Quarterly*, Winter 1995. 14-20.
- Patton, Phil. "E-Money," *Popular Science*, July 1995. 74-83.
- Rude John C. "Birth of a Nation in Cyberspace," *The Humanist*, March/April 1996. 17-22.
- Rheingold, Howard. *The Virtual Community: Homesteading on*

- the Electronic Frontier*. New York: Harper Collins, 1993.
- Schmidt, Vivien A. "The new World Order, incorporated: The Rise of Business and the Decline of the Nation-State," *Daedalus*, Spring 1995. 75-106.
- Shapiro, Andrew L. "Street Corners in Cyberspace," *The Nation*, July 3, 1995. 10-14.
- Sussman, Vic & Pollack, Kenan. "Gold Rush in Cyberspace," *U.S. News & World Report*, November 13, 1995. 72-80.
- Taylor, Peter J. *Political Geography: World Economy, Nation-state, and Locality*. New York: John Wiley & Sons, 1990.
- Tober, Bruce. "E-mail Aggression," *New Statesman & Society*, May 5, 1995. 27-29.
- U.S. Customs Service. *International Mail Imports*, Washington D.C. GPO: 1982.
- U.S. Department of Justice. "Justice on the Net," *National Institute of Justice - Monthly Report*, March 1996. Washington D.C.: GPO, 1996.
- U.S. Department of Treasury. *Exploring the World of Cyberpayments: An Introductory Survey*. September 27, 1995. Washington D.C.: GPO, 1995.
- U.S. House of Representatives/ U.S. Senate. Joint Hearing before the House Committee on the Judiciary, and the Senate Committee on the Judiciary. *NII Copyright Protection Act of 1995*, 104th cong., 1st Sess., November 15, 1995.
- U.S. House of Representatives. Hearing before the Subcommittee on Domestic and International Monetary Policy of the Committee on Banking and Financial Services. *The Future of Money - Part 1*, 104th cong., 1st Sess., July 25, 1995.
- U.S. House of Representatives. Joint Hearing before the Subcommittee on Basic Research and the Subcommittee on Technology of the Committee on Science. *Cyberporn: Protecting our Children from the Back Alleys of the Internet*, 104th cong., 1st Sess., July 26, 1995.

Yang, Catherine. "How do You Police Cyberspace," *Business Week*, February 5, 1995. 97-98.

Wallenstein, Andrew. "Expanding Banks Take Root in Cyberspace," *Advertising Age*, January 29, 1996. 31.

Wallerstein, Imanuel. *The Capitalist World-Economy*. Cambridge: Cambridge University Press, 1979.

Wittes, Benjamin. "The Dark Side of Digital Cash," *Legal Times*, January 30, 1995. 1.

*World Press Review*. "Invasion from Cyberspace," March 1996. 40.