

ELECTRONIC COMMERCE

Challenges & Opportunities



Research Project 50.31
Research & Analysis Division
Upstate New York District
October 2000

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Electronic Commerce – Challenges & Opportunities Research Project 50.31

EXECUTIVE SUMMARY

Electronic commerce, or e-commerce, is the sale or exchange of goods and services over the Internet. The current policy of the Federal government is to promote the growth of electronic commerce and encourage the business community to take the lead in developing the global information infrastructure or Internet.

The Internet's decentralized structure, bottom-up system of governance, and lack of physical location have the potential to eliminate many of our current system's "taxing points." The Internal Revenue Service has been designated by the Treasury Department as the lead agency "to develop tax administration and compliance rules" that protect the revenue base while not impeding the growth of electronic commerce. Our project represents the Upstate New York District's contribution to this mission. The goal of the project was to profile tax compliance of small businesses engaged in electronic commerce and to identify trends that may impact customer service and compliance behavior in the future.

The project consisted of the identification and examination of commercial web sites in six diverse market segments. A literature survey was used to identify those businesses that are at the center of the growth of the Internet economy. The 6 market segments were:

- ◆ **Internet Access & Service Providers (ISP)** - Internet connection services and web page hosting.
- ◆ **Computers Sales/Service** - Software and hardware including communication, network and peripheral products.
- ◆ **Financial Services** - Stock trading, on-line banking, financial advisement and asset management.
- ◆ **Business Services** – On-line business and information services, including Internet advertising and web page design.
- ◆ **Retail and Wholesale** – Music, books, jewelry and clothing sold via on-line catalogues.
- ◆ **Adult Entertainment (Gray Market)** – Pornography and on-line gambling.

Approximately 18 thousand commercial web sites were identified in the 6 market segments. Nine percent (9%) of these web sites were selected for further study. Four hundred and twenty-six (426) e-commerce businesses active in 1997 were ultimately audited as part of the project. The selection process is outlined in Figure B-1. The filing, payment and reporting compliance of the owners of these e-commerce businesses were

tested. The tests included audits of their 1997 tax returns by revenue agents.

Our report sets out the results of our research in the form of 15 findings followed by a set of conclusions and recommendations. Highlights of these findings are as follows.

◆ **The Tax Gap for the E-Commerce Businesses in Our Study**

The income tax gap for the 426 commercial web sites selected for examination was \$6.2 million for 1997. The majority of the tax gap is attributed to ISPs, adult entertainment sites, and computer sales/service businesses. Ninety-one percent (91%) is associated with the understatement of taxable income, 7% with the failure to file tax returns, and the remainder with the failure to pay in a timely manner.

◆ **Registration Procedures Allow E-Commerce Businesses to Mask Their Identities**

The beneficial owners of 12% of the web sites selected for initial testing could not be identified on IRS data systems. Registrants of commercial domain names are not required to verify their identities with commercial registration services.

◆ **The E-Commerce Businesses Studied Failed to File Tax Returns**

Ten percent (10%) of the 426 commercial web sites selected for examination failed to file their 1997 tax return. The failure to file rate among ISPs was 16%.

◆ **The E-Commerce Businesses Studied Understated Their Taxable Income**

The net misreporting percentage (NMP) measures the percentage of taxable income not properly reported. The NMP detected for 1997 for the 426 commercial web sites selected for examination was 30%. The analogous rate for pre-e-commerce small business corporations was 16% based on their 1995 tax returns.

◆ **Unreported Income Is a Major Compliance Problem for the Businesses Studied**

Thirteen percent (13%) of the examinations resulted in the identification of unreported income. These cases accounted for over one-third of the audits that resulted in changes to taxable income. The median amount of unreported income was \$15,000 and the average amount was \$87,000. (Note: Calculations do not include an examination that produced an unusually large change to taxable income. Inclusion of this amount distorts the average.)

◆ **The Internet Economy is Transforming Business Enterprise**

The Internet economy is the fastest growing segment of the U.S. economy. Small and medium size businesses account for 73% of all Internet related revenue. One-third of these businesses did not exist in 1996. The opportunity for remote selling to consumers and other businesses is leading to the creation of new business practices and models.

The commercial practices of many of the businesses studied during this project were similar to the practices of traditional “brick and mortar” businesses. This proved to be beneficial from a program management perspective because it allowed the revenue agents to use traditional audit techniques in their examinations. For example, the traditional

bank deposit analysis method of income reconstruction was the primary audit technique used on a majority of the unreported income cases. The efficacy of this technique reflects positively on the skills of the revenue agents, and the fact that many of these taxpayers did not avail themselves of the sophisticated electronic payment systems that allow remote clearing of credit/debit card transactions.

However, e-commerce and electronic payment systems were still in their very early stages in 1997. E-commerce continues to grow at rates that far exceed earlier estimates. The domestic Internet economy is projected to exceed \$1.2 trillion by 2002 and \$2.9 trillion by 2004. Concurrent with the growth of e-commerce is the proliferation of new business models. Terms such as virtual corporation, e-commerce facilitator, e-commerce portal, and infomediary have entered the lexicon of business entities. The conclusions we draw based on the aforementioned findings must be cast in light of these new, interesting, and challenging trends.

Our most important conclusion is that the adoption of more sophisticated tax planning strategies and the development of new compliance problems will parallel the introduction of these new business models. The compliance issues we identified in our research, such as the masking of ownership, the failure to file, and the understatement of income are harbingers of future compliance problems that will need to be addressed.

Accordingly, our report concludes with sixteen recommendations for future research, compliance, customer service and education projects. The majority of these projects affect the customer base or staff of more than one operating division. The proposed projects are described in detail in Appendix C

Some of the projects specifically address the compliance problems identified in this report, such as the failure to file tax returns by ISPs and the reporting compliance of computer sales/service companies. Other projects address the need for strategic research on specific types of business models, and the impact of digital technologies on the ability of the IRS to identify the beneficial owners of e-commerce businesses and to ascertain the nexus of business transactions. Finally, we have included specific recommendations in the areas of employee development and customer service, including the use of the Internet as a medium to assist e-commerce businesses in meeting their Federal tax obligations.

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INTRODUCTION

Background

The build-out of the World Wide Web and the evolution of the Internet from a communications network for academic research to an electronic market place have been heralded as one of the key drivers in the U.S. economy's recent performance. The Department of Commerce has described the Internet's impact on the daily lives of Americans as analogous to the impact of the television or low cost personal computers.

The policy of the United States Government is to “encourage industry self-regulation wherever appropriate and support private sector efforts to develop technology and practices that facilitate the growth and success of the Internet.”¹ A key component of the government's policy is to tailor its regulatory policies to support the Internet's “tradition of bottom-up governance.”² The success of this policy is evidenced by the take-off in the registration of commercial web sites (domain names).³

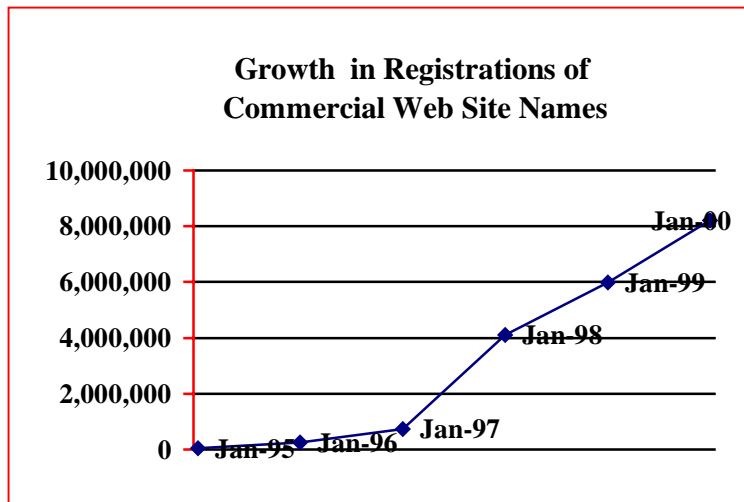


Figure 1: Growth in Registration of Commercial Web Site Names
Source: Network Wizards, on-line: <http://www.nw.com>

The Treasury Department adopted a similar policy in its *Selected Tax Policy Implications for Global Electronic Commerce*. The

Treasury Department emphasized the need to develop tax policies that do not impede the growth of electronic commerce, while protecting the revenue base of our tax system.⁴ The Internal Revenue Service, in consultation with the Treasury Department, has been

¹ U.S. Department of Commerce, *The Emerging Digital Economy*, Introduction & Chapter 1, on-line: <http://www.commerce> (1998).

² Office of the President. *A Framework for Global Electronic Commerce*. p.4, on-line: <http://www.iitf.nist.gov/elcomm/ecommerce.htm> (1997).

³ Underlined words are defined in the glossary found in appendix A.

⁴ U.S. Department of the Treasury, *Selected Tax Policy Implications of Global Electronic Commerce*, pp. 1, 21, on-line: <http://www.treas.gov/taxpolicy/library/internet.pdf> (1996).

assigned the task “to develop tax administration and compliance rules that take into account the unique features of electronic commerce and do not impede its growth.”⁵

Objectives

Our research project on electronic commerce represents the most comprehensive study undertaken to assess the impact of the growth of electronic commerce on compliance with Federal Income Tax Laws. This report presents the results of our research as defined in the project’s primary objectives.⁶ Our working hypothesis is that the changes in commerce and business structure as a result of commercialization of the Internet have a direct effect on taxpayer compliance. We test this hypothesis by accomplishing the following objectives:

Measure Tax Compliance of E-Commerce Businesses

Assessment of the filing, remittance and reporting compliance (return accuracy) for businesses engaged in electronic commerce.

Profile the Internet Economy

Profiling the demographics and economics of electronic commerce with particular emphasis on those market segments that are driving its expansion.

Develop an Electronic Commerce Model

Development of an electronic commerce model that emphasizes the business decisions in the development of an Internet based business and the impact of those decisions on tax compliance.

Scope

The original scope of the project was small domestic businesses. We defined small business as sole proprietorships, or corporations and passthrough entities with \$10 million or less in assets.⁷ The criterion of \$10 million in assets is a convenient device for identifying “cash businesses.” A cash business is any entity that is closely-held with internal accounting controls that are subject to being compromised or overridden by the principals of the business. We felt that that the digital technologies of the Internet would be used by cash businesses to mask their identities or the nexus of their business transactions.⁸

⁵ Internal Revenue Service, *Taxation of Global Electronic Commerce: The Role of the IRS*. Memorandum to Michael P. Dolan, Acting Commissioner of Internal Revenue; From Donald C. Lubick, Acting Assistant Treasury (Tax Policy). August 26, 1997.

⁶ Internal Revenue Service, *Profile Plan - Research Project 50.31 - Tax Compliance of Small Businesses Engaged in Electronic Commerce*, p. 9 (October 1998). The project was formally numbered 12.03.

⁷ Internal Revenue Service, *Income Tax Compliance Research: Gross Tax Gap Estimates and Projections for 1973-1992*, Publication 7285 (3-88). Under the new IRS operating division structure corporations and passthrough entities with more than \$5 million in assets are classified as large and medium size businesses.

⁸ Christian, Charles W. “Compliance of Sole Proprietors -- Findings From the 1988 TCMP Phase III, Cycle 10,” The IRS Research Bulletin, Publication 1500, pp. 23 – 28 (December 1992). Morton, Carolyn M.

We expanded the scope of our research outside the aforementioned criteria. The Internet's borderless economy and the creation of transitory business formations, such as virtual corporations, necessitated that we look at business activity involving transnational business organizations. Additionally, the reorganization of the IRS along customer lines necessitated that we look at the impact of electronic commerce on the customers of both the Small Business/Self-Employed, and Large and Mid-Size Business Divisions.

Two other objectives from our original plan will be reported on under separate cover. We proposed to develop a methodology for identifying businesses engaged in electronic commerce in our original profile plan. We will be issuing a separate report that will summarize the techniques and technologies that we have learned in this area since the inception of the project.

We also planned to conduct a longitudinal study of a sample of business web sites under the auspices of this project. The necessary timeframes to conduct a meaningful study now require that this be a follow on project. This is discussed below under Recommendations.

The results of our research are presented below as 15 findings. We then draw a series of conclusions and propose an action plan in the form of a set of recommendations for meeting the e-commerce challenge.

“Trends in Compliance of Small Corporations.” The IRS Research Bulletin, Publication 1500, pp. 29 -- 37 (December 1992). General Accounting Office, *IRS' Tax Gap Studies* (GAO/GGD-88-66BR), pp. 10 – 20 (March 1988). The Taxpayer Compliance Measurement Program (TCMP) used \$ 10 million in assets as criterion for inclusion in the program

RESEARCH METHODS

Our research methodology reflected the difficulties encountered in selecting an appropriate statistical method, and the compilation of statistically valid results for market segments that are both dynamic and poorly defined. The dynamic nature of our research subject necessitated that we modify the research methodology we proposed in our original plan.⁹ These modifications enhanced the validity of our findings.

Market Segments

Electronic commerce is the “application of Internet technology, a suite of communication technologies, protocols, and standards for networking” among computers for the purpose of conducting a wide range of commercial activities. “Direct e-commerce involves goods and services that are purchased and delivered by electronic or digital means. Indirect e-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.”¹⁰ E-commerce includes “on-line trading of goods and services, electronic fund transfers, on-line trading of financial instruments, electronic data exchanges between companies and electronic data exchanges within companies” over the open networks of the Internet.¹¹

Our literature survey identified a number of market segments that are the “market leaders” driving the growth of electronic commerce. We selected them for study because they are at the center of the emerging Internet Economy.¹²

1. Internet Service Providers (ISP) - Internet connection, web page hosting, security and encryption services. The ISPs are at the center of the Internet infrastructure.¹³
2. Computer Sales/Service - Software and hardware including communication, network and peripheral products. These businesses are sellers of products and services that build upon the Internet infrastructure and make it possible to perform activities on-line.

⁹ Internal Revenue Service, *Profile Plan*, pp. 15 – 18.

¹⁰ Frieden, Karl, Cybertaxation: The Taxation of E-Commerce, Arthur Andersen, p. 8 (2000).

¹¹ Greenstein, Shane, *Framing Empirical Research on the Evolving Structure of Commercial Internet Markets*, p. 1, on-line: <http://mitpress.mit.edu/UDE/greenstein.pdf> (1999); Abrams, Howard E. & Richard L. Doerneberg, “How Electronic Commerce Works,” *Tax Analysts*, 97 STN 141-136, p. 122 (July 1997).

¹² *Selected Tax Policy Implications of Global Electronic Commerce*, pp. 11 -- 13. U.S. Department of Commerce, *The Emerging Digital Economy II*, Chapter 1, on-line: <http://www.ecommerce.gov/ede/ede2.pdf> (May 1999), Center for Research in Electronic Commerce, the University of Texas at Austin, *Measuring the Internet Economy*, pp. 1 –10, <http://cism.bus.utexas.edu/> (June 1999).

¹³ The terms Internet Service Provider (ISP) and Internet Access Provider are often used interchangeably. An IAP provides access to the Internet via a modem or other access medium. Whereas IAPs offer only Internet access, ISPs may provide additional services such as leased lines and web development. See: *IAP-ISP Glossary's Definitions and Links*, on-line: <http://isp.webopedia.com>. We will treat ISP and IAP as being synonymous for purposes of this report.

3. Financial Services - Stock trading, on-line banking, financial advisement and asset management. These financial service providers broker transactions and add value by functioning as intermediaries.
4. Business Services – On-line business and information services, including Internet advertising and web page design. Business service providers operating on the Internet are content aggregators and frequently serve as on-line intermediaries.
5. Retail & Wholesale – Sellers of music, books, jewelry and clothing sold via on-line catalogues. These are traditional businesses that have migrated from the “brick and mortar” storefront to the digital market place of the Internet.
6. Adult Entertainment (Gray Market) – Pornography and on-line gambling. These businesses cater to consumer demands that may be subject to social as well as legal restrictions. Gray market businesses are retailers, but may serve as content aggregators.

As discussed in the Introduction, we focused our initial research on small businesses operating within these 6 market segments. The common link among these six diverse market segments is that all of them have been affected by the convergence of computing, communication and digital information centered on the Internet.¹⁴

Methodology and Sampling Procedures

Our methodology reflects the practical problems associated with a group of market segments that are both dynamic and poorly defined. It is dynamic because of its exponential growth. One recent survey estimated the growth rate as high as 68% from 1998 to 1999 alone.¹⁵

It is poorly defined because the widespread deployment of Internet technology has led to the creation of “new network based forms of activity” that span organizational boundaries and led to greater integration in distribution (business to business) and retail transaction actions (business to consumer).¹⁶ These trends render classification systems, such as the North American Free Trade Association (NAFTA) codes, as less than optimal devices for classifying taxpayers into market segments. As one researcher at the Bureau of Economic Analysis observed, the “digital economy is not a standard classification for economic data.”¹⁷

¹⁴ U. S. Department of Commerce, Modeling the Digital Economy, p. 1 on-line: <http://www.digitaleconomy.gov/define.html> (May 1999).

¹⁵ Center for Research in Electronic Commerce, the University of Texas at Austin, The Internet Economy Indicators, p. 1 on-line: <http://www.internetindicators.com/quotes.html> (October 1999). The growth of electronic commerce is discussed under Finding 1.

¹⁶ The Delphi Group, *e-active: How the Leading Edge of e-businesses are Transforming Themselves and Their Industries*, p. 2 on-line: <http://www.delphigroup.com/pubs/e-business-report.htm> (October 1999); DeLong, J. Bradford & A. Michael Froomkin, The Next Economy, p. 1 on-line: <http://www.miami.edu/~froomkin/articles/newecon.htm> (April 1997), *Modeling the Digital Economy*, p. 1

¹⁷ Moulton, Brent r., GDP and the Digital Economy: Keeping Up With the Changes, Bureau of Economic Analysis, p. 4 (May 1999).

Our sampling methodology reflected the difficulties associated with extracting a statistically valid sample from the aforementioned group of market segments. As we discussed above, the decentralized structure of the Internet in conjunction with its exponential growth makes it difficult to operationalize our target population into a well-defined sampling frame. This is evidenced by the fact that we had to rely on multiple directories and search engines to develop a list of all the businesses engaged in electronic commerce in our 6 targeted market segments.

We used multiple search engines because we lacked access to a centralized directory or index of Internet addresses. The architecture of each search engine, which is based on the concept of centralized indexing of traditional information retrieval, is at odds with the growth of Internet. A study of the estimated coverage of 6 leading search engines sponsored by the *NEC Research Institute* indicated that each search engine is only able to retrieve a small percentage of the existing web pages. By combining search engines, the researchers were able to achieve coverage levels in excess of 60%. The remaining 40% represent a kind of “undernet” that is not indexed (retrievable) by conventional search engines.¹⁸ We hoped the use of two additional search engines would increase the our coverage of the Internet, and reduce the relative percentage of the “undernet.”¹⁹

Figure B - 1 (Appendix B) describes the web site selection process. We modified the process described in our original profile plan based on concerns raised by the Office of Research regarding the potential validity of our findings.²⁰ In the original plan, we proposed a sampling technique called *inverse* or *rare item* sampling. This is a sampling technique that is used when knowledge of a population (sampling frame) is incomplete and the objective is to identify a minimum number of cases that meet a specific set of criteria.

As displayed on Figure B–1, our key word searches yielded 17,907 commercial (.com) sites, which were stratified into one of six market segments. We then selected a systematic sample of the web sites. We then tested these web sites for the various characteristics displayed on Figure B–1.

Our goal was to test sufficient cases within each stratum to achieve a 90% level of confidence regarding inferences about selected population attributes (population characteristics), such as identification, payment and filing compliance. Our desired level of precision was 5%. In computing the sample size, we assumed the proportion of the population that would exhibit a particular characteristic was .5. This assumption

¹⁸ Lawrence, Steve & C. Lee Giles, “Searching the World Wide Web,” *Science*, Volume 280, April 3, 1998, p. 98 on-line: <http://www.neci.nec.com/~lawrence/>

¹⁹ A new generation of search engines has been developed since the time we extracted our original sample. A discussion of the relative merits of several of these new search technologies is found in the [Internet Primer – Information to Understand the Expanding Electronic Universe](#).

²⁰ *Profile Plan - Research Project 50.31 - Tax Compliance of Small Businesses Engaged in Electronic Commerce*, pp. 15 – 18, 30 – 33. We proposed to use *inverse* or *rare item* sampling in our original plan. This sampling technique is used when knowledge of a population (sampling frame) is incomplete and the objective is to identify a minimum number of cases that meet a specific criteria. See Cochran, William G. [Sampling Techniques](#), Third Edition, pp. 76 – 77 (1977).

maximized the required sample. As indicated on the Table 1, the level of confidence varies by stratum. Inferences to the population based on the sample statistics must take this into consideration.

Sample Size for E-Commerce Business Web Sites ²¹					
	Population	Precision	Confidence Interval	Required Sample	Actual Sample
Adult Entertainment*	3,628	+/- 5%	90%	251	345
Business Services**	2,117	+/- 5%	90%	240	211
Computer Sales/Service	2,772	+/- 5%	90%	247	264
Financial Services**	1,090	+/- 5%	90%	217	108
ISP*	3,351	+/- 5%	90%	251	343
Retail	4,949	+/- 5%	90%	257	360
	17,907				
* Actual sample size meets criteria for a 95% confidence interval.					
** Actual sample size did not satisfy the criteria for a 90% confidence.					

Table 1: Sample Size for E-Commerce Business Web Sites.

Data Sources

The external and internal data sources for the project are listed below.

Data Sources ²²	
<i>External Data Sources</i>	
1.Commercial Internet Search Engines	Yahoo
	Alta Vista
	HotBot
	Lycos
	Infoseek
	Excite
	Metacrawler
	Webcrawlers
2.Network Solutions	InterNIC Database of Domain Names
<i>Internal Data Sources</i>	
1.Integrated Data Retrieval System	Business Return Transaction File
	Individual Return Transaction File
2.Compliance Research Information System (CRIS)	1040 & 1120 CRIS Files

Table 2: Data Sources.

²¹ Internal Revenue Service, IRS Statistical Sampling Handbook, Document 7391 (11-88), p. 22.

²² Profile Plan - Research Project 50.31 - Tax Compliance of Small Businesses Engaged in Electronic Commerce, pp. 15 – 18. The data sources are the ones provided for in the original plan with the exception of the CRIS data. The CRIS data was added as source of historical data.

FINDINGS

Compliance of E-Commerce Businesses

1. *The Tax Gap for the E-Commerce Businesses in Our Study*
2. *The Internet Has Afforded Businesses the Opportunity to Hide Their Identities*
3. *The E-Commerce Businesses Studied Failed to File Tax Returns*
4. *Failure to Pay Was Not a Major Compliance Problem in 1997*
5. *The E-Commerce Businesses Studied Understated Their Taxable Income*
6. *Unreported Income is a Major Compliance Issue for the E-Commerce Businesses Studied*
7. *Proper Treatment of Web Site Development Costs is An Emerging Compliance Issue*
8. *Disallowed Expenses Involved Traditional Audit Issues*

E-Commerce Trends

9. *The Internet is Creating New Business Models*
10. *The Percentage of E-Commerce Businesses Reporting Losses is Declining*
11. *E-Commerce Businesses Out Perform Their Brick and Mortar Counterparts*
12. *Investment in Capacity Has Impacted the Profitability of Internet Service Providers*
13. *The New Borderless Economy is Challenging Existing Concepts in International Taxation*

Program Management

14. *E-Commerce Cases Produced Results Comparable with Those of Other Enforcement Programs*
15. *Traditional Audit Techniques May Not Be Suitable for Audits of E-Commerce Businesses*

Finding 1: *The Tax Gap for the E-Commerce Businesses in Our Study*

- ◆ *E-commerce businesses in our study contributed over \$6.2 million dollars to the tax gap for 1997.*
- ◆ *Ninety-one percent (91%) is associated with underreporting taxable income (reporting compliance)*
- ◆ *Seven percent (7%) of the tax gap is associated with failure to file, and the remainder with failure to pay.*
- ◆ *Ninety-four percent (94%) of the tax gap was associated with computer sales/service businesses, adult entertainment sites and ISPs.*

A central concept in evaluating compliance behavior is the tax gap. “The gross tax gap is defined as the amount of tax liability for a given tax year that is not paid voluntarily and timely...The net tax gap is the gross tax gap minus the amount of tax collected for the tax year in question through enforcement.”²³

The tax gap consists of three components:

- ◆ Nonfiling Gap – the amount of tax of liability owed by taxpayers who do not voluntarily and timely file required returns (Finding Number 3.)
- ◆ Underpayment Gap – the amount of tax liability that taxpayers report, but do not pay voluntarily and timely (Finding Number 4.)
- ◆ Underreporting Gap – the amount of tax liability not voluntarily reported by taxpayers that file returns (Findings 5 through 8.)²⁴

Table 3 on the following page displays the three components of the income tax gap by type of taxable entity. The tax gap as disclosed on Table 3 represents the amount of noncompliance detected in regard to the businesses in our sample. It is not a comprehensive estimate of the amount of noncompliance that is associated with electronic commerce.

It is important to recall that the income tax gap is comprised of taxes levied on individuals, including sole proprietorships, C corporations and certain trusts.²⁵ Passthrough entities are not subject to income taxation, except under very limited circumstances. The tax on income from a passthrough entity is borne by the individual shareholders or partners.

We found it difficult to distinguish between the compliance behavior of a closely held business and its principals. Over two-thirds of the businesses in our study are closely

²³ Internal Revenue Service, *Federal Tax Compliance Research: Individual Tax Gap Estimate for 1985, 1988, and 1992*, Publication 1415 (4-1996), p. 1.

²⁴ *Ibid.*, *Federal Tax Compliance Research: Individual Tax Gap Estimate for 1985, 1988, and 1992*, p. 2

²⁵ Some trusts are passthrough entities under Subchapter J of the Internal Revenue Code.

held corporations or passthrough entities and we found that adjustments made to the tax returns of these entities had a correlative effect on the tax return of the related principals. Therefore, included on Table 3 are the results the examination of shareholders and partners.²⁶

E-Commerce Income Tax Gap (by Type of Tax)						
	1997			Prior/Subsequent Years		
	Income Tax			Income Tax		
	Average	Median	Total	Average	Median	Total
Nonfiler*						
Sole Proprietors	\$13,237	\$4,015	\$ 211,784	\$3,121	\$2,510	\$12,486
Partners/ Shareholders	\$18,198	\$12,918	\$145,558	\$9,666	\$7,500	\$48,331
Corporations	\$13,055	\$5,420	\$104,467	\$11,107	\$10,597	\$44,069
			\$461,809			\$104,886
Underpayment**						
Sole Proprietors	\$5,823	\$1,367	\$81,507	\$5,756	\$6,882	\$63,321
Partners/ Shareholders	\$12,119	\$12,119	\$24,147	\$14,270	\$2,584	\$99,890
Corporations	\$521	\$562	\$ 2,087	\$16,502	\$13,214	\$99,014
			\$107,741			\$262,225
Underreporting***						
Sole Proprietors	\$17,980	\$2,708	\$952,929	\$ 12,448	\$ 5,372	\$124,479
Partners/ Shareholders	\$10,812	\$1,651	\$670,333	\$ 26,673	\$ 5,055	\$400,103
Corporations	\$122,645	\$2,703	\$4,009,038	\$ 128,571	\$15,226	\$1,385,589
			5,632,300			\$1,910,171
			6,201,850			\$2,277,282
* Based on delinquent returns or substitute returns secured or filed by the examining agents.						
** Based on cases with insufficient remittances within one year of filing.						
*** Based on cases where the revenue agent proposed a change in tax liability.						

Table 3: E-Commerce Income Tax Gap by Type of Tax.

We found that compliance problems are not one-year events, but frequently involve multiple tax years.²⁷ For example, 39 % of the small corporations in our sample

²⁶ A discussion of the importance of accounting for the interaction in the tax behavior among related taxpayers and taxable years may be found in: Slater, Karen, *Beyond Single Returns: The Related Returns Database*, The IRS Research Bulletin 1993/1994, Publication 1500, p. 58 (Rev. 4 – 94.)

²⁷ The scope of our study was income tax compliance 1997. Examination of prior and subsequent income tax returns was up to the discretion of the individual agent. Several agents also secured delinquent employment tax returns in the computer sales/service and ISP markets.

E Commerce Related Employment Tax			
	Average	Median	Total
Failure to File	\$ 2,415	2,799	\$ 31,390
Underreporting	\$18,102	\$ 717	\$108,613

reported a net operating loss for 1997.²⁸ A net operating loss incurred in taxable year 1997 may be carried back up to three years and carried over for up to fifteen years.²⁹ The carryback and carryover provisions allow the taxpayer to claim a deduction against the taxable income of the carryback and carryover years.

Table 4 recasts the data from Table 3 by market segment.

E-Commerce Income Tax Gap (by Market Segment)						
	1997			Prior/Subsequent Years		
	Income Tax			Income Tax		
	Average	Median	Total	Average	Median	Total
Nonfiler*						
Business Services	\$500	500	\$500	\$0	\$0	\$0
Computers	\$17,363	\$2,802	\$69,450	\$16,452	\$16,452	\$32,905
Finance	\$27,240	\$27,240	\$27,240	\$0	\$0	\$0
Gray	\$4,202	\$4,202	\$8,404	\$0	\$0	\$0
ISP	\$13,363	\$7,500	\$227,177	\$7,543	\$7,500	\$67,889
Retail	\$18,434	\$6,400	\$129,038	\$2,046	\$2,046	\$4,092
			\$461,809			\$104,886
Underpayment**						
Business Services	\$3,309	\$500	\$9,928	\$2,883	\$131	\$8,648
Computers	\$10,656	\$1,589	\$63,936	\$8,601	\$6,882	\$60,208
Finance	\$4,548	\$4,458	\$4,458	\$0	\$0	\$0
Gray	\$4,432	\$1,204	\$22,161	\$24,082	\$24,608	\$96,327
ISP	\$2,594	\$2,594	\$5,188	\$10,609	\$2,584	\$53,046
Retail	\$690	\$692	\$2,070	\$8,799	\$9,510	\$43,996
			\$107,741			\$262,225
Underreporting***						
Business Services	\$2,030	\$723	\$12,180	\$4,440	\$6,505	\$6,814
Computers	\$54,675	\$2,364	\$1,670,005	\$70,834	\$5,472	\$1,353,300
Finance	\$8,464	\$2,970	\$84,649	\$4,482	\$4,482	\$4,482
Gray	\$115,950	\$2,050	\$3,478,505	\$84,786	\$7,299	\$339,145
ISP	\$6,715	\$1,872	\$295,455	\$28,963	\$5,750	\$200,402
Retail	\$3,268	\$2,339	\$91,506	\$2,009	\$585	\$6,028
			\$5,632,300			\$1,910,171
			\$6,201,850			\$2,277,282
* Based on delinquent returns or substitute returns.						
** Based on cases with insufficient remittances.						
*** Based on cases where revenue agent proposed a change in tax liability.						

Table 4: E-Commerce Income Tax Gap by Market Segment.

²⁸ See Finding 10.

²⁹ IRC Section 172. For tax years beginning after August 5, 1997, the carry back period is two years and the carry forward period is twenty years.

Tables 3 and 4 contain information on tax delinquencies for prior and subsequent tax years. We included this data in the table because it represents a substantial amount of tax owing and due. However, it should not be taken as the total of the e-commerce tax gap for those years because the expansion of the examination of these returns was up to the discretion of the individual agent and not under the control of the national project coordinator.

Adult entertainment, computer sales/service, and ISPs accounted for a disproportionate amount of the e-commerce tax gap.

Percentage of E-Commerce Tax Gap Attributable to ISPs, Computer Sales/Service, and Adult Entertainment Sites.	
Percentage of Web Sites Studied*	
◆ Percentage of Commercial Web Sites Identified	55%
◆ Percentage of Commercial Web Sites Subject to Detailed Testing	58%
◆ Percentage of Web Sites Subject to Field Audits	65%
Percentage of E-Commerce Tax Gap**	
◆ Percentage of the Tax Gap Associated with Nonfiling	66%
◆ Percentage of the Tax Gap Associated with Underpayment	85%
◆ Percentage of the Tax Gap Associated with Underreporting	97%
◆ Percentage of the Total E-Commerce Tax Gap	94%
* Based on Figure B-1 (Appendix B)	
** Based on Table 4	

Table 5: Percentage of Tax Gap Attributable to ISPs, Computer Sales/Service, & Adult Entertainment Sites.

The next seven findings explore the components of the tax gap as detected. Much of our analysis will focus on these three market segments. However, the fact that these three market segments accounted for a majority of the detected e-commerce tax gap should not lead to the premature conclusion that businesses operating in the retail/wholesale, business services and financial services market segments are more compliant.

Many of the small businesses engaged in retail and wholesaling on the Internet in 1997 were sole proprietorships that were just venturing into electronic commerce. Internet retailing and wholesaling, especially in the consumer goods industry, were less mature relative to the ISPs, computer sales/service, and adult entertainment sites.

Business and financial services are part of the intermediary or broker layer of the Internet Economy. Similar to retailing and wholesaling, the brokering of information and financial transactions over the Internet was an emerging market segment in 1997, and only a small number of sites met the criteria for inclusion in the project.

Finding 2: *The Internet Has Afforded Businesses the Opportunity to Hide Their Identities*

- ◆ Registrants of commercial domain names are not required to submit proof of identity.
- ◆ Twelve percent (12%) of the owners of the web sites tested could be not identified on IRS databases.
- ◆ Seventeen percent (17%) of the retail and wholesale, and business service web sites could not be identified.
- ◆ Five percent (5%) of the web sites selected for study were inactive within 45 days of being identified.
- ◆ Buried, hidden, or tertiary web sites that operate below registered second level domain names were not part of our test. No formal registration of these sites is required. The proliferation of unregistered web sites will exacerbate the identification problems we encountered with the owners of the second level domain names.

Before we can assess whether a business has complied with the tax laws or contributed to the tax gap, we must first be able to identify its owners. The custom of establishing a business alter ego or DBA (doing business as) is a widely accepted commercial practice that predates the modern era. The Uniform Commercial Code, incorporation laws, and business registration rules adopted by the states prescribe procedures for establishing business entities and identities. The respective Attorneys General, the Federal Trade Commission, and other government agencies all work to ensure that ownership of business enterprises are transparent in the interest of consumer protection, minimizing commercial disputes, and ensuring accountability in commercial transactions.

The Internet is a multi-national media conducted over computer assisted open networks. As discussed above, decentralization and a bottoms-up system of governance have characterized the evolution of the Internet from a defense oriented scientific research network to commercial marketplace. The management of the domain name system (DNS) and registration of domain names was privatized by the Department of Commerce in late 1998 by the transference of the *Internet Assigned Numbers Authority* (IANA) to the *Internet Corporation for Assigned Names and Numbers* (ICANN). The ICANN is a “global, non-profit consensus organization” whose mission is the technical management of the DNS. The ICANN accredits and regulates the proprietary entities that register domain names. Currently, twenty-five (25) proprietary entities have authority to register domain names with eighty-five (85) additional companies in the process of receiving accreditation as registrars.³⁰

A primary mission of the ICANN is to support the “private-sector bottom-up coordination” of the DNS. Accordingly, the ICANN prescribes rules to facilitate coordination among the accredited registrars, especially in the critical area of resolution

³⁰ Internet Corporation for Assigned Names and Numbers. “Status Report to the Department of Commerce,” June 15, 1999, Washington D.C., p. 1. On-line: <http://www.icann.org/statusreport-15june99.mtm>.

of domain name disputes. However, the ICANN, like its predecessor at the Department of Commerce, has not established minimum documentation standards or “know your customer rules” for its accredited registrars. Therefore, a business merely submits a form with the requisite registration fee to an accredited registrar to reserve a particular domain name. The registration fee is typically less than \$100. The accredited registrar is not required to document or verify the identifying information submitted by the business.³¹

We tested to see if the lack of verification for registration of domain names had a negative any impact on our ability to ascertain the principals or beneficial ownership of a commercial web site. The results of our test are presented in Figure 2 below.

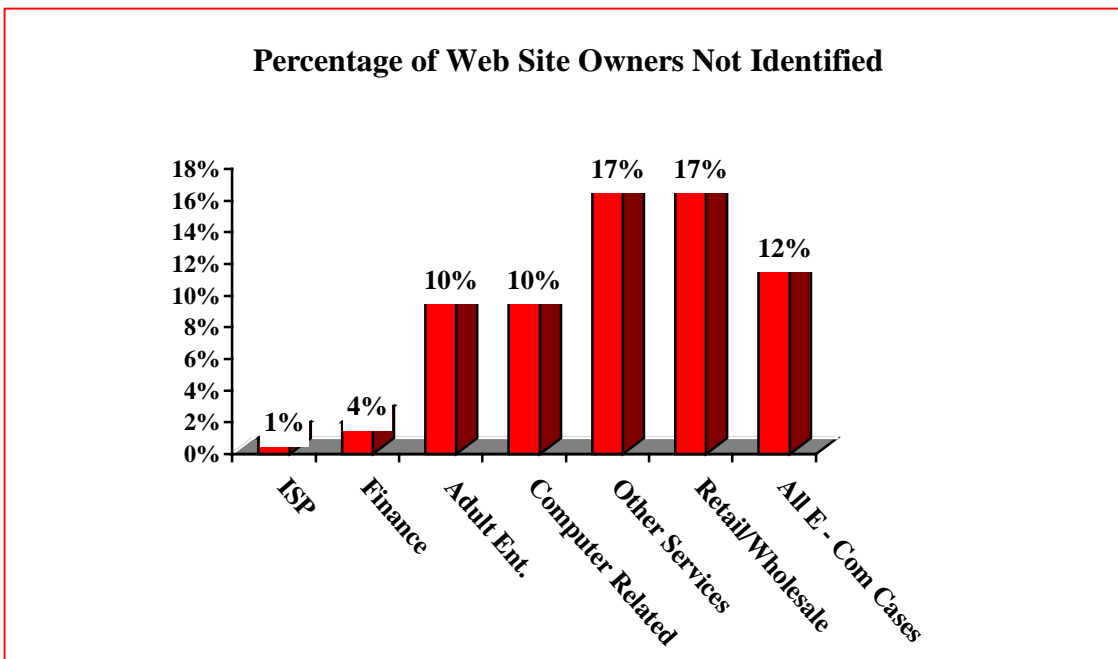


Figure 2: Percentage of Web Site Owners Not Identified

We were not able to identify the beneficial owners of twelve percent (12%) of the 1,631 web sites tested. This means that we were not able to take the registration information provided to *Network, Solutions, Inc.*, and associate it with a taxpayer or a filed income tax return on IRS data systems.

When we look at the rates for the individual market segments it is significant to note that the failure to ascertain web site ownership was not a problem for the finance and ISP market segments. Why didn’t our research encounter the same difficulties within these two market segments in comparison with the other four? The answer may be found in the role third parties play in regulating these market segments.

³¹ Internet Corporation for Assigned Names and Numbers. *Registrar Accreditation Agreement* On-line: <http://www.icann.org/nsi/icann-raa-04nov99.htm>. & *List of Accredited and Accreditation Qualified Registrars*, On-line: <http://www.icann.org/registrars/accredited-list.html>.

ISPs generally enter multi-year lease agreements for T1 lines, servers and other telecommunication equipment from regulated utilities and other telecommunication providers. These larger entities require documentation of financial status and verification of credit worthiness. The need to establish an independent financial identity may motivate these web site owners to have relatively transparent identities. Additionally, prospective customers, especially business customers, who must choose between going with one of the larger telecommunication companies or a small provider, may motivate the latter to be more forthright in disclosing ownership.

A similar phenomenon may be at work among financial service providers. Individuals that provide financial services, such as financial planners and securities dealers, are typically required to maintain professional licenses, certifications, or register under their resident states' "blue sky" laws. The need to maintain professional licensures or certifications may serve as a deterrent to concealment of the web site owner's identity.³²

Retail and wholesale businesses and business service providers were at the other extreme at 17%. The high failure to identify rate within these market segments may be attributable to the fact that these are the newest layers of e-commerce businesses and many of them are very small.³³ For example, over 50% of the retail and wholesale are operated as sole proprietorships.

We expected adult entertainment sites to have the highest failure rates in regard to identification of ownership. This industry has a somewhat reptilian reputation that is frequently identified with the underground economy. Although substantial at 10%, the fact the rate was not higher may be the result of the informal "know your customer rules" that exist within this market segment. Adult entertainment sites are frequently linked to other adult sites in order to increase traffic through the site. Therefore, if an operator of a site wants to be linked or be part of a larger network of sites he/she may need to be more open about their identity. Additionally, many adult entertainment performers establish their own site to market their own materials.

It is important to remember that all of the sites we tested were second level domain name sites. This means that someone had to register the domain name, even if surreptitiously. However, many commercial web sites operate under or below another web site name. They are described in the industry literature as hidden, buried or tertiary sites. There is no formal registration of the domain names of these sites, except with owner of the higher-level domain name. The proliferation of commercial web sites operating below other web sites will only exacerbate the identification problem.

In addition to not being able to identify the beneficial owners for 12% of the sites, we found that 5% of the 1,631 sites were inactive within 45 days of initial identification.

³² An IRS supported study entitled *Business Licensing as a Nonenforcement Approach to Increasing Tax Compliance in the Liquor Industry* found a potential statistical association between disclosure of identity, filing compliance, and the requirement to maintain a state license. See: IRS Research Bulletin, Publication 1500 Rev. 11-99), p. 104.

³³ The layers of the Internet economy are discussed under Finding 9.

Finding 3: The E-Commerce Businesses Studied Failed to File Tax Returns.

- ◆ Ten percent (10%) of the commercial web sites tested failed to file a 1997 income tax return.
- ◆ Sixteen percent (16%) of ISPs failed to file a 1997 income tax return.
- ◆ Twelve percent (12%) of the C corporations and 13% of the sole proprietorships failed to file their 1997 income tax returns.

The first component of the tax gap is the tax associated with the failure to file tax returns. The IRS has undertaken various initiatives over the last decade to get taxpayers “back on the rolls.” The perception was that the failure to file has a cascading effect on tax compliance. Once a taxpayer fails to file a tax return, the taxpayer will continue to be a nonfiler until the behavior is changed through some form of education or enforcement. New businesses are perceived to be at risk for filing problems because they may not be aware of their filing obligations, or they are more focused on building a customer base for the business.

What Is a Nonfiler?

A non-filer is a taxpayer that does not “voluntarily and timely file required returns.”

Source: **Internal Revenue Service, Federal tax Compliance Research: Individual Income Tax Gap Estimates for 1985, 1988, 1992 Publication 1415 (Rev. 4-96) Washington D.C, 1996, p. 2.**

We saw under Finding 2 that the procedures for registering a domain name allow a business to mask the identities of its principals. Does the fact that the Internet loosens or completely severs a business from its “brick and mortar” moorings by allowing it to adopt a digital alter ego increase the risk of filing non-compliance?

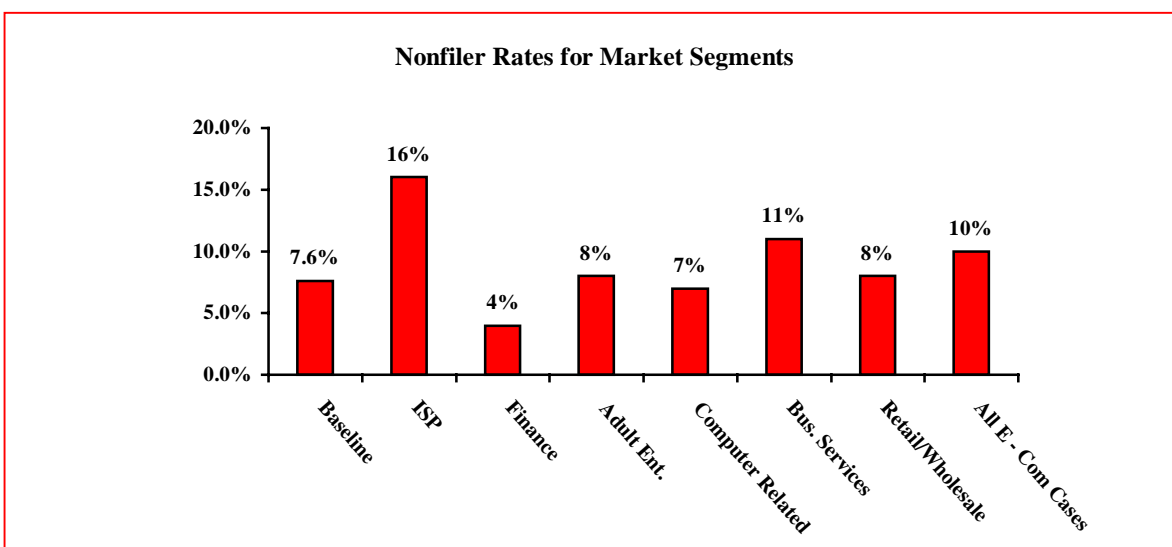


Figure 3: Nonfiler Rates for Market Segments.³⁴

³⁴ Internal Revenue Service, Nonfiler Team, 12/08/99. The baseline data was courtesy of the North Texas District Office

ISPs exhibited the highest failure to file rates at 16%. We have no explanation as to why ISPs are at a higher risk for filing noncompliance relative to other e-commerce businesses. The characteristic that differentiates ISPs from other businesses is that they are a product of the build-out of the Internet. The other market segments included in our study can trace their lineage to traditional brick and mortar businesses. The unique role of the ISP in the Internet Economy is discussed under Findings 9 and 12.³⁵

We recast the nonfiler data by business entity. This is similar to other IRS studies of nonfilers that focus on the failure to file particular types of tax returns. We combined the three types of passthrough entities, S corporations, limited liability companies and partnerships, into one category.

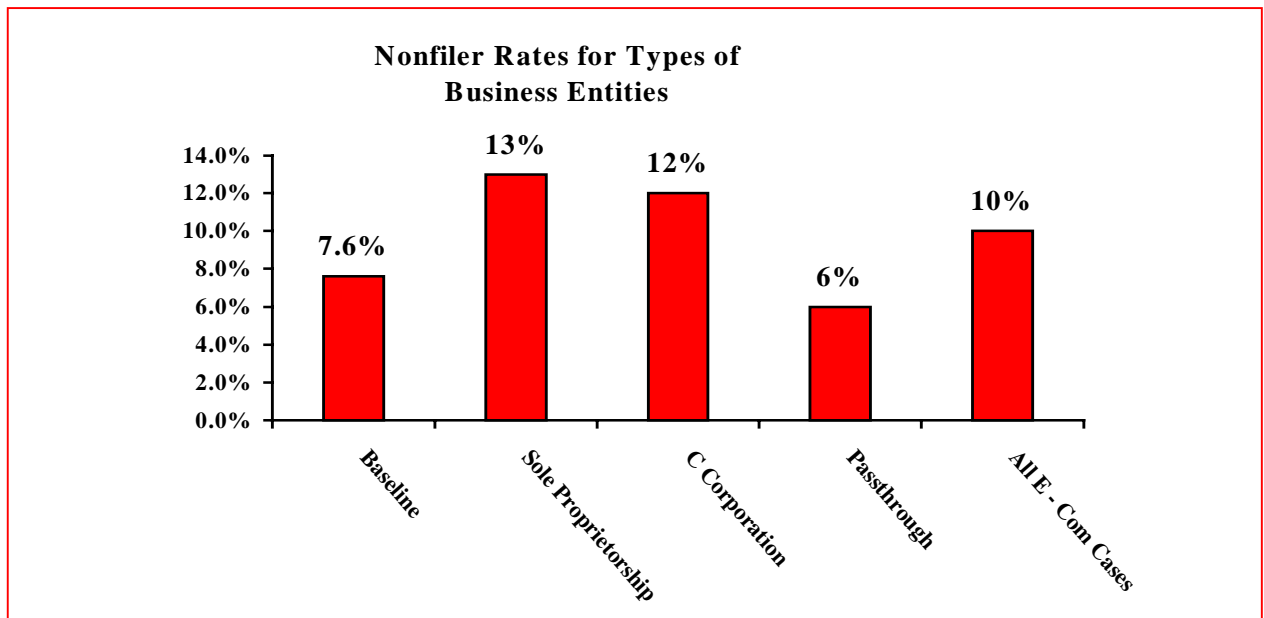


Figure 4: Nonfiler Rates for Types of Business Entities

The failure to file rate by sole proprietorships and C corporations is double the rate for passthrough entities. We think this is attributable to the fact that passthrough entities, especially S corporations and LLCs, are relatively sophisticated tax planning tools in the small business arena.³⁶

Are e-commerces at higher risk for nonfiling? Baseline filing compliance data for 1997 is not yet available. However, the nonfiling rate for all self-employed individuals for 1996 was estimated to be 7.6% based on a new nonfiler study. This is almost 5 percentage points less than the 12.3% rate exhibited by the sole proprietorships in our study.

³⁵ The compliance problems we encountered with ISPs do not appear to be unique to the United States. Anecdotal information from tax officials of other OECD member states indicates a similar pattern of noncompliance by ISPs operating within their respective countries.

³⁶ Lee, John, *Choice of Small Business Tax Entity: Facts and Fictions*, Tax Analysts, 2000 TNT 74-80, pp. 8 – 9. (April 2000). Miller, Daniel, *The Strange Materialization of the Tax Nothing*, Tax Analysts 2000 TNT 84-87, p. 4 (May 2000).

Finding 4: *Failure to Pay Was Not A Major Compliance Problem in 1997*

- ◆ *Thirty-six percent (36%) of the businesses were operated as sole proprietorships, 33% by C corporations and the remainder were operated by non-taxable passthrough entities.*
- ◆ *Fifteen percent (15%) of the sole proprietorships filed balance due returns, whereas only 4% of C corporations filed balance due returns.*
- ◆ *The average balance due for 1997 for sole proprietorships was \$5,823. The comparable amount for C corporations was \$521.*

The second component of the compliance trilogy is the failure to pay. A major research and compliance strategy at the IRS is the reduction in the accounts receivable balances and the prevention of pyramiding of tax delinquencies. We limited the scope of our study of payment problems to income tax. We did not include employment or excise taxes in our study.

We first determined which entities in our study would be liable for income tax.

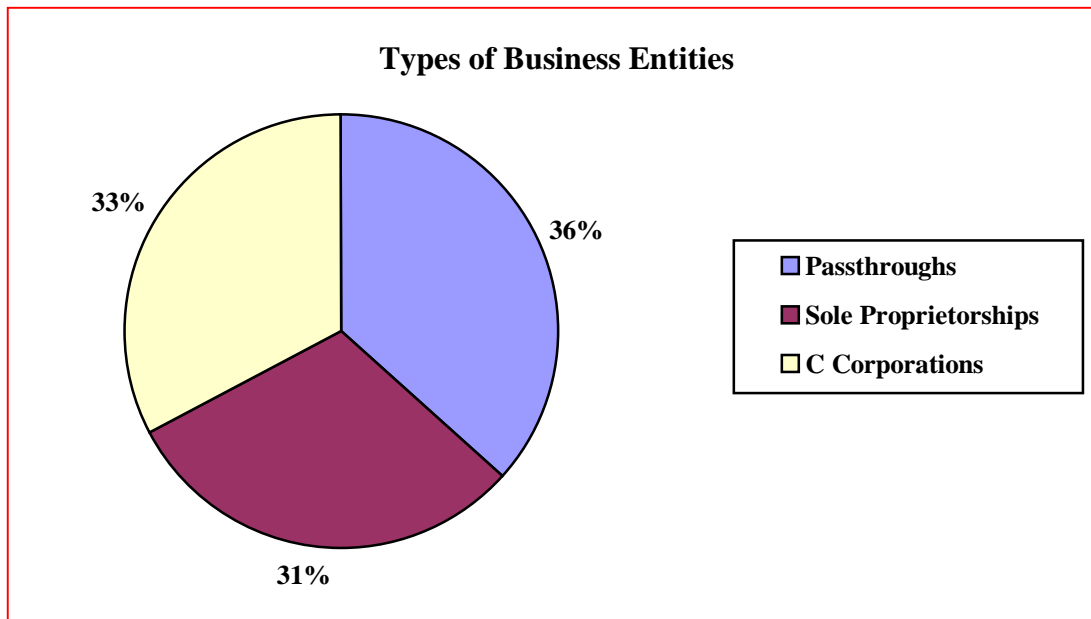


Figure 5: Types of Business Entities

The selection of an appropriate type of business entity is based on a large number of factors, including tax planning.³⁷ Other issues include the risks associated with the

³⁷ The driving issue underlying any tax planning for a business is the potential for double taxation of distributed corporate earnings. Corporate earnings are taxed when the corporation earns them and taxed a second time when they are distributed to shareholders as dividends. This issue is further complicated by the different tax rates for individuals and corporations. The 1986 Tax Reform reversed the historic pattern of corporate tax rates (IRC 11) exceeding individual tax rates (IRC 1). Furthermore the 1986 Reform Act eliminated the "General Utilities Doctrine" whereby a corporation would not recognize gain on the

business, financial needs, number of principals, whether the principals actively participate in the business, compensation needs of the principals, and the anticipated life of the business. As indicated on Figure 5, 36% of the businesses in our sample are owned by passthrough entities that are not subject to income tax at the entity level.³⁸ The remaining 64% of the businesses are operated by taxable entities.

We found it useful to differentiate between sole proprietorships and C corporations in our analysis because of the different ways in which their income tax is computed. Figure 6 shows the percentage of C corporations in our study that reported a net profit in comparison with the percentage that reported a positive tax liability.

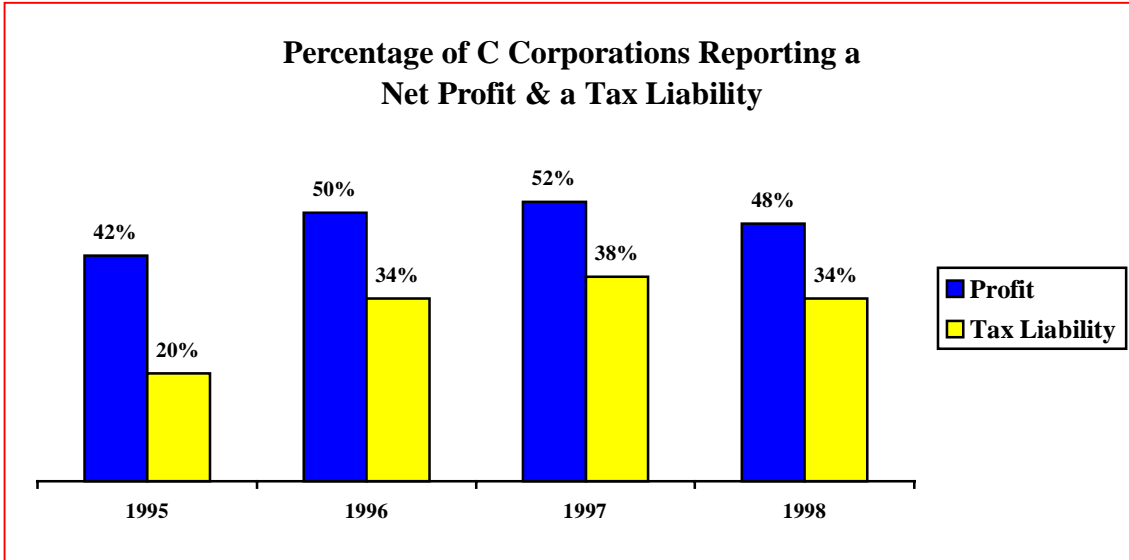


Figure 6: Percentage of C Corporations Reporting a Net Profit and a Tax Liability.

The difference between the two percentages is the result of the net operating loss deduction (NOLD). A net operating loss (NOL) is the excess of allowable deductions over total income, with certain adjustments. An NOL may be carried back to the two taxable years preceding the loss year or up to twenty following the loss year. A corporation is permitted to claim a net operating loss deduction (NOLD) up to the amount of taxable income for a year, with certain adjustments.³⁹ For example, 8% of the corporations reporting a profit in 1997 claimed an NOLD carried forward from a prior year and, accordingly, reported zero taxable income.⁴⁰

distribution of appreciated property. From 1987 through 1993 the highest corporate tax rate exceeded the highest individual tax rate. This pattern was reversed again when the Revenue Reconciliation Act of 1993 raised the highest individual rate to 39.6% and the highest corporate to 35%. The double taxation of corporate earnings and the periodic inversion of the individual and corporate tax have been the motivation behind the growth of new types of business organizations, such as limited liability companies. This analysis is predicated on the assumption that the business owner is sophisticated with regards to tax planning.

³⁸ Under limited circumstances S corporations may be subject to entity level income tax. None of these situations applied to the cases in our study.

³⁹ IRC 172 and the attendant regulations prescribe the rules for computing and claiming a NOLD.

⁴⁰ A corporation with zero taxable income may still find itself liable for the alternative minimum tax prescribed by IRC 56.

Figure 7 displays the comparable data for sole proprietorships.

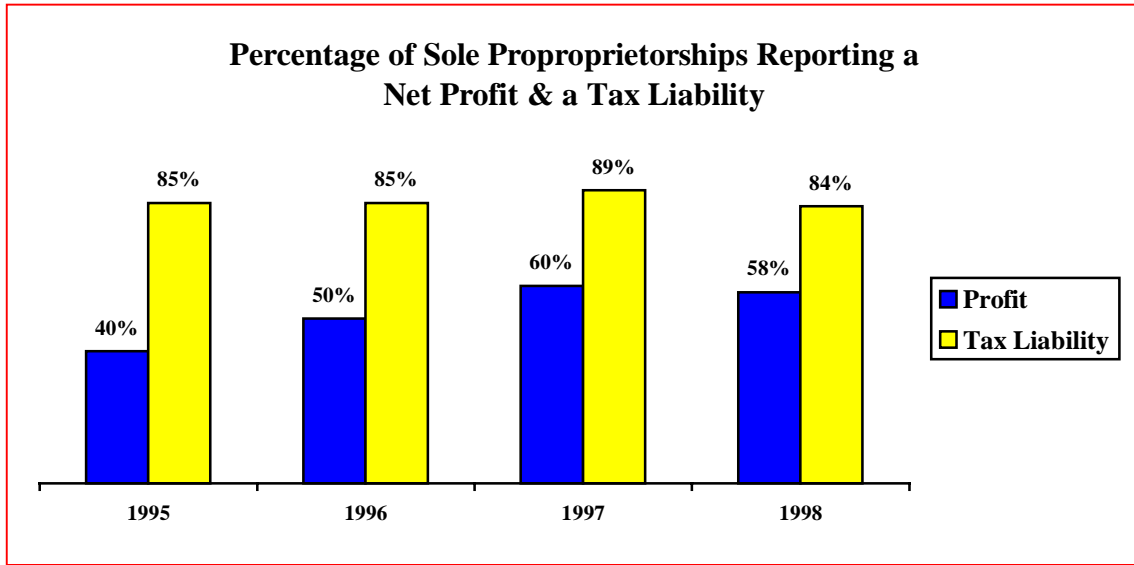


Figure 7: Percentage of Sole Proprietorships Reporting a Net Profit & a Tax Liability.

Sole proprietorships display an opposite pattern and present a somewhat more complex problem. Whether a sole proprietor pays tax on the net profit from his/her business depends on the other income and expenses reported on his/her individual tax return. This accounts for the higher percentage of sole proprietorships that reported a tax liability than a profit from their e-commerce business. The other potential sources of income may include wages, passive income or other income from self-employment.

Figure 8 below shows the percentage of businesses that filed balance due returns.

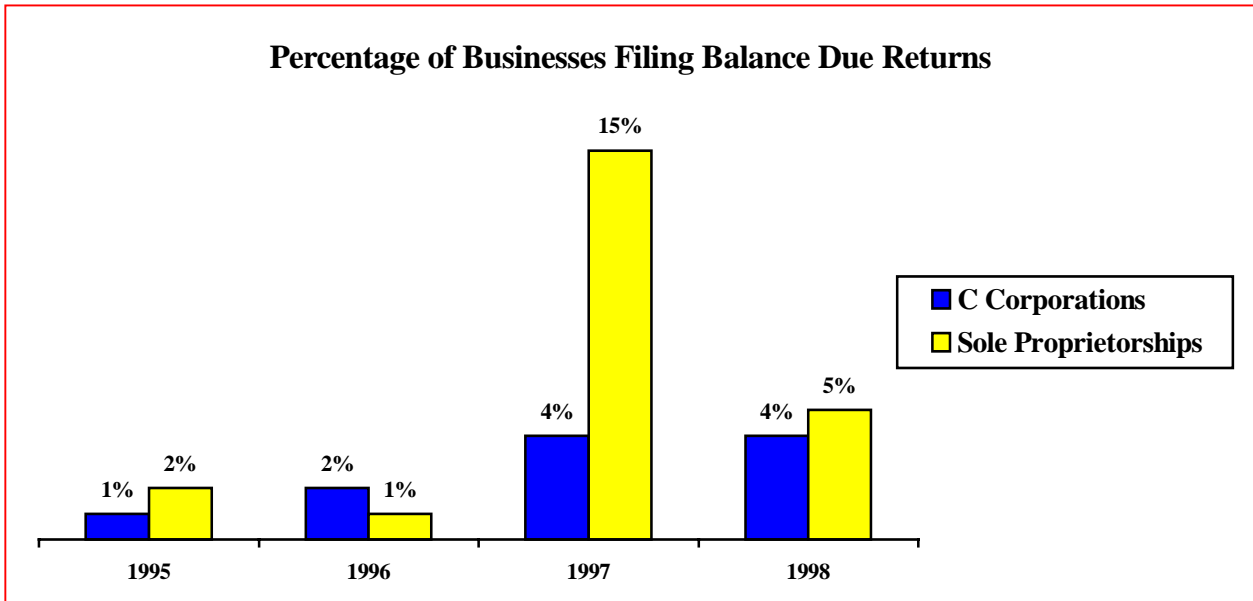


Figure 8: Percentage of Businesses Filing a Balance Due Return.

The significant spike in the percentage of balance due returns filed by sole proprietorships in 1997 is primarily attributable to businesses that opened in 1996 which became profitable for the first time in 1997.

As displayed on Table 3 (Finding 1), The average amount of underpayment by sole proprietors was \$ 5,823 and the average corporate underpayment was \$521.

In summary, e-commerce businesses operating as sole proprietorships were the primary contributor to the underpayment gap in 1997.

Finding 5: *The E-Commerce Businesses Studied Understated Their Taxable Income*

- ◆ The results of field examinations indicated that e-commerce businesses are understating their taxable income. Thirty-seven percent (37%) of the audits resulted in changes to taxable income. The highest average changes were found in the adult entertainment, computer sales/service, and ISP market segments.
- ◆ Overall, fifty-three percent (53%) of these adjustments specifically involved e-commerce related activities.
- ◆ The percentage of taxable income underreported (detected net misreporting percentage (nmp)) exceeded 30%. Adult entertainment sites (46%), ISPs (39%) and computer sales /service (27%) exhibiting the highest rates among the six market segments.
- ◆ Thirty-eight percent (38%) of the changes to taxable income involved unreported income. Sixty-four percent (64%) of the unreported income involved e-commerce.

Field examinations were conducted to determine the accuracy of the returns filed by the e-commerce businesses in our sample. Thirty-seven percent (37%) of the audits resulted in changes to the taxable income of the respective e-commerce business.⁴¹ An additional 8% of the businesses filed at least one delinquent income tax return with the examining agents.

Net Misreporting Percentage and Net Misreporting Total by Market Segment

There are several measures of return accuracy or indicators of compliance used by the IRS. We selected the net misreporting percentage (NMP). “The NMP for a given return line item is defined as the percentage ratio of the net misreported total (NMT) to the sum

⁴¹ The Examination Division defines a changed case as one that involves a change in tax liability. We focused our analysis on changes in taxable income because it allowed us to compare changes between taxable and nontaxable entities. Eighty-five (85%) of the changes proposed by the agents were agreed to by the respective taxpayers. The remaining cases involved changes in taxable income that were not agreed to by taxpayer. A portion of the unagreed cases included nonfilers who refused to file their returns. The examining agents in these instances filed a substitute for return.

of the absolute values of what should have been reported.” For income items, the NMT is the “sum of all the amounts underreported minus the sum for all the amounts overreported for a given item.” Conversely, the NMT for a deduction or a credit is “the sum of all amounts overstated minus the sum of all amounts understated for the item.”⁴²

The NMP is a relatively newer concept. It replaces the voluntary reporting percentage (VRP), which is the ratio of the difference between “the total amounts of income or other related line items that are voluntarily reported for any given year, and the corresponding correct amounts that should have been reported.”⁴³ The advantage of the NMP over the VRP is that the VRP may be distorted by the presence of negative and positive values in the denominator. The use of the absolute value in the denominator of the NMP eliminates this distortion.⁴⁴

We computed the NMP and the NMT for changes in taxable income for the returns in our sample. We based our computation on those taxpayers that voluntarily filed a return.⁴⁵

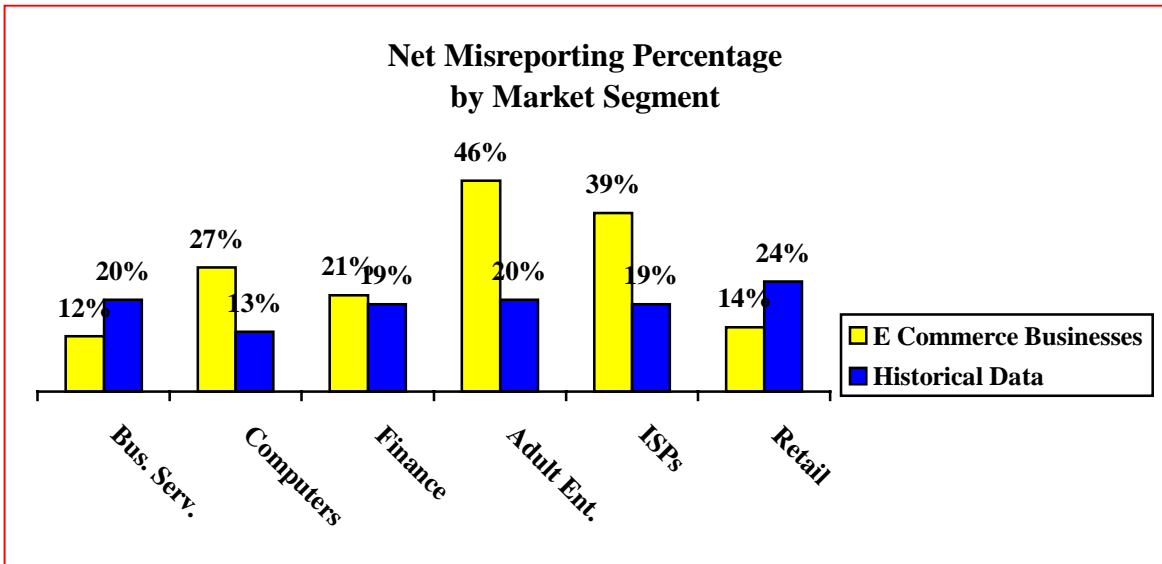


Figure 9: Net Misreporting Percentage by Market Segment.

⁴² Internal Revenue Service, *Federal Tax Compliance Research: Individual Tax Gap Estimates for 1985, 1988, 1992*, Publication 1415 (Rev. 4 –96), p. 3. A detailed discussion of the NMP may be found in Ho, Chih-Chin, “Reporting Noncompliance Evidence From Timely Filed and Secured Delinquent Individual Returns”, *The IRS Research Bulletin*, Publication 1500 (Reve.9-94), p. 25.

⁴³ Internal Revenue Service, *Income Tax Compliance Research: Gross Tax Gap Estimates and Projections for 1973-1992*, Publication 7285 (3-88), p. 4.

⁴⁴ The NMP equals 100 percent minus the VRP in those instances where the amounts that have been reported are either all negative or positive.

⁴⁵ Inclusion of nonfilers in the computation results in adding the entire amount of taxable income into the NMT and the numerator of the NMP. This inflates the value of the resulting averages.

The historical data included on Figure 9 is from the 1120 CRIS files for 1995. We selected principal business activity codes that were comparable to the businesses in our study.⁴⁶ The detected NMPs for the ISPs, computer sales/service, and the adult entertainment businesses are more than double the comparable percentages based on the historical data. They are also materially higher than the other three e-commerce market segments.

The average and median NMTs displayed in Figure 10 are based on cases where an agent proposed a change in taxable income reported on a filed return.⁴⁷

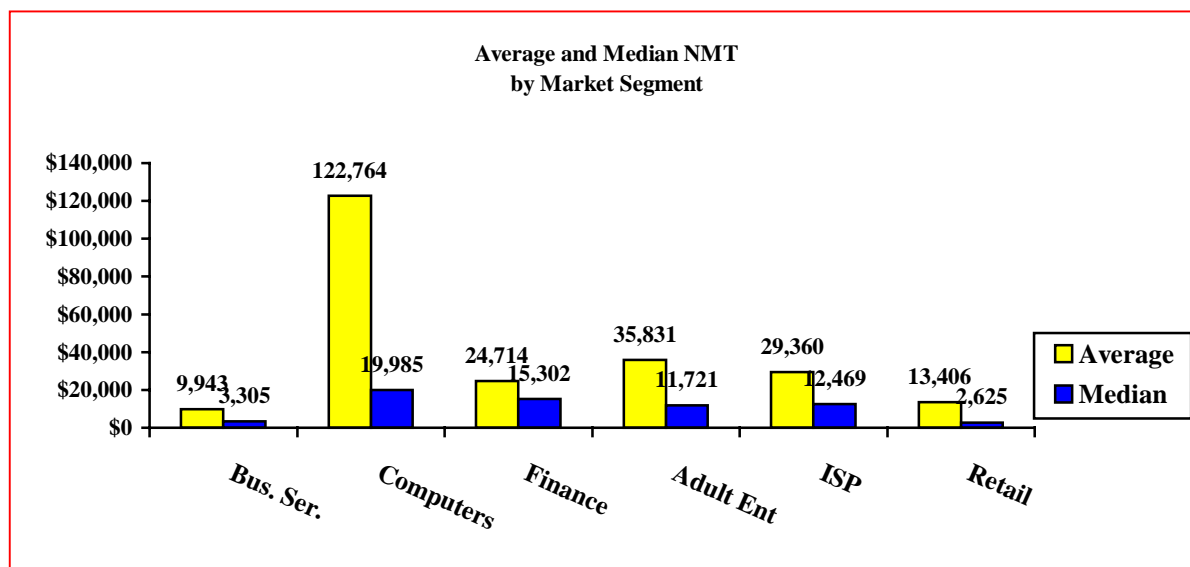


Figure 10: Average and Median NMT by Market Segment.

ISPs, computer sales/service, and adult entertainment sites have the highest average and median NMTs for the businesses in our sample. This further underscores our concerns with the reporting compliance of these three market segments.

Net Misreporting Percentage and Net Misreporting Total by Type of Entity

As discussed elsewhere in this report, tax liability is an entity driven concept. Accordingly, we felt it beneficial to compare the NMPs and NMTs by type of business entity. Figures 11 and 12 on the next page present this information.

⁴⁶ The historical data aggregated by PBA codes only gives us an approximation of the market segments we included in our study, especially in the adult entertainment and ISP segments. The former has never been designated by a unique code and the latter did not exist in 1995.

⁴⁷ We eliminated one adult entertainment case in the computation of the Average NMT for data presented in Figure 10. The proposed change to taxable income of \$10 million distorts the computation of the average NMT.

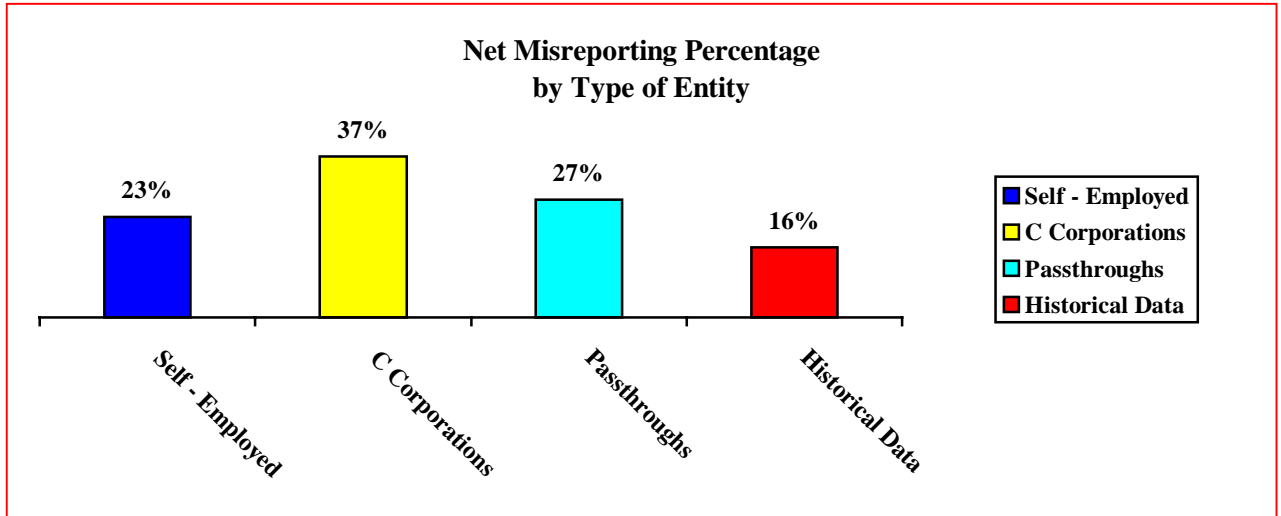


Figure 11: Net Misreporting Percentage by Type of Entity.

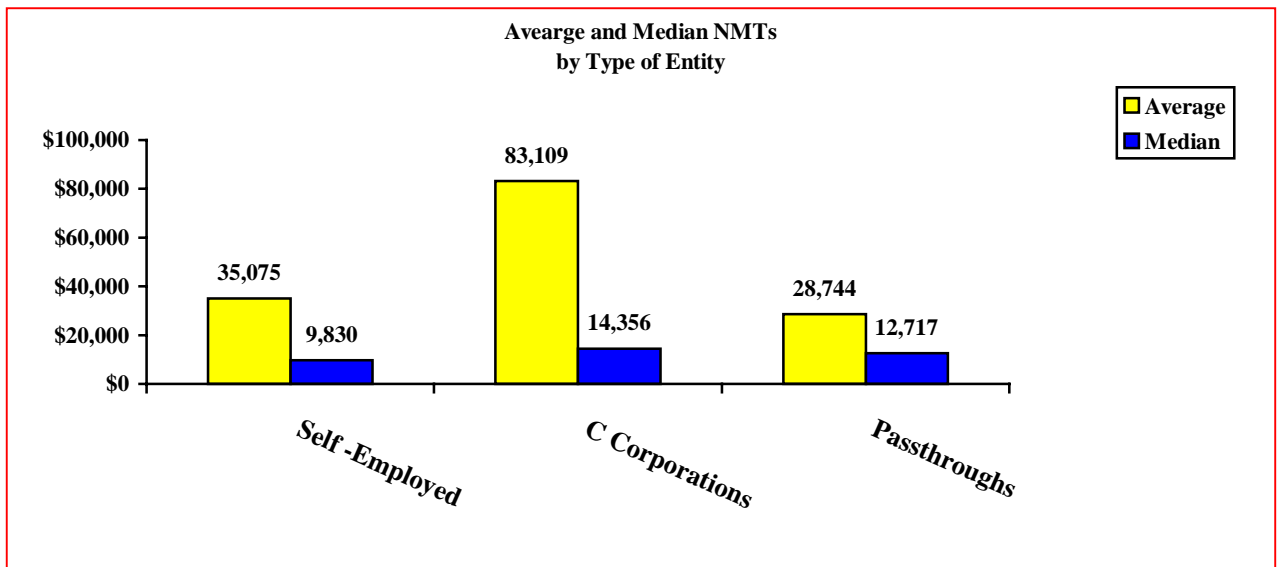


Figure 12: Average and Median NMT by Type of Entity

C corporations exhibit the most significant reporting compliance problems. The detected NMPs and their average and median NMTs for C corporations exceed the comparable figures for other entities. Additionally, none of the NMPs of e-commerce entities in sample compare favorably with the historical data.⁴⁸

⁴⁸ We eliminated one C corporation in the computation of the Average NMT data presented in Figure 12. The proposed change to taxable income of \$ 10 million distorted the computation and produces a misleading result.

Finding 6: Unreported Income is a Major Compliance Issue for the E-Commerce Businesses in Our Study

- ◆ The median amount of unreported income was \$ 15,000 and the average amount was \$ 87,000. (Note: Calculations do not include an examination that produced an unusually large change to taxable income. Inclusion of this amount distorts the average.)
- ◆ The majority of the unreported income cases involved deposits of the income into local banks. Manipulation of on-line electronic payment systems and non-depository electronic cash did not play a significant role.
- ◆ The primary audit technique used by revenue agents to identify unreported income was the bank deposit analysis.
- ◆ The unreported income cases were concentrated in the adult entertainment, computer sales/service and ISP market segments.

The third and largest component of the tax gap is the underreporting of tax liability. It is also referred to as reporting compliance or return accuracy. Underreporting accounted for 91% of the tax gap. This percentage is consistent with the gross income tax gap estimates for all taxpayers.⁴⁹

We used the results of the field audits to measure return accuracy. The following figure displays the major categories of issues.

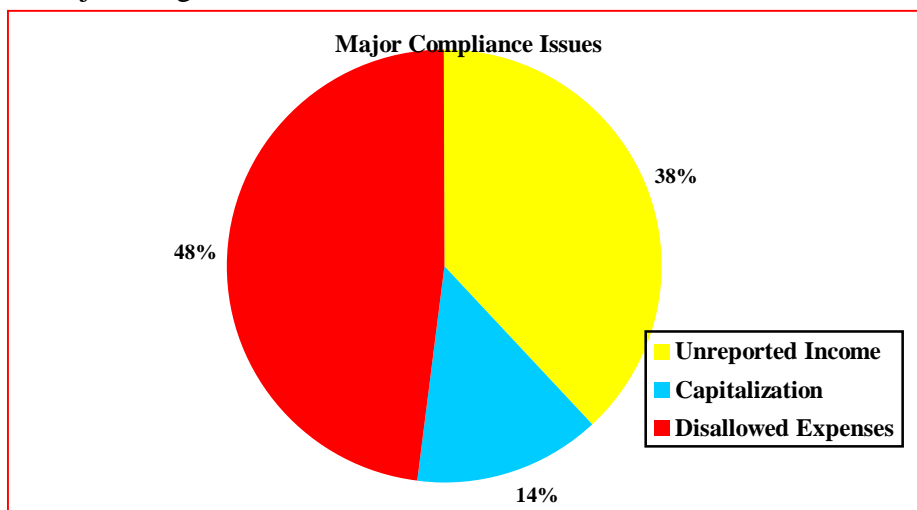


Figure 13: Major Compliance Issues

Thirty – eight percent (38%) of the proposed changes involved unreported income.⁵⁰ This equates to 13% of the cases actually examined. The median change was \$15,000

⁴⁹ Internal Revenue Service, *Income Tax Compliance Research Gross Tax Gap Estimates and Projections for 1973 – 1992. Publication 7285 (March 1988)*, p. 3.

⁵⁰ The other categories of issues are discussed under findings 7 and 8.

and the average change is over \$ 87,000.⁵¹ These cases were concentrated in the ISP, computer sales/service, and adult entertainment market segments.

The average and median dollar values of these changes are presented in Figure 14.

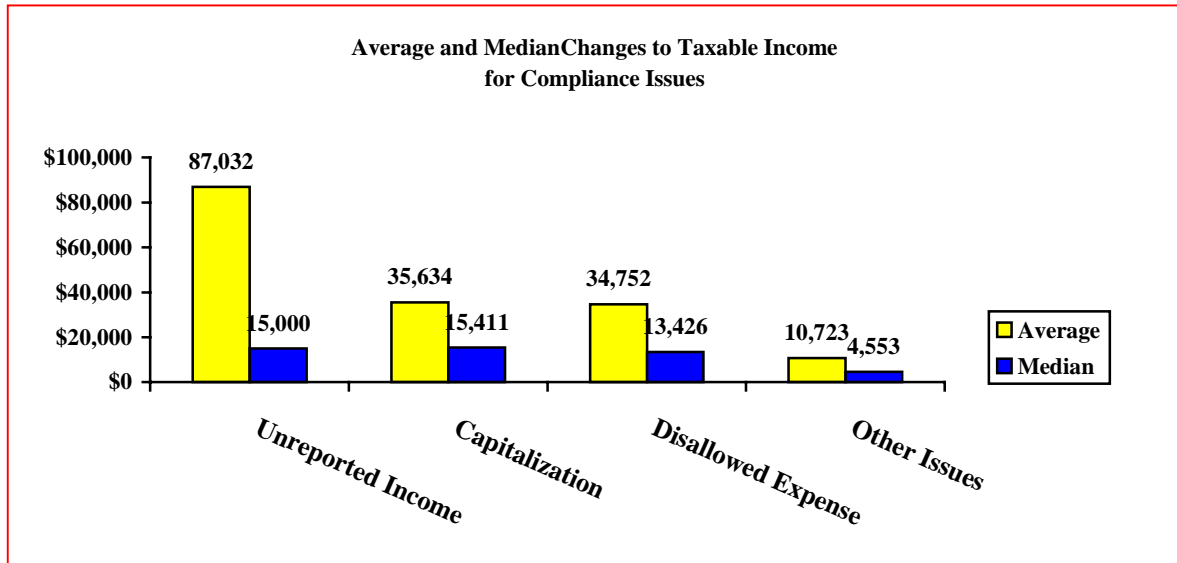


Figure 14: Average and Median Changes to Taxable Income for Compliance Issues.

As discussed above, the subject matter of our study was small businesses. One of our working hypotheses is that the ability of owner/managers of closely held businesses to override internal accounting controls (the cash business problem) may be exacerbated by the migration of small business to the Internet. We were particularly concerned that the Internet would reduce the cost of masking an identity (see Finding Number 2), the nexus of transactions (see Finding Number 13) or be used to launder the proceeds of unreported business income to an undisclosed domestic or foreign bank account.

The first step in analyzing the recordation and abstraction of income from a business is to ascertain what types of remuneration does the business accept. As detailed on Step 3 on our E-Commerce Business Model (Figure B – 2 in the Appendix B) an e-commerce business entity must decide which methods of payment it will accept.⁵² Acceptable methods of payment include credit and debit cards, checks and bearer instruments, cash, bartering and bartering credits, and non-depository electronic payment systems. The last category includes the family of Internet based payment systems such as E Cash, Beenz, etc.⁵³

A corollary to our hypothesis regarding the potential misuse of the Internet as a tool for tax evasion is the belief that the key mechanism for effecting such malfeasance would be credit/debit cards and electronic payment systems. We felt that electronic payment

⁵¹ These figures do not include \$10 million in unreported income from an adult entertainment site.

Inclusion of this amount distorts the average dollar value.

⁵² This model is discussed in more detail under Finding 9.

⁵³ See Craft, Gary R. & Shoop, Carter B., *Breaking Up the Financial Intermediary*, Deutsche Bank, (April 2000) for a discussion of the new Internet payment systems.

systems would be more portable than cash and cash equivalent methods of payment that are normally identified with the underground economy.

The revenue agents examining the project cases reported the following:

- ◆ 48% of ISPs and 49% of adult entertainment sites accepted credit cards on-line. The participation rate in on-line credit card programs was less than 20% for the other market segments.
- ◆ 26% of the businesses accepted credit/debit card payments off line. Email or telephone numbers were the primary vehicles for submission of credit card numbers. The latter included 800 and 900 numbers.
- ◆ 80% of the businesses accepted checks as payment and only 12% accepted cash. These percentages were consistent across market segments.
- ◆ None of the businesses accepted non-depository forms of electronic cash or participated in any non-depository electronic payment systems.

We expected to see a considerably higher percentage of on-line credit/debit card payment procedures and considerably fewer acceptances of payments via checks. However, the continued popularity of non-digital forms of payment is consistent with the fact that the overwhelming majority of these businesses, other than ISPs and adult entertainment sites, are “brick and click” rather than purely digital businesses.⁵⁴ Accordingly, businesses that operate in a purely digital environment, such as ISPs and many adult entertainment web shops, are more likely to accept or encourage customers to complete transactions on-line.

Do the unreported income cases display any common characteristics? The following summarizes some of the unique features of these cases.

Sources of Unreported Income

- ◆ The acceptance of credit/debit cards was strongly associated with unreported income. Sixty-seven percent (67%) of the businesses with unreported income accepted credit/debit cards. However, the use of electronic payment systems (on-line credit card processing) and the acceptance of checks were **not** strongly associated with unreported income cases.
- ◆ Eighty-four (84%) of the unreported income cases involved income from the operation of the commercial web site.
- ◆ Branches of U.S. banks located within the city of the taxpayer’s residence were the depositories for the unreported income that was **actually identified** with one notable exception. An adult entertainment site deposited funds in an offshore bank account located in a known tax haven country.

⁵⁴ The concepts of digital and brick and click business are discussed under Finding 9.

The unreported income cases were found in the following market segments:

Market Segment

- ◆ Computer sales/services businesses accounted for 26% of the cases involving unreported income. The majority of these businesses reported revenues between \$100 thousand and \$1 million. (Computer sales/service businesses comprised 19% of the businesses examined.)
- ◆ Adult entertainment businesses accounted for 17% of the unreported income cases. The majority of these businesses reported less than \$ 100 thousand in revenues. (Adult entertainment sites constituted 14% of the businesses examined.)
- ◆ ISPs accounted for 26% percent of the unreported income cases. The majority of these businesses reported revenues between \$100 thousand and \$1 million. (ISPs accounted for 31% of the businesses examined.)
- ◆ Financial Services accounted for 6% of the businesses examined, but 10% of the cases involving unreported income.
- ◆ The average and median amount of unreported income by market segment is as follows:

Market Segment	Median Amount of Unreported Income	Average Amount of Unreported Income
Business Services	\$8,991	\$13,635
Computer Sales/Service	\$29,080	\$253,827
Financial Services	\$23,810	\$37,612
Gray	\$12,008	\$1,127,025
ISP	\$9,247	\$34,427
Retail	\$20,070	\$22,667

- ◆ Corporations and passthrough entities with sales revenue between \$100 thousand and \$1 million accounted for 40% of the cases with unreported income.
- ◆ Sole proprietorships with revenues of less than \$100 thousand accounted for 20% of the unreported income cases.

The primary technique used by the revenue agents to ferret out unreported income was the traditional bank deposit analysis. This method of reconstructing income involves reconciling the flow of funds through a taxpayer’s bank accounts with the income reported on the tax return. The excess of bank deposits over reported income and

non-taxable sources of funds is included in the taxpayer's income pursuant to IRC Section 61.

An innovative technique used by some revenue agents involved the use of flowcharting transactions through the web site. Flowcharting enabled the examiners to identify specific groups of transactions that were omitted from income. The need to develop new audit techniques for e-commerce businesses is discussed under Finding 15.

Finding 7: *Proper Treatment of Web Site Development Costs is an Emerging Compliance Issue*

- ◆ The current industry practice is to expense the web site development costs, except for hardware and bundled software. Sixty-seven percent (67%) of the businesses in our study deducted the costs either in 1997 or in a prior taxable year.
- ◆ Agents capitalized the costs in 12% of the cases where the taxpayer had previously claimed them as a current period deduction. The average amount capitalized was \$35,000.
- ◆ The highest average amount capitalized was found in adult entertainment sites, computer sales/service businesses, and ISPs.

The proper treatment of the costs associated with the development of a commercial web site and the capitalization of web site development costs are two of the most contentious tax issues in electronic commerce.

The following summarizes the components of a web site.⁵⁵

- ◆ Hardware Costs - Purchase or lease of a web site server.
- ◆ Software Costs - Purchase or the internal cost of developing software to operate the web server, create the web pages, display the web site content, including the compilation of the Hypertext Mark-up Language (HTML) for each web page.
- ◆ Web Site Content - Graphics, sound, and video, including on-line catalogues that are used to market products or services.
- ◆ Cost of Acquiring a Domain Name – The cost of initial registration or purchase of an existing business web site name.

⁵⁵ The current approach in the practitioner community is to break-up of the costs of web site development into one of these 4 categories. Software and hardware costs are capitalized (IRC 263) and recovered over 3 years or 5 years (IRC 167 & IRC 168.) Self-developed software may be eligible for expensing under the terms of Rev. Proc. 69 – 21 in a manner analogous to research and development expenditures (IRC 174). The proper treatment of web site content focuses on whether it constitutes advertising, which is not subject to capitalization, or an intangible asset that must be amortized over its life. Domain names are being considered as being analogous to trade mark or trade names and, accordingly, and may be eligible for recovery under IRC 197. See: MacNeil, C. Ellen and Sandra K. Van DeWalle, *eBusiness – Tax Treatment of Web Site Development Costs*, 2000 TNT 49-107 Special Reports (2000); Hardesty, David E., Electronic

As a mandatory comment in their examinations, we asked the revenue agents to evaluate the taxpayer's tax treatment of the web site development costs.

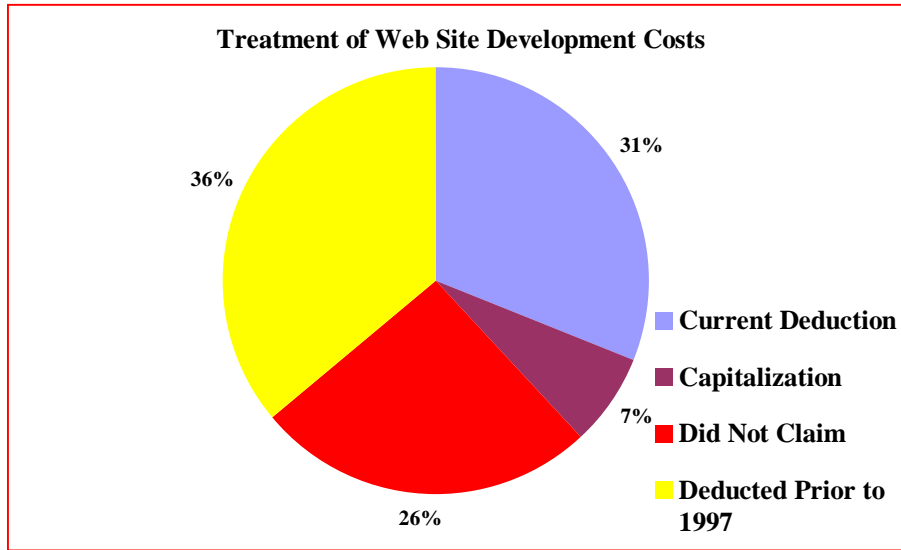


Figure 15: Treatment of Web Site Development Costs.

Sixty-seven percent (67%) of the business deducted the cost of development of the site either in 1997 or in a prior tax year, whereas only 7% capitalized the expenses into an asset. The remaining 26% did not claim a deduction for the costs.

A summary of the revenue agents' findings is displayed below.

Treatment of Web Site Development Costs

- ◆ Seventy-three (73%) of computer sales/service businesses and 96% of financial service businesses claimed a deduction for web site development costs in 1997 or in a prior taxable year.
- ◆ Thirty – seven (37%) of retail establishments did not claim a deduction for any web site related development costs. This particular market segment was dominated by sole proprietorships.
- ◆ Fifty-three percent (53%) of sole proprietorships did not claim a deduction for web site development costs.
- ◆ Seventy percent (70%) of passthrough entities and 85% of C corporations claimed a deduction for web site development costs either in 1997 or in a prior taxable year. Ninety-one percent (91%) of these entities had less than \$250 thousand in assets.

The revenue agent’s determination that the web site development costs was expensed does not imply that the taxpayer’s tax treatment of the cost of web site development was incorrect. However, the examining revenue agent denied a current deduction in a number of cases and, accordingly, capitalized the costs as an asset.⁵⁶

The following summarizes the revenue agents’ findings regarding this issue.

**Revenue Agents’ Evaluation of
Treatment of Web Site Development Costs**

- ◆ The revenue agents capitalized the cost of web site development for 12% of the cases where the taxpayer had expensed the cost of development on their 1997 tax return.
- ◆ The overall median amount capitalized was \$15 thousand and the overall average amount capitalized was \$35 thousand. The median and average amounts within the individual market segments were as follows:

Market Segment	Median Amount Capitalized	Average Amount Capitalized
Business Services*	\$3,610	\$3,610
Computer Sales/Service	\$62,208	\$48,908
Financial Services*	\$6,694	\$6,694
Gray	\$11,489	\$60,389
ISP	\$28,292	\$32,325
Retail*	\$9,938	\$9,938
*The median and average amounts are the same because of the small number of cases with this issue.		

- ◆ The expenses that the revenue agents capitalized were predominantly hardware and bundled software expenditures. No attempt was made to capitalize internal labor costs. There was one instance where the agent capitalized the cost of advertising and compilation of the on-line catalog as a start-up cost.
- ◆ The revenue agents did not change a taxpayer’s deduction of the web site development costs based on the following reasons: 1) the dollar value of the proposed adjustment was minimal (less than \$5,000), 2) the revenue agent did not want to place a prior year return under audit, or 3) the revenue agent accepted the taxpayer’s classification of the costs as current period expense.

⁵⁶ The statutory authority for the examining agent’s adjustment was IRC Section 263 (denial of deduction for capital expenditures) or IRC Section 195 (denial of deduction for start-up expenditures). In most instances, the agent allowed the taxpayer to recover the cost of the asset over a 3 to 5 year period per IRC Sections 167 or 168 depending on the nature of the capitalized item.

Finding 8: Disallowed Expenses Involved Traditional Audit Issues

- ◆ Forty-eight percent (48%) of the changes made to taxable income by revenue agents involved the disallowance of expenses.
- ◆ Thirty-nine percent (39%) of these adjustments were specifically related to the operations of commercial web sites.
- ◆ The types of audit adjustments were typical of those found during the course of small business examinations, such as failure to adequately substantiate deductions, economic performance, and non-deductible equity related payments.

As displayed in Figure 13 (Finding 6), we observed that 48% of the changes to taxable income involved the disallowance of non-deductible expenditures claimed as business deductions. The disallowed items included dividend distributions and other payments to investors, errors in recordation, inadequate documentation, and timing errors (economic performance and errors in the recovery period for an asset.)⁵⁷ These expenses did not include expenditures associated with capitalization of web site development costs (see Finding 7).

These audit issues are typical of the recurring compliance problems that the IRS has encountered with small and medium size businesses, including sole proprietorships.⁵⁸ Our particular concern in the instant case was determining if any portions of these disallowed expenses are associated with operation of the commercial web site.

We found that many of these audit issues involved Step 4 (Record Transaction) of our E-Commerce Business Model (see Figure B-2 in Appendix B). In particular, examining agents found that a number of the businesses did not maintain adequate books and records.⁵⁹ This problem was particularly endemic among sole proprietorships that operated in the retail and business services market segments.

⁵⁷ The relevant sections of the Internal Revenue Code are:

Sections Governing the Allowance of Business Deductions	
IRC 162	Trade or Business Expenses
IRC 167	Depreciation
IRC 168	Accelerated Cost Recovery System
IRC 262	Personal Living Expenses
IRC 263A	Uniform Capitalization
IRC 274	Disallowance of Certain Entertainment Expenses
Sections Governing the Timing of Deductions	
IRC 446	Methods of Accounting
IRC 461	Economic Performance
IRC 471	Requirement to Use Inventories
IRC 481	Change of Accounting Method

⁵⁸ General Accounting Office, *Recurring Issues in Tax Disputes Over Business Expense Deductions*, GAO/GGD-95-232 (September 1995).

⁵⁹ Reg. 1.6001-1(d) gives the District Director authority to issue a Notice of Inadequate Records. No Inadequate Records Notices were issued during this project.

Many of the businesses, especially ISPs and computer sales/service establishments, have purchased software programs, such as *Quicken*, to record transactions. Revenue Procedure 98-25 prescribes the record keeping rules for automated records systems.

However, there were two problems identified by the examining agents when dealing with automated record keeping systems. First, many businesses did not have adequately trained staff to properly classify and record transactions, proper segregation of duties within the staff, and owner involvement in the recordation process. These staff related problems are categorized as internal accounting control problems and are typical of small businesses.

Second, the web site based transactions did not automatically interface with the record keeping systems. We found this problem to be particularly surprising since we anticipated at the start of the study that many e-commerce businesses would have adopted more sophisticated electronic record keeping systems that rely on electronic imaging rather than conventional hardcopy systems.⁶⁰

In analyzing the expense information, we separated the disallowed expenses between those that were directly associated with the operation of the web site, and all other transactions, including those that were associated with the non-e-commerce portion of the business. Figure 16 displays the ratio of e-commerce related adjustments to total adjustments.

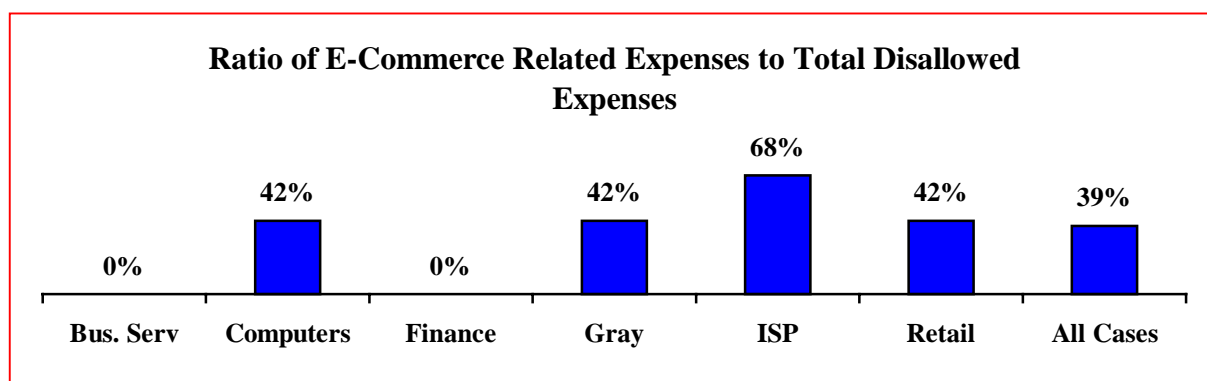


Figure 16: Ratio of E-Commerce Related Expenses to Total Disallowed

The ratio describes the percentage of disallowed expenses that are directly associated with the operation of the commercial web site. As expected, ISPs have the highest ratio because they derive the overwhelming amount of their revenues from the Internet. The average amounts disallowed are displayed on Table 6 on the following page.

⁶⁰ The guidelines for electronic imaging systems are found in Notice 96-10, 1996-1 CB 363.

Average Disallowed Expenses (Selected Market Segments)		
Market Segment	Average Disallowed Expenses	Average Disallowed Expenses Directly Associated with E-Commerce
Computer Sales/Service	\$24,867	\$11,006
Adult Entertainment	\$43,133	\$6,532
ISP	\$26,778	\$25,073
Retail	\$ 11,953	\$4,954

Table 6: Average Disallowed Expenses (Selected Market Segments).

Computer sales/service, adult entertainment, and ISPs are the market segments with the most significant compliance problems in this area.

Finding 9: *The Internet is Creating New Business Models*

- ◆ The Internet Economy is estimated to have grown by 46% between 1998 and 1999.
- ◆ Small and medium size businesses account for 73% of all Internet generated revenue.
- ◆ One-third of the e-commerce businesses did not exist before 1996.
- ◆ New e-commerce business models, such as virtual corporations, are being created. These new models will accelerate the process of disintermediation.

The build-out of the Internet and the growth of electronic commerce are transforming the landscape of the U.S. and global economy. This finding summarizes these trends and discusses the impact of electronic commerce on business organization, decision-making and tax compliance.

The Department of Commerce in its *Emerging Digital Economy II* observed that many private forecasts or estimates of electronic commerce made in early 1998 were too conservative and needed to be revised upward.⁶¹ To remedy this problem, the Department of Commerce has proposed a research agenda to assess both the size and impact of electronic commerce, and the Bureau of the Census plans to measure the digital economy as part of the Economic

“In five years’ time, all companies will be Internet companies or they won’t be companies at all.”

**Andy Grove,
Chairman of Intel
The Economist
June 26, 1999**

⁶¹*The Emerging Digital Economy II*, Chapter 1, p 5.

Census of 2002.⁶² Researchers for the Organization for Economic Development and Cooperation (OECD) have also placed the compilation of reliable and comprehensive estimates of the current and future volume of electronic commerce as a priority item on their research agenda.⁶³

The Center for Research in Electronic Commerce (CREC) at the University of Texas at Austin has developed a

comprehensive estimate of the volume of electronic commerce. Their estimate is based on a four-layer model of the Internet Economy that combines business to business and business to consumer transactions.⁶⁴

The Four Layers of the Internet Economy

- ❖ **Infrastructure Layer** – Telecommunications Companies, Internet Service Provides, Sellers of Communication Equipment.
- ❖ **Internet Applications Layer** – Software Products and Services, Web Site Design and Support.
- ❖ **Intermediary Layer** – Brokering of Transactions, Bartering, Aggregating Content
- ❖ **Internet Commerce Layer** – Business to Business and Business to Consumer Sales.

Table 7 on the following page displays the CREC's estimates of the revenues and growth of the four layers. We have included the name of the equivalent market segment included in our study for reference. The CREC researchers estimate that Internet sales for 1999 increased by 68% over 1998 to approximately one-half trillion dollars. They further estimate that the U.S. Internet Economy will exceed \$1.2 trillion by 2002.⁶⁵

Is small business sharing in this growth? According to the CREC researchers, the top 10 companies in their study accounted for 27% of all Internet generated revenue. All of these companies were large business organizations. However, small and medium size businesses accounted for the remaining 73% of all Internet generated revenue. Furthermore, they found that one-third of these companies did not exist in 1996.⁶⁶

⁶² U. S. Department of Commerce, *Understanding the Digital Economy, Data Tools and Research*, p. 1 on-line: <http://www.digitaleconomy.gov/> (May 1999); Haliwanger, John & Ron S. Jarmin, *Measuring the Digital Economy*, p. 13 on-line: <http://mitpress.mit.edu/UDE/haliwanger.pdf> (May 1999).

⁶³ Organization of Economic Cooperation and Development, *Measuring Electronic Commerce*, p. 13 on-line: http://www.oecd.org/dsti/sti/it/ec/prod/e_97-185.htm (May 1997)

⁶⁴ Center for Research in Electronic Commerce, *The Internet Economy Indicators*, p. 2 on-line: http://www.internetidcators.com/key_findings_oct_99.html (October 1999).

⁶⁵ Fort Worth Star Telegram, "University of Texas Study Sets On-line - Business Revenues at \$507 Billion", October 28, 1999. Forrester Research projects business to business transactions will burgeon to \$2.7 trillion and on-line retail sales will increase to \$184 billion by 2004. Forrester Research uses a narrower definition of electronic commerce than CREC. Forrester Research, *Forrester Research Finds 71% of Companies Will Link to eMarketplaces by 2001*, on-line: <http://www.forester.com/er/press/release/0,1769,254,ff.html> (March 2000); *On-line Retail To Reach \$184 Billion By 2004 As Post-Web Retail Era Unfolds*, on-line: <http://www.forrester.com/er/press/release/0,1769,164,FF.html> (September 1999)

⁶⁶ Ibid, Fort Worth Star Telegram.

Estimated Revenues and Growth Rate for the Internet Economy			
CREC Layer	Research Project # 50.31 Market Segment	Estimated Revenues for 1998	Rate of Growth First Qtr. 1998 To First Qtr. 1999
Internet Infrastructure Layer	Internet Service Providers	\$ 115 B	39 %
Application Layer	Computers & Computer Products	\$ 56 B	38%
Intermediary/Broker Layer	Financial Services & Business Services	\$ 58 B	25%
Internet Commerce Layer	Retail & Wholesale, Computers Products, & Adult Entertainment	\$ 102 B	78%
(Less Overlap)		(\$ 31B)	
Total		\$ 300 B	46%

Source: Center for Study of Electronic Commerce

Table 7: Estimated Revenues and Growth Rate for the Internet Economy.

Small businesses that have established a presence on the Internet are growing at a faster rate than their “brick and mortar “ counterparts according to a survey conducted by the *American City Business Journals*. They found that small companies with a web site grew 11% per year in each of the 3 prior years compared to 8% per year for those without a web site. A small business was defined as a proprietary entity with less than 100 employees.⁶⁷

The contribution of the Internet to commercial expansion is underlined by the results of a survey of chief executive officers of 449 fast growing small and medium size businesses. Internet revenues were estimated to account for 6% of the product revenues and 11 % of service revenues of these companies.⁶⁸

Between January 1995, the first full year the Internet became a business tool, and January 1997 the number of commercial (.com) domain names increased from 27,000 to over 800,000. The majority of these new registrations took place in 1996.⁶⁹ We segmented the businesses in our sample between those that were operating before 1996 and those that opened their doors in 1996. Nineteen ninety-six (1996) was the first year of operation for 17% of the businesses in our sample.

⁶⁷ American City Business Journal, *Small Business Grows On-line*, on-line: http://www.demograpahics.com/publications/ad/98_ad/9802_ad/ad980218.htm (February 1998).

⁶⁸ PricewaterhouseCoopers, *Fast Growth Service Companies Getting Twice the Bang As Product Companies from The Net*, PricewaterhouseCoopers Finds, on-line: <http://www.pwcglobal.com/extweb/ncpressrelease> (August 1999).

⁶⁹ *The Emerging Digital Economy*, chapter 2 p. 8; *The Emerging Digital Economy II*, Chapter 1, p 1.

What accounts for the relatively high percentage of adult entertainment businesses that opened in 1996? Sellers of pornography and operators of gambling establishments are frequently restricted concerning where they may operate. Furthermore, the stigma associated with these businesses may serve as a barrier to consumption. The Internet is changing distribution channels and allowing these businesses access to a broader group of consumers than may be available to traditional “brick and mortar” establishments.

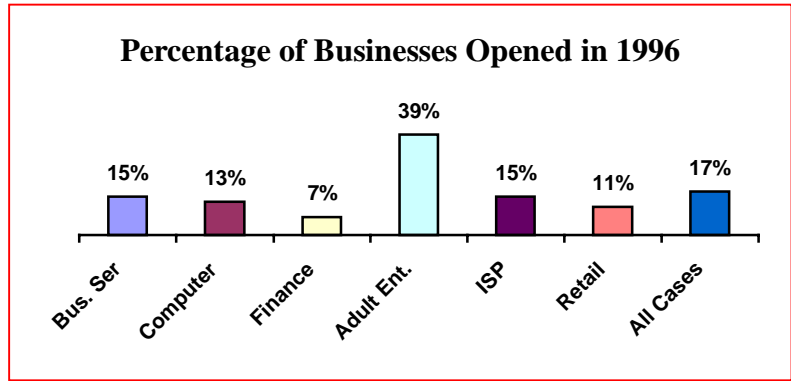


Figure 17: Percentage of Businesses Opened in 1996

We classify e-commerce businesses as being either “digital” or “brick and click” businesses. Digital businesses are those that use the Internet as their exclusive medium for receiving orders and payments. They do not have a brick and mortar store front. In comparison, brick and click businesses use both digital and traditional means of meeting with customers. Figure 18 displays the percentage of businesses that operate exclusively through the Internet in comparison with those that operate both web site and storefront facilities.

The relative percentages of digital and brick and click businesses vary among market segments. ISPs cannot deliver service except via the Internet. A small percentage of ISPs in our sample were extensions of existing brick and mortar businesses. As discussed above, adult entertainment businesses and their customers find the Internet a less restrictive market place. This is a strong incentive to operate in a purely digital medium.

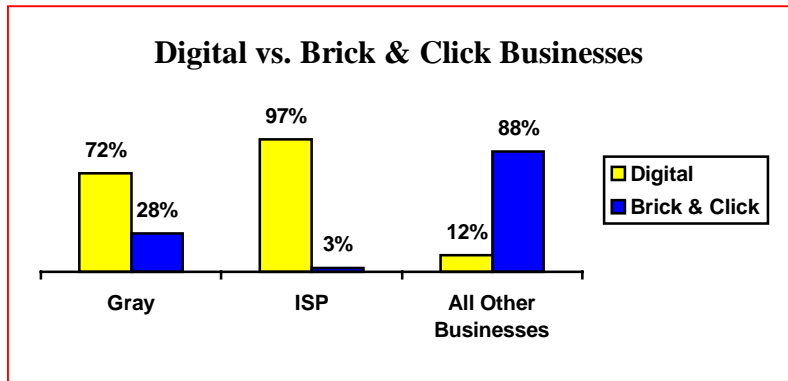
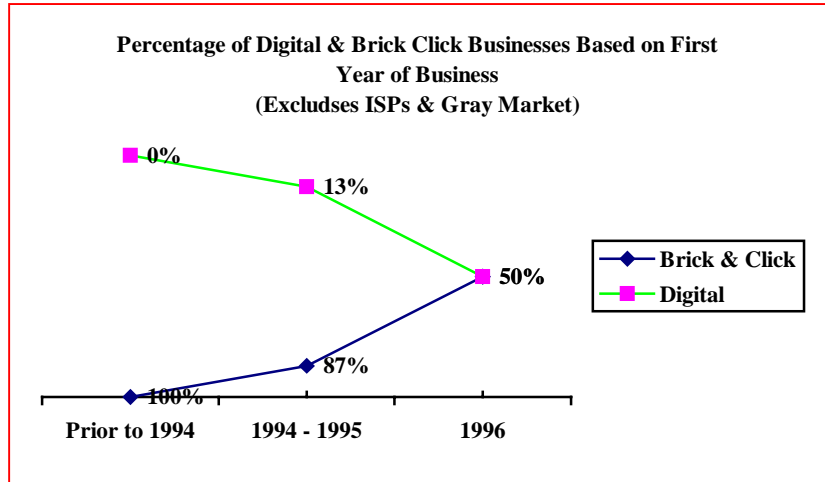


Figure 18: Digital vs. Brick and Click Businesses

In regard to the businesses in the other four market segments, we found that the overwhelming majority were brick and click establishments. However, this percentage is declining if we take into consideration the year the business opened. As seen in Figure 19, 50% of the businesses that started in 1996 did not have a brick and mortar alter ego.

The decision to operate as a brick and click or a purely digital business is just one example of how the Internet is changing the way business is organized. The commercialization of the Internet is changing the distribution channels and the supply chains within the economy. Like the large-scale introduction of the assembly line and mass production techniques



that ushered in the era of the multidivisional, vertically integrated corporation, Internet technologies are bringing in new types of business organizations.⁷⁰

Figure 19: Percentage of Digital & Brick & Click Businesses

Academic researchers describe this process as “disintermediation,” or the collapsing of traditional distribution networks and the creation of new intermediaries.⁷¹ These researchers use terms such as virtual corporations, net brokers, e-commerce facilitators, e-commerce portal providers, and infomediaries to describe the informal network of partnerships and alliances that service the Internet Economy.⁷²

The virtual corporation is based on the idea that telecommunication systems and linkages allow a business to contract out many production and support functions while retaining the high value added core functions. The primary mission of many of these virtual

⁷⁰ The growth of electronic commerce is paralleled by the diversification of permissible forms of business organization. The Treasury issued in 1996 the “check the box regulations.” These regulations liberalized the entity classification rules thereby allowing taxpayers greater flexibility in the selection of a business organization. New unincorporated business entities are allowed the option of being classified as either associations or partnerships. These regulations have encouraged the use of hybrid business organizations, such as limited liability companies (LLC) or limited liability partnerships (LLP). These hybrid entities combine the benefits of limited liability with no entity level taxation. See Reg. 301.7701-1 through Reg. 301.7701-3; Burke, Karen C. *Federal Taxation of Partners and Partnerships*, pp. 8, 9, & 23.

⁷¹ Zwass, Vladimer, *Structure And Macro-Level Impacts of Electronic Commerce: From Technological Infrastructures to Electronic Marketplaces*, p. 19 on-line: <http://www.mhhe.com/business/mis/zwass/ecpaper.html> (October 1999); Bernstein, M., *E – Business and the Myth of Disintermediation*, on-line: <http://gartner12.gartnerweb.com/public/static/home/home.html> (November 1999).

⁷² Franke, Ulrich & Bernd Hickman, *Is the Net-Broker an Entrepreneur? What Role Does the Net-Broker Play in Virtual Webs and Virtual Corporations?*, p. 121 on-line: <http://www.virtual-corporations.net> (September 1999).

entities is “to help users to find information, products, and merchants” and eliminate information overload that hampers the on-line buying process.”⁷³

What do these new business organizations look like in the real world? The Australian Taxation Office (ATO) has developed a model of an “Internet shop” that describes the flow of digital service, product, and payment transactions among the merchant, the customer, the bank and the ISP.⁷⁴ We have developed an e-business model using a different approach. Our E-Commerce Business Model focuses on the steps required in establishing a business that operates over the Internet. A high level summary of our model is presented in Figure 20.

The full model, with the intervening decisions, is found in Figure B – 2 (Appendix B). The numerous sub-steps contained in the full model focus on those decisions that have Federal tax ramifications beginning with the creation of an Internet identity and continuing with the carrying on of business over the Internet. The final step of the model looks at the recordation of the transactions.

Steps in Creating and Operating a Commercial Web Business

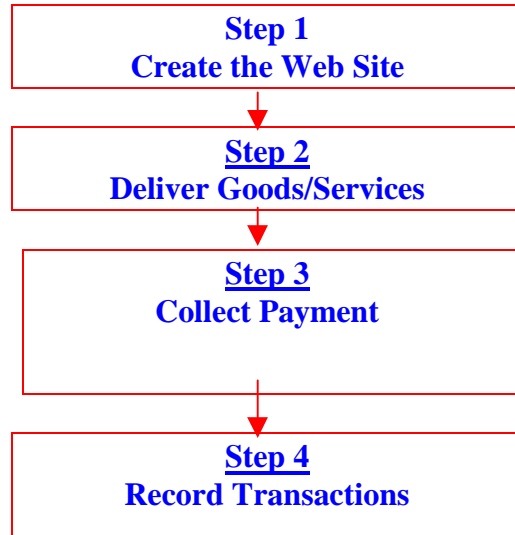


Figure 20: Steps in Creating & Operating a Commercial Web Business

Finding 10: *The Percentage of E-Commerce Businesses Reporting Losses Is Declining.*

- ◆ *New e-commerce businesses are likely to report a loss, however the percentage of these new businesses reporting losses is declining.*
- ◆ *The percentage of e-commerce businesses reporting a loss is less than comparable small and medium corporations not engaged in electronic commerce.*

Are e-commerce businesses profitable? Figure 21 on the next page provides the answer. Thirty-nine percent (39%) of the businesses in our study that voluntarily filed a 1997 tax return reported a net operating loss (NOL). The percentage of ISPs and financial service providers reporting an NOL exceeded 50%.⁷⁵

⁷³ Almeida, Virgillio, Meira Wagner Jr., Victor Rebeiro, & Nivio Ziviani, Efficiency Analysis of Brokers in the Electronic Market Place, p. 1, <http://www8.org/w8-papers/1a-electronic-market/efficiency/efciency.html> (February 2000).

⁷⁴ Australian Tax Office, *Discussion paper - Tax and the Internet*, Section 3.6.1 on-line: <http://www.ato.gov.au/reports.html> (August 1997).

⁷⁵ The economic data presented in Findings 10, 11 and 12 is based on the tax returns **as filed data**. We did not take into consideration any changes made by the revenue agents. Inclusion of these adjustments does

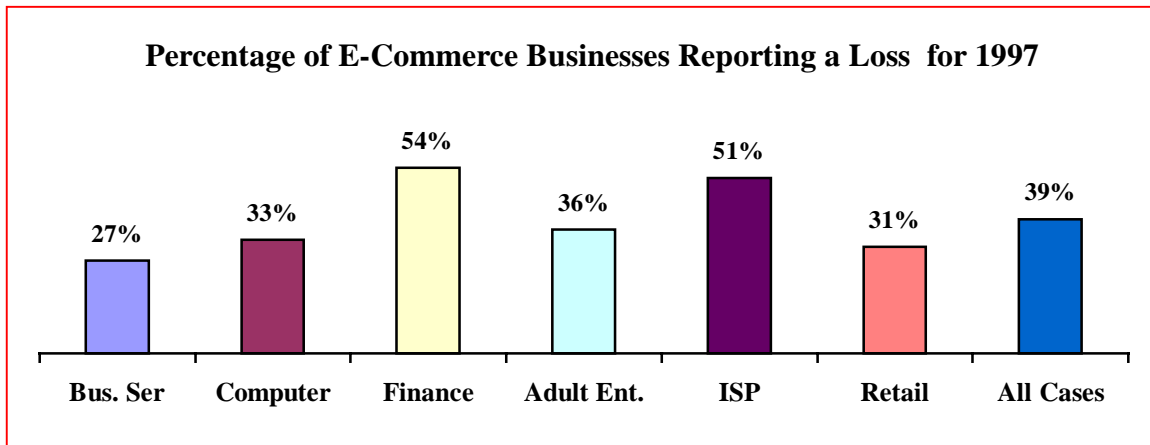


Figure 21: Percentage of E-Commerce Businesses Reporting a Loss for 1997.

Are these losses associated with new businesses or are the existing businesses pyramiding their losses? Figure 22 shows the percentage of first time filers (new e-commerce businesses) reporting a loss for their first year of operation in comparison with existing businesses that reported a loss.

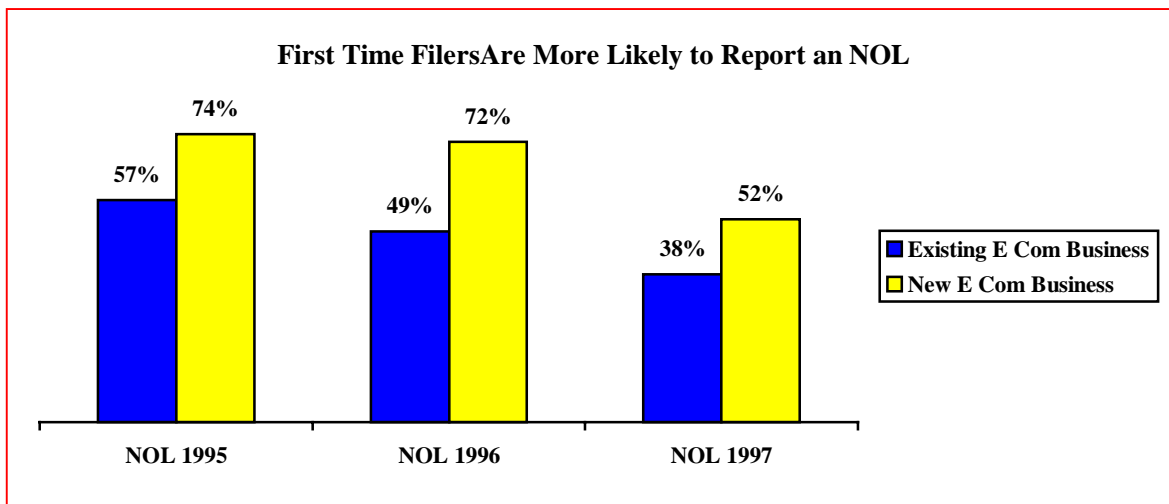


Figure 22: First Time Filers Are More Likely to Report A Loss.

There clearly appears to be a “new business effect” at work. The new business or first time filer effect refers to the phenomenon that new businesses are more likely to incur a loss because of lack of established customer base, start-up costs, under utilized capacity, etc. The percentage of new e-commerce businesses reporting a loss clearly exceeds the percentage of e-commerce businesses that have been in business for more than one year.

The percentage of new businesses reporting an NOL for 1995 and 1996 clearly dwarfs the comparable percentages for established businesses. Whether 1997 represents a change in this pattern cannot be determined, although the rapid growth of the Internet as a

not materially affect the results of our analysis and hurts our ability to make comparisons with the historical data.

commercial medium may have eliminated some of the downside risk associated with developing a commercial web site.

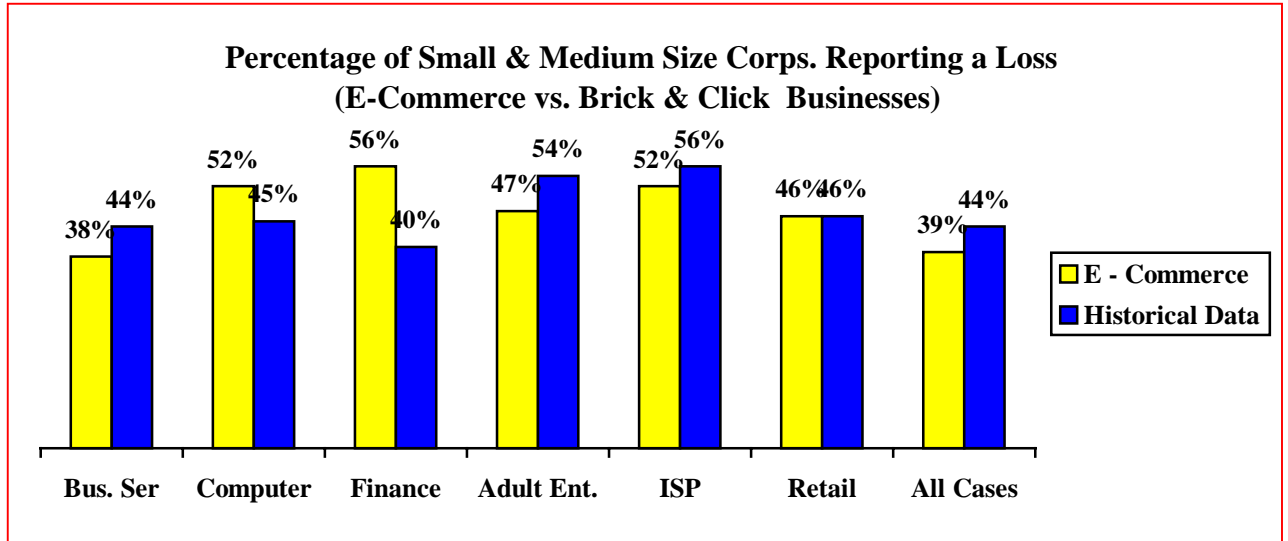


Figure 23: Percentage of Small & Medium Size Corporations Reporting a Loss.

How do e-commerce businesses compare with traditional businesses? There is a dearth of contemporaneous data on brick and mortar businesses because it is difficult to ascertain if a particular business earns a material amount of revenues from the Internet. However, we have compiled some comparative information from our Compliance Research Information System (CRIS). The CRIS data is from 1995 returns. We have extracted data for small and medium size corporations that are analogous to those included in our study. Figure 23 presents comparative information on the percentage of small and medium corporations that reported an NOL.⁷⁶

E-commerce businesses reported fewer NOLs than their brick and mortar counterparts, with the exception of financial services. This is somewhat inconsistent with our expectation that new businesses, especially those in emerging market segments, would post a higher incidence of losses.

Finding 11: *E-Commerce Businesses Out Perform Their Brick and Mortar Counterparts.*

- ◆ Comparison of the sales, gross profit percentage, net profit percentage and return on assets indicates that e-commerce businesses frequently out perform their brick and mortar counterparts.
- ◆ The superior performance may be the result of more flexible cost structures and greater access to remote markets.

⁷⁶ The historical data aggregated by PBA codes only provide us an approximation of the market segments we included in our study, especially in the adult entertainment and ISP segments. The former has never been designated by a unique code and the latter did not exist in 1995.

Our observations under Finding 10 regarding the percentage of businesses reporting losses serve as back drop to our analysis of the operating performance of e-commerce businesses relative to their brick and mortar counterparts. As discussed above, the number of e-commerce businesses reporting losses is declining. What is behind the increase in profitability and can we expect this trend to continue? To answer this question, we first begin with a discussion of sales.

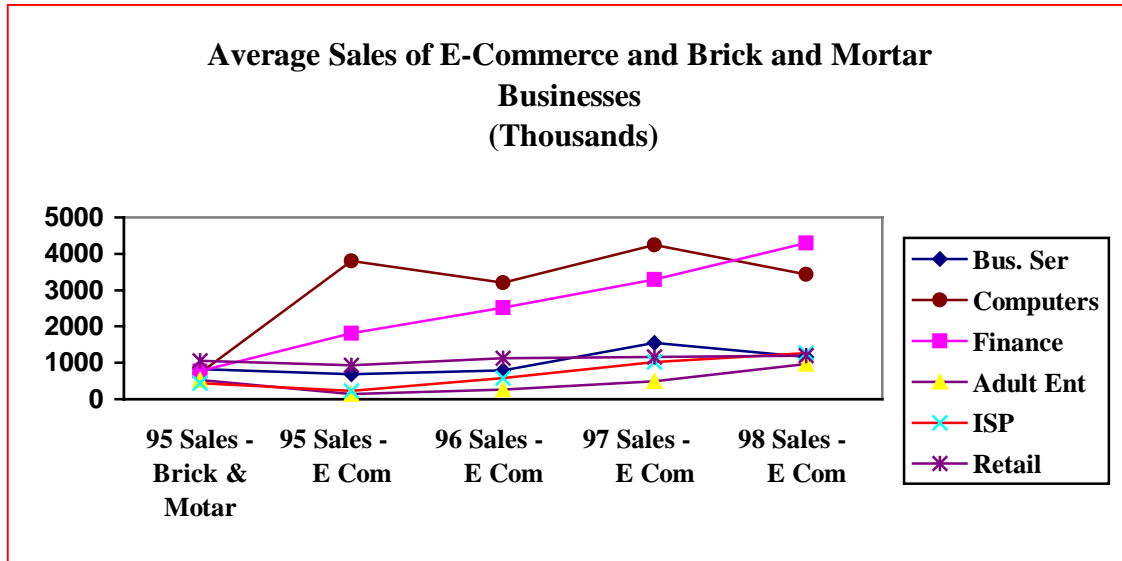


Figure 24: Average Sales of E-Commerce and Brick and Mortar Businesses

Figure 24 displays the average sales (revenues) for the businesses in our 6 market segments from 1995 through 1998. For reference purposes, we have included the average 1995 sales for comparable small business corporations.

Average sales for our baseline year of 1995 were comparable for e-commerce and brick and mortar businesses with the exception of financial services and computers. These businesses reported higher average sales for 1995. Average sales then increased from 1995 through 1997 for all six market segments.

However, this favorable pattern did not continue uniformly into 1998. Average sales for ISPs, adult entertainment operators, and retailers and wholesalers posted only modest increases from 1997 to 1998. Average sales for business service providers, and computer sales/service businesses actually declined. The decline was somewhat precipitous for the latter. The financial service market segment was the only one that showed an increase in average sales that was commensurate with prior years.

Figure 25 on the next page displays the median sales for the six market segments using the same format as Figure 24.⁷⁷ Brick and mortar businesses reported higher median sales for 1995 than their e-commerce counterparts in the retail, ISP, adult entertainment, and business services market segments. This is a pattern we would expect to see when

⁷⁷ The median is the middle or center value with a set of numbers, such as sales. One-half of the values in the set are greater than the median and one-half are less. Both median and mean (average) measure the center of a distribution, but the median is resistant to the influence of extreme values.

comparing existing to emerging market segments. Computer and financial services businesses deviate from this pattern and report higher median revenue than comparable small business corporations. The deviation is particularly pronounced with regard to the latter market segment.

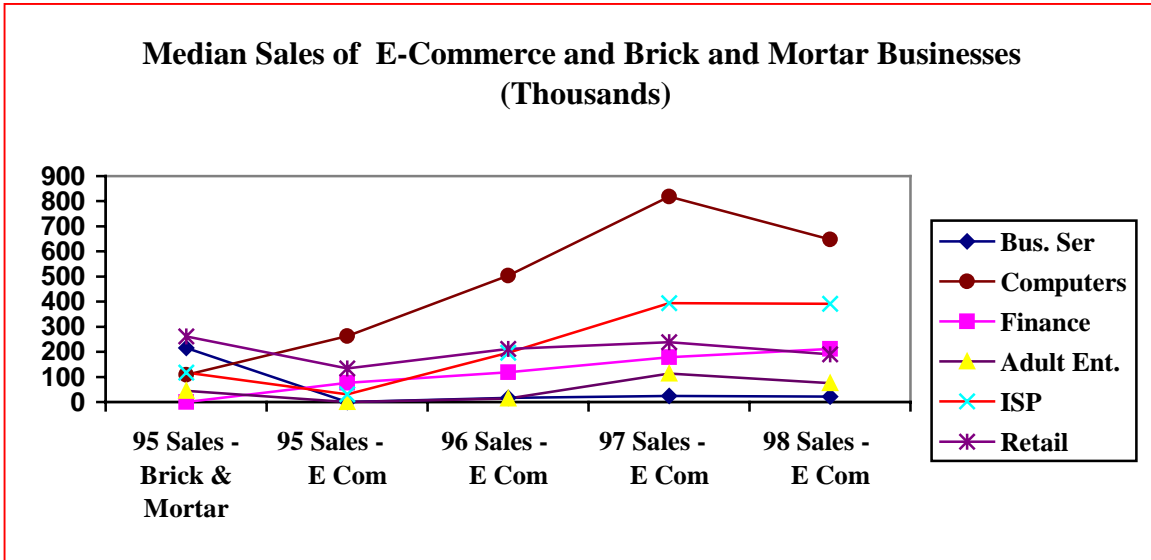


Figure 25: Median Sales of E-Commerce and Brick and Mortar Businesses

Median sales were flat or increased modestly between 1997 and 1998 for ISPs, financial service businesses, and business service providers. Adult entertainment, and retail and wholesale businesses posted small declines. Computer sales/service businesses reported a drop in median sales that offset a substantial portion of the gains of the prior two periods.

What accounts for the leveling off or flattening of average and median sales between 1997 and 1998? All businesses and market segments experience product or service life cycles. The initial phases are start-up and growth.⁷⁸ These phases tend to be characterized by the emergence of market leaders that expand rapidly. The market leaders tend to post relatively higher sales than their more sedentary or traditional competitors.

However, if barriers to entry into a market segment are low and opportunities for product or service differentiation are high, new competitors will enter the market. This may depress revenues of existing businesses, which is what appears to have happened between 1995 and 1997. The overall expansion of electronic commerce between 1995 and 1997 raised revenues. However, the low barriers to entry attracted new competitors, which put downward pressure on the sales of existing business. As discussed in the prior finding, one-third of the e-commerce businesses surveyed by the researchers at CREC did not exist in 1996.⁷⁹

⁷⁸ White, Gerald I., Ashwinpaul C. Sondhi & Dov. Fried, *The Analysis and Use of Financial Statements*, p. 165 (1997).

⁷⁹ Ibid. Fort Worth Telegram Star.

The Commerce Department in its *Digital Economy II* observed that “compared to traditional retail or catalogue operations, this new way of doing business is changing cost structures.”⁸⁰ Are these changes in cost structures reflected in the profitability of e-commerce businesses? We saw under Finding 11 that the percentage of e-commerce businesses that were reporting an NOL declined through 1998. Concurrently, we observed that that sales revenues for many businesses plateaued or actually declined in 1998.

To understand the interaction between revenues and costs, we looked at several traditional measures of profitability. We concluded that gross profit percentage (gross margin), net profit percentage (profit margin) and return on assets (ROA) are suitable indicators of economic performance and efficiency.

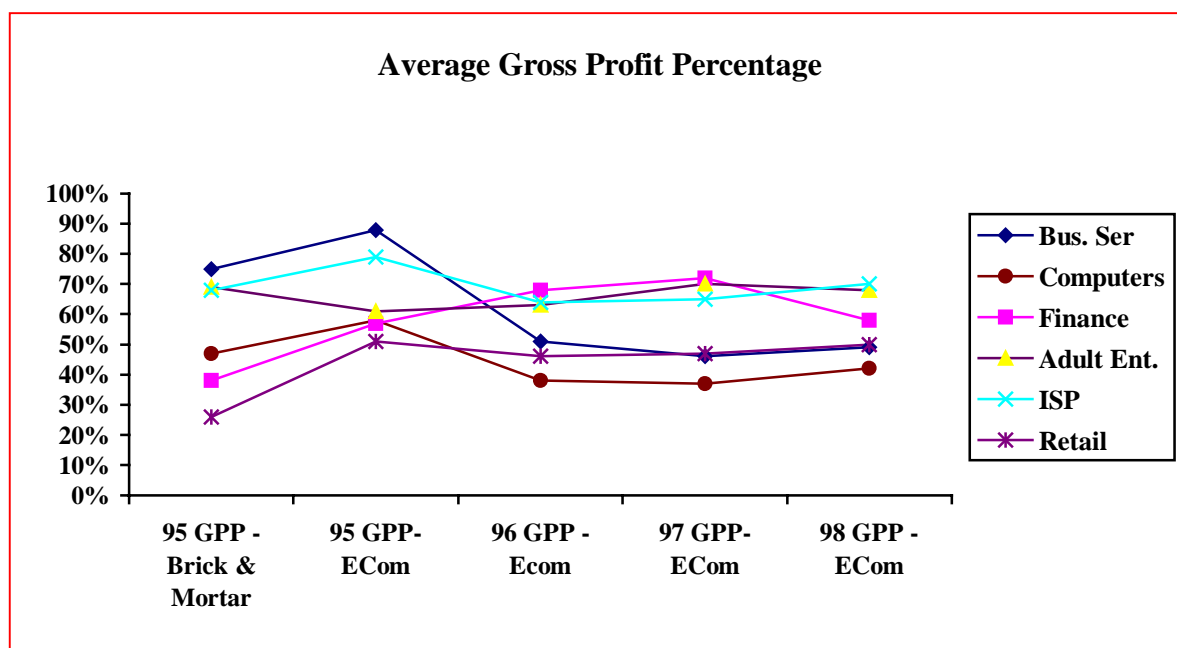


Figure 26: Average Gross Profit Percentage.

The gross profit percentage (GPP) captures the relationship between sales and the cost of sales. It is a particularly useful indicator of profitability for businesses in which inventory is a material factor in the production of income. Additionally, many service businesses compute their gross margin on service income.

The average gross profit percentage for 1995 is considerably higher for e-commerce businesses in comparison with brick and mortar businesses. However, the GPP drops in 1996 in four of the six market segments. After some fluctuation between 1996 and 1998, the GPP settles to levels that are commensurate with the 1995 GPP for brick and mortar businesses. The only exception to this pattern is business service providers whose reported gross rate of profit for 1998 is considerably lower than the 1995 level.

⁸⁰ U.S. Department of Commerce, *The Emerging Digital Economy II*, chapter 1, p. 9.

The net profit percentage (NPP) or profit margin describes a firm’s overall profitability.⁸¹ Figure 27 on the presents the comparative information for our market segments.

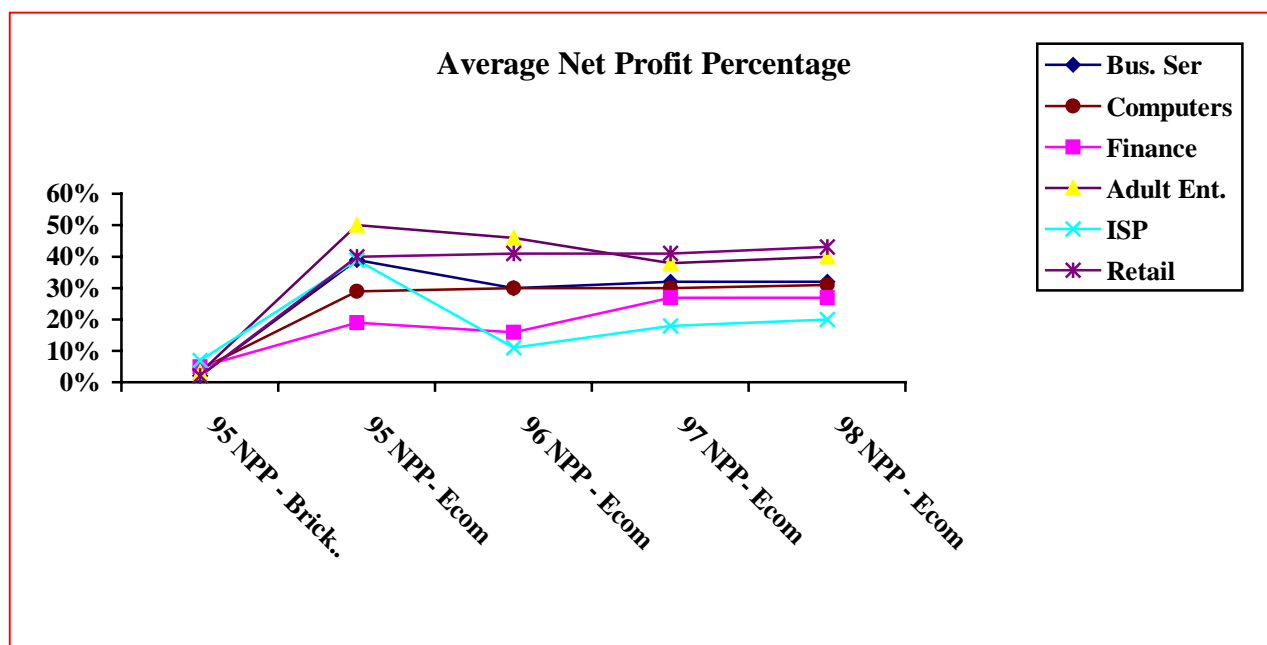


Figure 27: Average Net Profit Percentage.

The average NPPs for e-commerce businesses dwarf the respective NPPs of their brick and mortar counterparts. We were not able to identify any one line item or category of expenses that would account for the differences in profitability, with the exception of ISPs. The expense and cost patterns of ISPs are discussed in more detail in the Finding 12.

The fluctuations in the NPPs between 1995 and 1997 and their subsequent stabilization in 1998 are the result of the interaction between two phenomena. First, the new entrants into the digital market place may have depressed profitability. Concurrently, the cost savings and other efficiencies as described by the Commerce Department in its study may have offset the downward pressure on profitability created by new competitors.⁸²

The relative efficiency of e-commerce businesses over their brick and mortar counterparts is further reflected by their return on assets (ROA). Figure 28 on the next page displays the return on assets for the corporations and passthrough entities in our study.⁸³

⁸¹ An alternative measure of performance and profitability is the operating margin (OM). The OM provides information on the firm’s profitability from operations in the same manner as the NPP with three notable exceptions. The numerator excludes ancillary sources of income, such as gains from the sales of assets and portfolio income, and the deductions for taxes and interest expense. We found that the OM did not yield any results that were materially different from the NPP.

⁸²Ibid., Emerging Digital Economy, Chapter 1, p. 9.

⁸³ Sole proprietorships are not required to disclose asset information on their tax returns.

Once again, we are seeing the now familiar pattern of e-commerce businesses out performing their brick and mortar counterparts. The downward shift and subsequent recovery in the average ROA exhibited by some market segments is typical of new businesses and emerging market segments. As a business “takes off,” the investment in fixed assets or capacity may outstrip the growth in revenues. This has a depressing effect on profitability ratios. Ideally, the enhanced operating leverage supported by the investment in increased capacity will generate additional revenues and, accordingly, allow profit ratios to return to their optimum level.⁸⁴

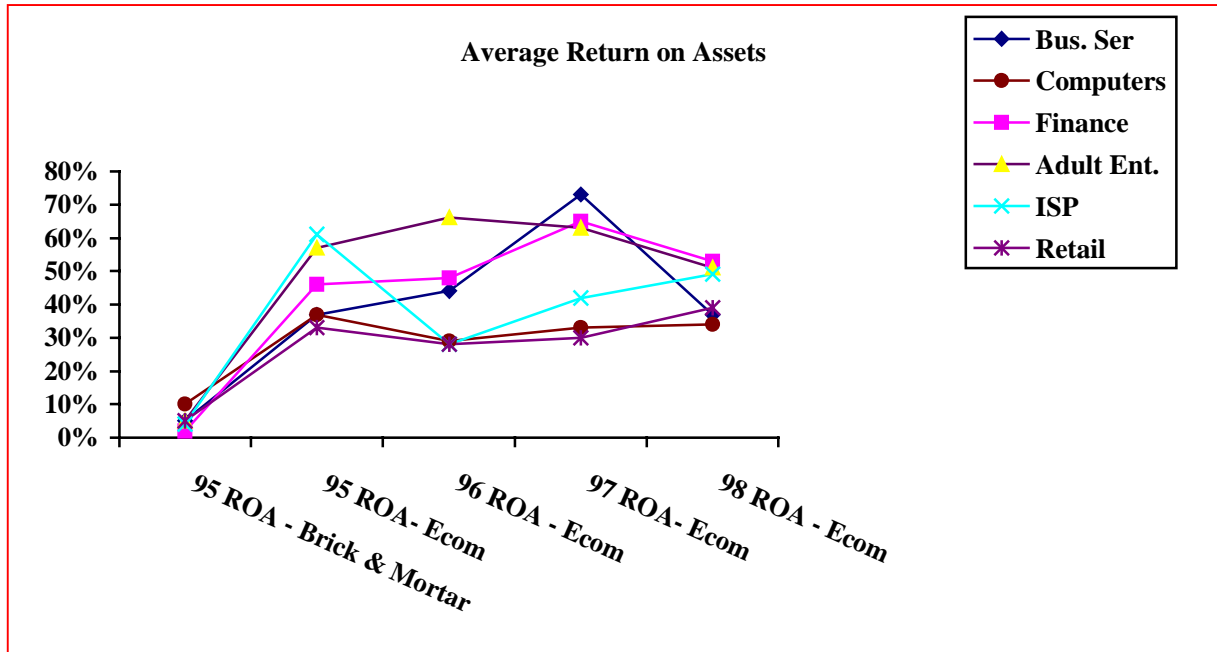


Figure 28: Return on Assets.

Finding 12: *Investment in Capacity Has Impacted the Profitability of Internet Service Providers*

- ◆ ISPs maintain the infrastructure of the Internet Economy. The costs associated with build-out of the Internet have depressed the profitability of many ISPs and the investment in capacity is exceeding the growth in revenues.
- ◆ We expect the number of ISPs to decline as declining profits force acquisition and consolidation among ISPs.

As discussed under Finding 9, ISPs maintain the infrastructure of the Internet economy. The continued growth of the electronic commerce is dependent in significant part on their financial health.

Under findings 10 and 11 we presented comparative information on the profitability and operating performance for the six market segments included in our study. We identified

⁸⁴ Ibid., *The Analysis & Use of Financial Statements*, pp. 238 – 241.

several anomalies in the performance results of ISPs that we felt needed more analysis.

We begin with a recap of some of the performance data as reported by ISPs. This information was abstracted from the comparative data presented in Finding 11.

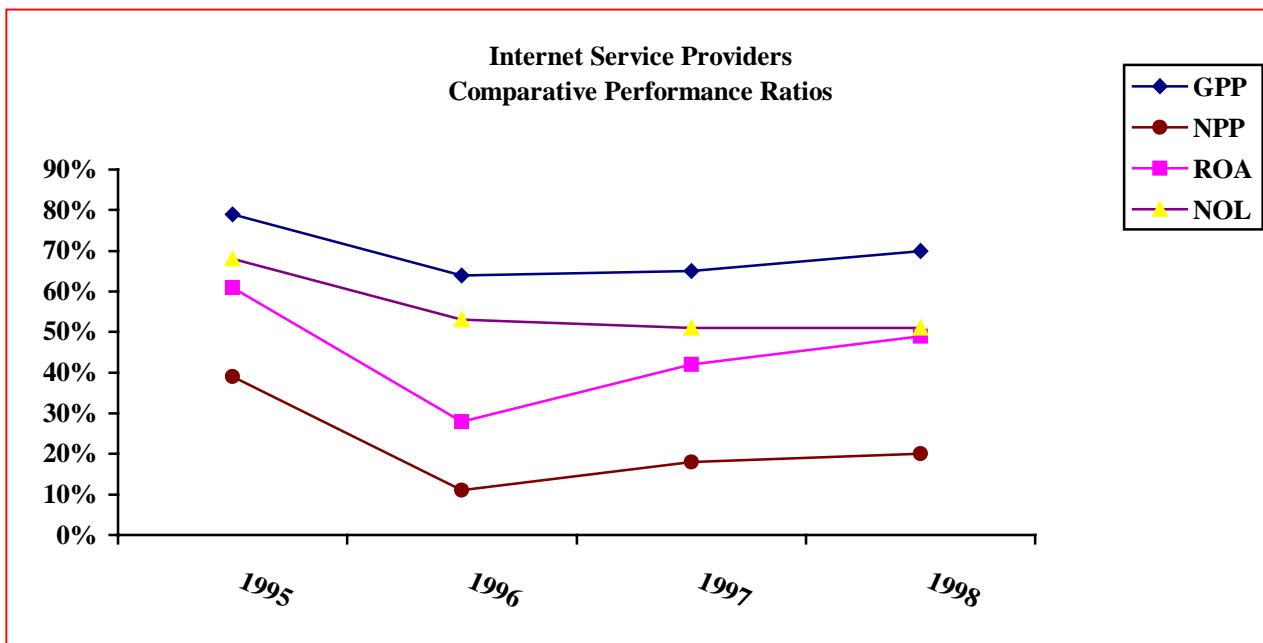


Figure 29: Internet Service Providers – Comparative Performance Ratios.

Nineteen ninety-six (1996) exhibits an unusual pattern. The percentage of ISPs reporting an NOL declines by 15 percentage points. Concurrently, the three performance ratios all decline. The decline is particularly precipitous for ROA and NPP. These ratios partially recover in 1997 with 1998 seeing some additional, albeit modest, improvement. However, none of the ratios have fully recovered to their 1995 level.

What is the dynamic underlying these ratios? We compared the growth of revenues with key operating expenses and assets. Our findings are summarized on Figures 30, 31 and 32 on the subsequent pages.

We identified five major groups of expenses for ISPs. They are cost of services, wages, build-out expenses, advertising and other deductions. Wages included officers' compensation

Cost of services and other deductions are comprised of multiple expense accounts. Our experience indicates that the largest components of these line items are payments for access to the Internet backbone, such as lease payments for T1 lines or servers. Corporate entities usually include such costs as part of cost of services (cos). Sole proprietorships typically claim them as other deductions.

Build-out expenses consist of those expenditures that are closely associated with the physical expansion of the ISP's connection to the Internet. They include depreciation and amortization of assets, interest charges on business debt, and rental payments.

Advertising expenses are the costs associated with development of the ISP's customer base.

Businesses are allowed substantial discretion regarding how they disclose these expenses on their tax returns. To compensate for this, we present them both individually, except for advertising, and in aggregate (all categories). Additionally, we have segmented the ISPs between those reporting a profit (Figure 30) and those reporting a loss (Figure 31.)

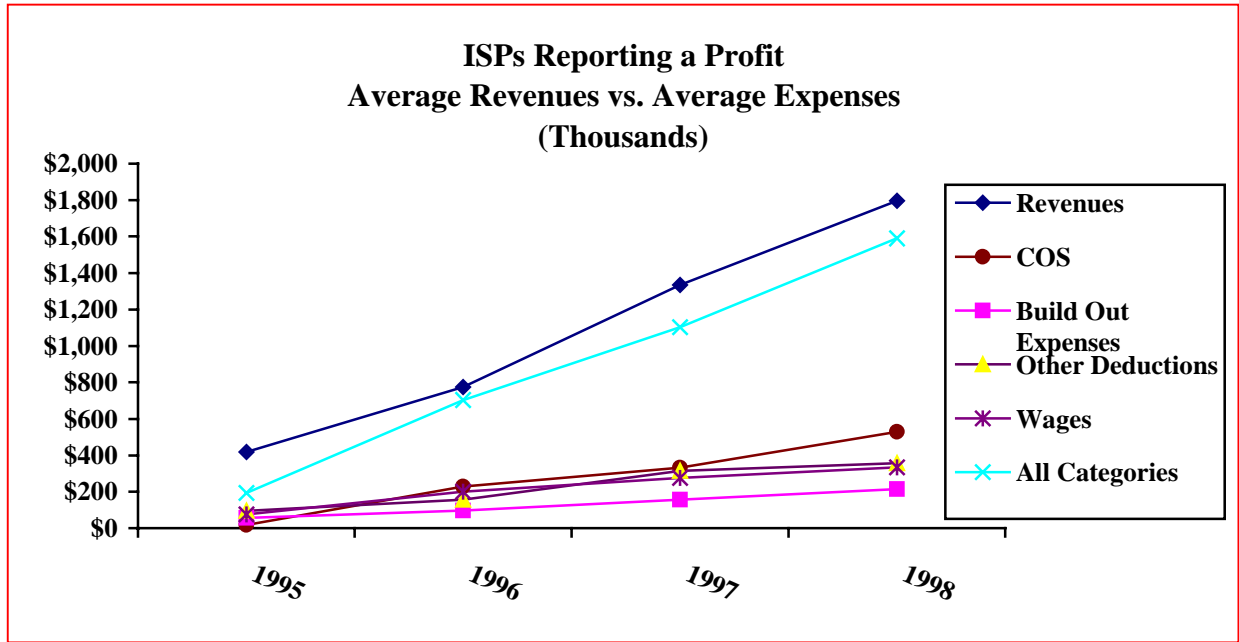


Figure 30: ISPs Reporting a Profit: Average Revenues vs. Average Expenses (Thousands)

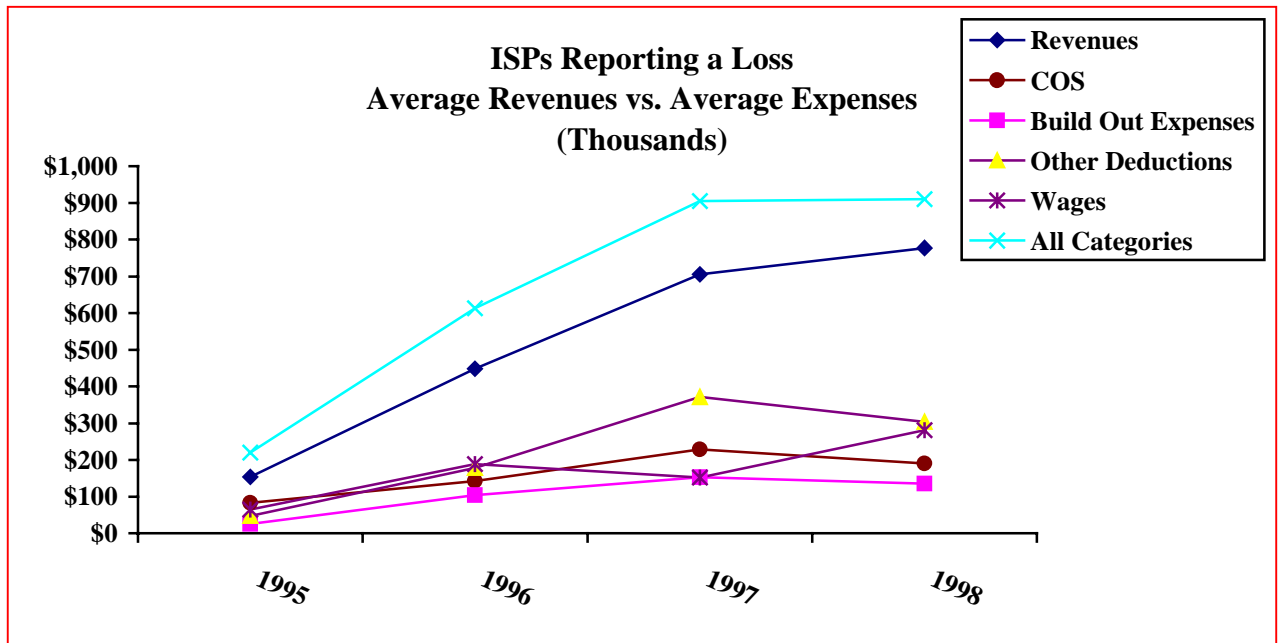


Figure 31: ISPs Reporting a Loss – Average Revenues vs. Average Expenses (Thousands)

The gap between the revenue and expense line approximates net profit. For profitable

ISPs, the net profit percentage declines from 1995 to 1996. It partially recovers in 1997 and remains unchanged through 1998.

ISPs reporting losses display a very different pattern. First, the gap between average expenses and average revenues grows wider from 1995 through 1997 and then decreases in 1998. The only categories of expense to increase in 1998 are cost of services and wages. Second, the rate of growth in average revenues starts to plateau in 1998.

Our last figure compares the average revenues of ISPs with their average assets. The asset base of profitable ISPs expands in tandem with the growth of revenues while those reporting losses see their average revenues remaining unchanged and their asset base stagnating.

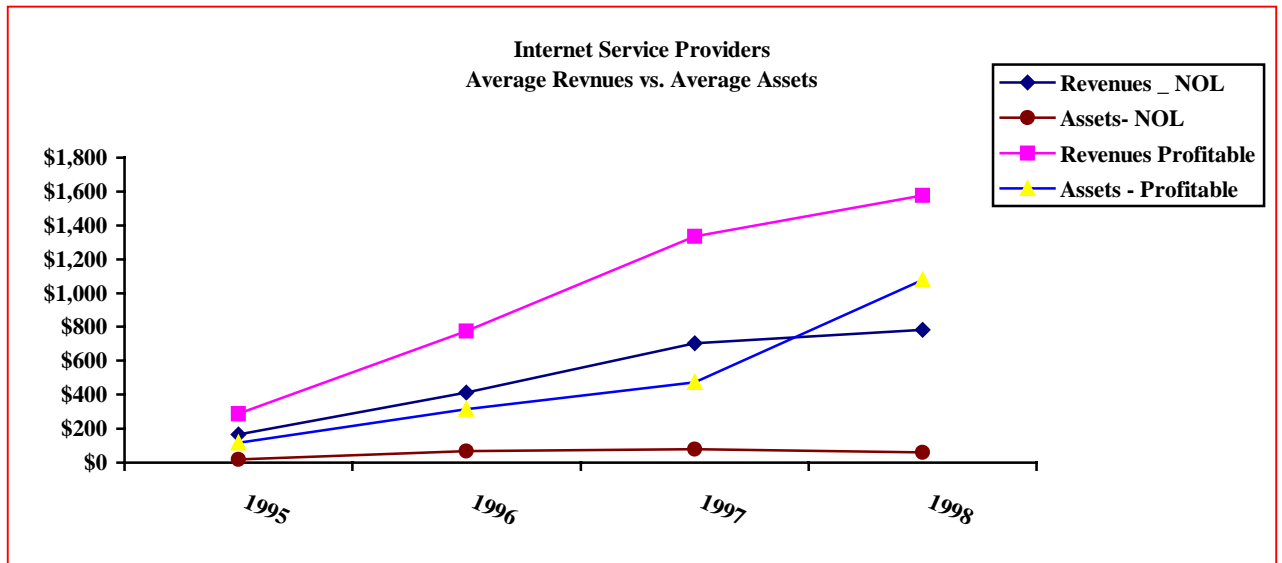


Figure 32: Internet Service Providers: Average Revenues vs. Average Assets

In summary, Figures 30, 31, and 32 give a picture of an industry that is experiencing a substantial downward pressure on its profits. The average cost of services and investment in capacity is increasing at a faster rate than revenues. This fact pattern leads us to expect that we will see substantial consolidation among small and medium ISPs in the near future.

Finding 13: *The New Borderless Economy is Challenging Existing Concepts In International Taxation*

- ◆ Eight percent (8%) of the web sites selected for testing were identified as foreign owned web sites on their initial registration forms. However, there was no way to independently verify if the registration data was correct.
- ◆ The Internet has reduced the marginal cost for businesses to engage in international regulatory arbitrage.
- ◆ Internet based businesses are forcing the Treasury Department and finance ministries of the member states of the OECD to rethink the concept of permanent establishment and the potential role of ISPs as dependent agents.

The primary subjects of this project were small businesses engaged in electronic commerce. We specifically excluded businesses (commercial web sites) that appeared to be owned by foreign registrants or foreign business entities.

However, a recurring theme we encountered during our research is that the Internet is not just a communication tool, but an international trade route. Unlike other international trade routes that must pay deference to national borders, immigration clearances, and custom tollbooths, the Internet provides e-businesses a seamless trade route, especially if the product and payment are transferred in digital form.

*Electronic Commerce:
Taxing Times for Tax Administrations*

“The correspondence between a domain name and the location where an activity is undertaken is tenuous. The point is amusingly illustrated by a cartoon from the New Yorker magazine where two dogs are seen sitting in front of a computer terminal with the caption ‘On the Internet nobody knows you are a dog’.”

*Jeffrey Owens
Head, Fiscal Affairs
OECD*

This finding is devoted to a review of the international issues we encountered in our research.

Under Findings 2 and 3, we discussed the impact of the Internet on our ability to ascertain the beneficial owners of web sites, and to establish fact of filing of tax returns. In addition to the concealment of a taxpayer’s identity, the Internet as a transnational communication and commercial system may be used to manipulate or conceal the geographic location of a taxpayer’s activity and the taxpayer’s nation of residence.

In selecting the web sites for inclusion in the examination portion of the study, we excluded commercial web sites with foreign registrants. These accounted for 8% of the commercial web sites we initially identified. Figure 33 displays the percentage of web

sites with foreign registrants by market segment, excluding ISPs.⁸⁵

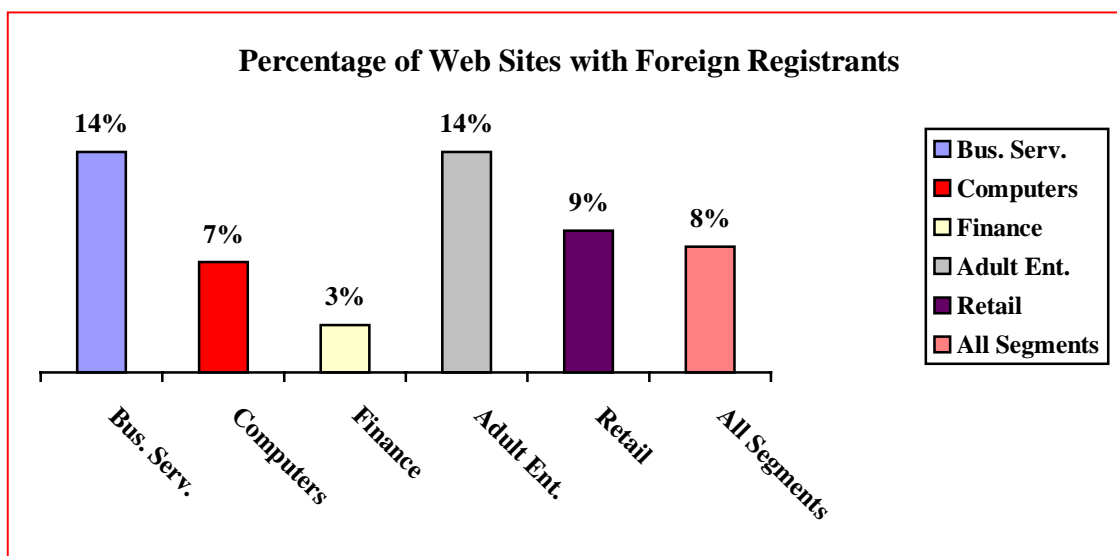


Figure 33: Percentage of Web Sites with Foreign Registrants.

Our determination regarding the country of residence was based on what the registrant submitted to the InterNIC registration database. However, as discussed under Finding 2, the documentation of identity prescribed by the IANA is minimal. Any of these foreign registrants could have been a U.S. resident or domestic business entity that established a nominal foreign identity, such as a foreign post office box. The nominal area of residence for these registrants is presented in Figure 34.

The formal name for manipulation of the locus of a transaction is regulatory arbitrage. It is used to describe the process “by which persons can, in certain circumstances, arrange their affairs so that they evade domestic regulations by structuring their communications or transactions to take advantage of foreign regulatory regimes.”⁸⁶

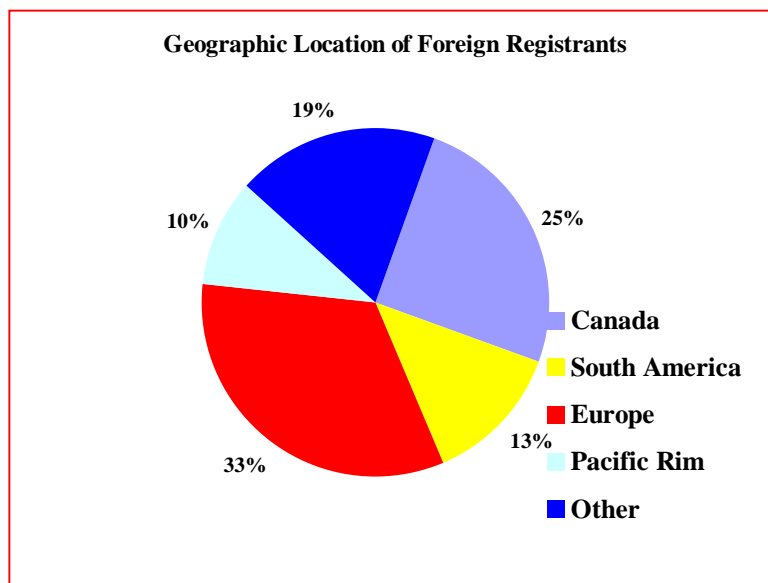


Figure 34: Geographic Location of Foreign Registrants

⁸⁵ All of the ISPs included in our study were registered by U.S. citizens or domestic business entities.

⁸⁶ Froomkin, A., Michael, *The Internet as Regulatory Arbitrage*, in Kahin, Brian & Charles Nesson, eds., *Borders in Cyberspace*, p. 129 (1997).

Regulatory arbitrage has been a long-standing issue for state and local governments that collect sales and use taxes. State and local governments have been barred by the Supreme Court from requiring out of state sellers to collect sales tax.⁸⁷ This problem will continue to grow as retail commerce increases over the Internet. A study of on-line purchase decisions by 25,000 consumers showed “that people who live in locations with high sales taxes are more likely to buy things over the Internet.” It further found that this pattern of consumer behavior mimicked the behavior of residents living near borders between jurisdictions that have unequal tax rates.⁸⁸

The problem of regulatory arbitrage is not limited to collection of domestic sales taxes. The IRS and the member states of the OECD have also had to contend with the problem of regulatory arbitrage and its potentially adverse impact on national revenue bases.⁸⁹

The United States currently dominates international electronic commerce accounting for approximately 80 % of all transactions. However, it is anticipated that the other national economies will close the “digital divide.”⁹⁰ One study estimates that global business to business electronic commerce transactions will exceed \$ 7.25 trillion dollars in 2004.⁹¹

An example of regulatory arbitrage and the use of the Internet to evade domestic regulations is already seen in the growth of Internet gambling. There were 15 on-line casinos in 1996. Today, the number of on-line casinos is estimated to be in excess of 700.⁹² The President’s Working Group on Unlawful Conduct on the Internet reported that the problems with Internet gambling are exacerbated by the proliferation of gaming sites “to other countries that have chosen to allow unrestricted Internet gambling (as certain countries in the Caribbean have done).”⁹³

⁸⁷ The watershed case in this regard is *Quill v. North Dakota*, 504 US 298 (1992). The Supreme Court held that an out of state seller was not liable to collect sales taxes from customers on mail order catalog sales because of a lack of physical presence or “nexus” within the state.

⁸⁸ Goolsbees, Austin, *In a World Without Borders: The Impact of Taxes on Internet Commerce*, National Bureau of Economic Affairs, pp. 1, 18 on-line: <http://www.nber.org/papers/w6863> (1998)

⁸⁹ Organization for Economic Cooperation & Development, *Harmful Tax Competition*, on-line: http://www.oecd.org/daf/fa/tax_comp/taxcomp.htm (1998); Owens, Jeffrey, *Curbing Harmful Tax Practices*, on-line: <http://www.oecd.org/publications/observer/215/e-owens.htm> (January 1999). The manipulation of differences between tax jurisdictions has also been identified at the center of a number of abusive corporate tax shelters. See Bankman, Joseph, *Bankman Examines the New Market in Corporate Tax Shelters*, 1999 TNT 118-104, p. 8.

⁹⁰ Organization for Economic Cooperation and Development, *The Economic and Social Impact of Electronic Commerce: Preliminary Findings and Research Agenda*, p. 41 (1999); *OECD Forum on Electronic Commerce*, p. 26 (October 1999). One recent survey of 28 thousand Internet shoppers indicated that 54% were U.S. residents.

⁹¹ GartnerGroup, *GartnerGroup Forecasts Worldwide Business-to-Business E-Commerce to Reach \$ 7.29 Trillion in 2004*, on-line: <http://gartner12.gartnerweb.com> (January 2000).

⁹² Verdin, Tom, *Internet Gambling Growing*, Associated Press, on-line: http://www.washingtonpost.com/wp-srv/ponlin/20000228/apon-line16349_000.htm (February 28, 2000)

⁹³ President’s Working Group on Unlawful Conduct on the Internet, *The Electronic Frontier: The Challenge of Unlawful Conduct Involving the Use of the Internet*, p. 22 on-line: <http://www.usdoj.gov/criminal/cybercrime/append.htm> (March 2000).

The question at hand is whether the fact pattern we see in the on-line gambling industry will be replicated in other market segments. In brief, will taxpayers operating within particular market segments attempt to shift the locus of transactions outside the authority of the United States?

The discussion of this “location” problem to date has focused on the issue of permanent establishment and electronic commerce. The model tax treaties of the U.S. Treasury, the OECD and the United Nations all contain provisions that prescribe that an enterprise must have a permanent establishment in a country (usually referred to as a contracting state in the language of tax treaties) before the country is able to tax the business profits of the enterprise. A permanent establishment is “a facility, construction site, or an agency relationship.” The agency rule is particularly noteworthy in this regard because it is intended to extend the definition of a permanent establishment beyond a fixed place of business to include transactions that economically belong to a business rather than its captive agent.⁹⁴

In regard to electronic commerce, the concern has been raised that the Internet will decrease the need for a business to have a physical presence in the country of its customer. This will result in a shift in the revenue base from the country of source to the vendor’s country of residence. However, what is to prevent an Internet based business from shifting its residence to a low tax jurisdiction, such as a tax haven?⁹⁵ In other words, can a permanent establishment be created on the Internet, and can this electronic permanent establishment be used to shift income outside the jurisdiction of U.S. tax authorities?⁹⁶ The answer to this question is beyond the scope of this project. Furthermore, we were not able to ascertain if any of the aforementioned foreign registrants were using the Internet to create a permanent establishment in a tax jurisdiction outside the United States.

⁹⁴ Ibid., Doernberg, p. 115.

⁹⁵ Tillinghast, David R., *Taxation of Electronic Commerce: Federal Income Tax Issues in the Establishment of a Software Operation in a Tax Haven*, Tax Analyst, TNT 171 – 40, p. 2, (August 1999).

⁹⁶ A working group of the OECD has issued a draft set of recommendations on how Article 5 (definition of permanent establishment) of the OECD model tax convention should be interpreted in regard to web sites. The OECD commentators emphasize that it is important to differentiate between a web site (consisting of software and electronic data) and the computer (server) that hosts it. A web site itself does not involve any tangible property and therefore cannot constitute a place of business. However, computer equipment (server) may meet the definition of permanent establishment if its location is a fixed place of business. This has implications for businesses that own their servers or who employ Internet Service Providers as dependent agents. See: Organization for Economic Cooperation & Development, *Electronic Commerce: Application of the Permanent Establishment Definition in the Context of Electronic Commerce*, on-line: http://www.oecd.org//daf/fa/treaties/art5rev_3march.pdf (March 2000). Commentators on the OECD recommendations regarding Article 5 have recommended “as a matter of policy, that no PE be considered to exist within a jurisdiction unless employees or other dependent agents of the enterprise conduct activities in that jurisdiction in a manner that would create a PE.” The absence of employees would bar any attempt to impugn permanent establishment status to a business server even “if the business of the enterprise is carried on mainly through automatic equipment. See Dunahoo, Carol A., *E Commerce Study Group Responds to OECD Request*, Tax Analysts, 2000 WTD 11 – 18 December 1999).

The revenue agents assigned to the examination cases identified two incidences where the taxpayer shifted income outside of the United States. One case involved the sale of customized computer software. In this particular case, the taxpayer shifted the income to its foreign parent. The examining agent reallocated the income to the U.S. subsidiary of the foreign corporation.⁹⁷ The agent and an international examiner identified the income by tracing inter-company transactions from the general ledger back to the source contracts.

The other case involved the alleged transfer of income from an adult entertainment business to bank accounts located in a tax haven. The primary issue in this case was money laundering rather than manipulation of the concept of permanent establishment. This case underscores a growing concern that the Internet may be used to launder unreported income, regardless of its source, to offshore financial centers.⁹⁸

Finding 14: *E-Commerce Cases Produced Results Comparable With Those Of Other Enforcement Programs*

- ◆ The average additional tax and penalties assessed on e-commerce project cases were comparable to the tax and penalties assessed by other enforcement programs.
- ◆ Audits of C corporations produced the highest average tax changes. This average was driven by audits of adult entertainment and computer sales/service businesses.
- ◆ Sole proprietorships in the computer sales/service market segment exhibited the highest average tax changes among all strata of sole proprietorships.

We decided during the design phase of this project that field examinations would be needed to assess the return accuracy and reporting compliance of businesses engaged in e-commerce. We anticipated that the field audits would give us two sets of information.

- ◆ Quantitative indications of the reporting compliance of businesses engaged in some form of electronic commerce.⁹⁹
- ◆ Identification of emerging issues that are unique or strongly associated with electronic commerce that merit further study.

We undertook several initiatives to assure quality in the conduct of the audits and uniformity in the results. These included:

- ◆ Development of an *Electronic Commerce Compliance Job Aid*.¹⁰⁰ The

⁹⁷ The statutory authority for reallocation of income among related entities is IRC 482.

⁹⁸ See Craft, Gary R. & Shoop, Carter B., *Breaking Up the Financial Intermediary, Deutsche Bank*, (April 2000) for a discussion of the impact of the Internet on central banking and the new Internet payment systems.

⁹⁹ The sample sizes were not designed to support inferences of dollar values, such as average net misreporting total, to all e-commerce businesses within a particular. These dollar values should be taken as indications of compliance problems that merit further research.

Job Aid included an overview of electronic commerce, unique features of each market segment, and recommended examination-planning techniques.

- ◆ Use of a national project checksheet for uniform recordation of audit results.¹⁰¹
- ◆ Publication of the monthly *E Com Highlights* project newsletter. Over 850 copies were distributed monthly to project stakeholders. The objective of the newsletter was to keep the revenue agents and executives apprised of emerging issues, successful audit techniques, and quality assurance problems. Eighteen (18) newsletters were written during the course of the project.
- ◆ Training sessions for 33 District E-Commerce Coordinators. The project coordinators were conduits for stakeholder questions and control of cases. One national point of contact was established in the Upstate New York DORA Office to ensure timely and uniform response to all questions.
- ◆ Centralized review of cases and uniform quality assurance standards. The Examination Division Case Review Standards were published in the February 1999 *E-Com Highlights* and given to each participating revenue agent and examination manager.

The Job Aid, project checksheet, case review standards, along with numerous “how to” articles in the *E-Com Highlights* were designed to provide the revenue agents with a clear understanding of the project coordinator’s expectations regarding the audits. Furthermore, they allowed the agents a high degree of personal discretion and maximum flexibility in determining the scope and depth of the examination.

One way of measuring the effectiveness of these initiatives is to compare the results of these examinations with the results of examinations of comparable businesses. The most recent data regarding the audit results of small business tax returns is found in the *1997 Internal Revenue Service Data Book* which covers the period September 28, 1996, through September 26, 1997.¹⁰² The data reflects the examination of small business returns closed during the period. The subject matter of these audits was primarily 1994 and 1995 tax returns.

¹⁰⁰ IRS, *Electronic Commerce Compliance Job Aid*, Document 10442 (8-98).

¹⁰¹ An Interim checksheet was used to record results for 30% the cases that were still open on December 1999. The targeted closing date for the cases was May 28, 1999. In an effort to prevent further delay in evaluation of the project results we requested the examining agents to prepare an interim checksheet and forwarded the final checksheet and case file when the case was finally closed. As of July 31, 2000 approximately 10% of the cases were still under audit.

¹⁰² Internal Revenue Service, *1997 Internal Revenue Service Data Book*, Publication 55B (November 1998).

The following table compares the average results.

Comparison of Average Audit Results E-Commerce Cases vs. Other IRS Audit Programs		
	E-Commerce Examinations	Other IRS Audit Programs
	Average Additional Tax & Penalty	Average Additional Tax & Penalty
Sole Proprietors		
Business Services	\$ 413	
Computers	\$35,859	
Finance	\$ 6,168	
Adult Entertainment	\$ 3,372	
ISP	\$ 5,151	
Retail/Wholesale	\$ 3,371	
All Sole Proprietors	\$ 8,026	\$ 19,416
C Corporations		
Business Services	\$ 63	
Computers	\$ 29,222	
Finance	\$ 3,730	
Adult Entertainment	\$ 181,339	
ISP	\$ 1,182	
Retail/Wholesale	\$ 979	
All C Corporations	\$ 29,531	\$ 20,218
Combined	\$ 19,377	\$ 19,644

Table 8: Comparison of Average Audit Results: E-Commerce vs. Other Audit Programs.

The results from the electronic commerce case audits compare favorably with the results of audits of from other IRS programs. As discussed in the methodology section, the e-commerce cases were selected based on certain economic characteristics. No consideration was given to audit potential. The small business returns examined under the aegis of other IRS programs are selected for examination based on the return's audit potential.

In regard to passthrough entities, no change rates for e-commerce are materially higher.

Comparison of No Change Rates for Passthrough Entities E-Commerce Cases vs. Other IRS Audit Programs		
	E-Commerce Examinations	Other IRS Audit Programs
	No Change Rate	No Change Rate
Passthrough Entities	62%	44%

Table 9: Comparison of No Change Rates: E-Commerce vs. Other Audit Programs.

However, as discussed in regard to sole proprietorships and C corporations, the criteria used to select passthrough entities for audit did **not** include audit potential.

Finding 15: *Traditional Audit Techniques May Not Be Suitable for Audits Of E-Commerce Businesses*

- ◆ Revenue agents relied on traditional audit techniques, such as bank deposit analyses and detailed interviews regarding the taxpayer’s internal accounting to examine the project cases. These may not be the optimal techniques for examining electronic payment systems and the new e-commerce business models.

The revenue agents were given substantial latitude in determining the scope and depth of their examinations. Our review of the project case files indicated that the revenue agents used a variety of audit techniques in the examination of these cases.

The primary techniques used by the revenue agents may be categorized as follows.

Primary Audit Technique

- ◆ **Bank Deposit Analysis (24% of examinations)** – the revenue agent determined that the internal accounting controls were poor or non-existent, and that the taxpayer’s income should be reconstructed by reconciling the deposits into bank accounts under the taxpayer’s control with reported income. This technique was frequently used in the examination of sole proprietorships reporting less than \$1 million in sales. The technique proved to be particularly useful in identifying unreported income that was deposited in the local branch of a domestic U.S. bank.
- ◆ **Detailed Interview (25% of examinations)** – the revenue agent conducted a detailed assessment of the taxpayer’s internal accounting controls and conducted limited tests of the controls. This technique proved to be particularly useful in identifying income shifted to another entity or deposited in a foreign bank account, and web site development costs that had not been properly capitalized.
- ◆ **Innovative (4% of examinations)** – the revenue agent conducted the audit through the web site. This typically involved flowcharting the interface between the web site transactions and the books of original entry.
- ◆ **Limited Scope (47% of examinations)** – the revenue agent limited the scope of the examination to minimum probes for unreported income and completion of the project checksheet. This was clearly the preferred technique in the examination of business services, financial services, retail establishments and business nonfilers.

Did the agents select the optimal examination techniques? In general, we were pleased with the revenue agent’s audit decisions. Examinations that involved detailed

interviews, descriptions of the taxpayer’s accounting system, and flow charts of the operation of the taxpayer’s web site were an important source of information for our E-Commerce Business Model (see Figure B - 2 in Appendix B.)

Our review of the closed cases, especially those involving limited scope examinations, indicated that the agent’s lack of knowledge regarding the operation of an e-commerce business may have foreclosed identification of significant items or material errors on the tax return.¹⁰³ This should not be construed as a criticism of the agents, but a realization that the expansion of remote selling and the liberation of small and medium size businesses from local markets are creating a new class of tax and audit issues.

Examples of these tax law and related audit issues are presented below.

Tax Law and Audit Issues Associated with E-Commerce		
Step	Tax Law Issues	Related Audit Issues*
Create Site	<ul style="list-style-type: none"> ❑ Type of business entity and country of origin. ❑ Capitalization of web site development costs and other capital expenditures. 	<ul style="list-style-type: none"> ❑ Foreign versus domestic web site ❑ Accounting for web site development costs, including bartering of web site development costs.
Deliver Goods and Services	<ul style="list-style-type: none"> ❑ Determination of source of Income ❑ Appropriateness of accounting method and recognition of Income. 	<ul style="list-style-type: none"> ❑ Distribution mechanism and delivery point of goods or services. ❑ Accounting method and bartering of goods and services.
Collection of Payment	<ul style="list-style-type: none"> ❑ Source of Income ❑ Constructive Receipt of Income 	<ul style="list-style-type: none"> ❑ Use of offshore bank accounts as lock boxes. ❑ Use of e-commerce facilitator to process transactions.
Record Transactions	<ul style="list-style-type: none"> ❑ Timing of transactions/economic performance. ❑ Method of Accounting 	<ul style="list-style-type: none"> ❑ Adequacy of books and records ❑ Interface between web site and books and records.
* Issues have been annotated on the E-Commerce Business Model at the relevant decision points		

Table 10: Tax and Audit Issues Associated with E-Commerce.

This is not an all-inclusive list of new tax law and audit issues associated with electronic commerce. New tax law issues, such as proper treatment of web site development costs and the source of income, involve the application of the existing body of tax law to a new situation, once the issue has been identified.

¹⁰³ We did observe that the agent did not adequately develop an e-commerce issue on 17% of the audits. This conclusion was based on the information contained in the closed file and subsequent discussions with the respective revenue agents, their managers, and/or the District E Commerce Coordinators. The Examination Division staff that reviewed the cases determined that none of these cases merited additional fieldwork because the income tax at risk was not material.

The more problematic area involves the audit issues and the examination process. These involve the development of appropriate techniques to examine businesses with e-commerce activities. For example, the examining agents were very successful in identifying unreported income that was deposited into a local U.S. bank. However, would the same audit techniques work if the web site's credit/debit card transactions were processed through an offshore bank? These are the types of new audit issues that may challenge our most experienced revenue agents.

CONCLUSIONS

Our research commenced as an exploratory analysis of the impact of electronic commerce on the compliance behavior of small businesses operating within one of six market segments. Some of these market segments are broadly defined, such as wholesale and retail businesses, and others were narrower in scope, such as computer sales/service and Internet Service Providers.

Caution must be exercised in generalizing our findings to all small businesses operating on the Internet for several reasons. First, the fact that we have focused on six market segments introduces some bias in our sampling. Second, the proportion of commercial web sites systematically selected for detailed testing varied somewhat by market segment. Finally, the dynamic nature of the Internet in terms of growth and sophistication of business practices implies that the business practices and behaviors we analyzed and categorized for 1997 may no longer be indicative of current practices and behaviors.

However, despite these limitations, we think our research has provided some valid indications of the compliance and business practices of e-commerce businesses upon which to base the following conclusions.

1. New E-Commerce Business Models May Undermine Mechanisms for Promoting Voluntary Compliance.

U.S. business has come to recognize that on-line selling and delivery of services is not an optional distribution channel, but is necessary for competitive survival in the digital economy. E-commerce businesses are out performing their brick and mortar counterparts. It is now estimated that on-line sale of goods and services will exceed \$3 trillion by 2003.

E-commerce has led to the creation of new value added chains and business models. These new business models focus on development of virtual corporations, that exist only on the Internet, or hollow corporations that shun vertical integration and outsource many traditional operations, such as manufacturing or distribution, to partners.

These new models and alternative distribution networks will impact income tax compliance by allowing a business to manipulate its residency and the locus of its transactions. Remote selling to customers without the intervening layer of wholesalers or brick and mortar retail outlets is the beginning of a process of disintermediation that may ultimately eliminate some of the information checkpoints and collection tollbooths that comprise the back stop to our system of voluntary compliance. Adult entertainment and on-line gambling businesses have been at the center of this phenomenon. They use the Internet to escape social and legal restrictions to deliver products and services in a purely digital environment.

2. The Minimum Documentation Standards Required to Establish an Internet Identity Will Continue the Process of Disintermediation on the Internet and Adversely Impact Voluntary Compliance

As reported under Finding Number 2, we were not able to ascertain the beneficial owners of 12% of the web sites in our sample. This problem was particularly pronounced in the emerging retail and wholesale, and business services market segments where the rate was 17%. Our testing was limited to web sites with second level domain names. These names were formally registered with *InterNIC/Network Solutions* under the *IANA*. Our testing did not include tertiary, buried, or hidden web sites.

Our inability to identify the owners is a direct result of the minimum amount of documentation required to register a commercial web site name. The new registration organizations do not mandate or prescribe any third party documentation of business identity. This allows individuals to create multiple identities outside the scrutiny of traditional regulatory organizations, such as County Clerks Offices, the State Attorneys General, Federal Trade Commission, or the Internal Revenue Service.

We think this problem will be exacerbated by the proliferation of tertiary, buried, and hidden web sites. These are unregistered web sites that operate below or are buried under other web sites. They may operate as affinity groups, bartering societies, or joint ventures. The owner of the second level domain name allows other web sites to operate under his/her second level domain name in exchange for the right to process the buried web site's credit card transactions, display banner ads, establish links, etc.

3. The High Failure to File Rate by E-Commerce Businesses, Especially by Internet Service Providers, Is Indicative of Future Compliance Problems.

The overall failure to file rate for the businesses included in our study was 10%. The failure to file rate among ISPs was 16%. The root cause of this failure to file rate may be the fact that these market segments are dominated by new businesses that lack the sophistication or knowledge of Federal tax law. However, if this is the case, then we can expect new waves of failure to file problems as new e-commerce business networks emerge.

4. New E-Commerce Businesses are Focused on Achieving Profitability Rather Than Implementing Sophisticated Tax Planning Strategies.

We expected small e-commerce businesses to be operated by passthrough type business entities, especially limited liability companies (LLC). Passthrough entities offer flexibility in tax planning, such as allowing losses to be used to offset other types of income. However, small e-commerce businesses have not shown a predilection for any particular type of business formation. Tax planning does not appear to be the

paramount concern of new e-commerce businesses. New e-commerce businesses, like other new businesses, are focused on stemming losses and achieving profitability.

The percentage of new e-commerce businesses reporting a loss is declining and the overall percentage of e-commerce businesses reporting a profit exceeded 50%. This increase in businesses reporting a profit did lead to an increase in the percentage of sole proprietorships filing balance due returns. However, this pattern was not replicated by corporations, which were able to offset their 1997 profits with losses carried forward from prior taxable years.

E-commerce businesses did not display significant payment compliance problems in 1997. However, the increased profitability of these businesses coupled with a lack of sophistication in tax planning may lead to a higher incidence of payment compliance problems, especially for sole proprietors.

5. Unreported Income is the Single Most Important Reporting Compliance Problem Presented by the E-Commerce Businesses Studied.

Thirty-eight percent (38%) of the businesses that underreported their taxable income failed to report all of their income (this percentage does not include the 8% of the businesses that voluntarily filed a delinquent tax return after being contacted by a revenue agent.)

A majority of the cases involved corporations and passthrough entities with revenues between \$100 thousand and \$1 million or sole proprietorships with less than \$100 thousand in sales. The cases were concentrated in the computer sales/service, adult entertainment and ISP market segments.

A majority of the unreported income cases involved earnings from e-commerce that were deposited into local branches of U.S. banks. None of the cases involved manipulation of electronic payment systems, the clearance of credit/debit card transactions by offshore banks, or the use of foreign entities to hide income with two notable exceptions.

One involved an adult entertainment site that deposited or transferred a substantial amount of unreported income to an offshore bank located in a known tax haven nation. The other involved a computer software company that shifted a substantial amount of income to its foreign parent. These cases may be the harbinger of future compliance problems, especially as more e-commerce businesses adopt electronic payment systems and remote (offshore) clearance of credit/debit card transactions.

6. Guidance is Needed on Complex E-Commerce Issues

A guiding principle of the Treasury Department regarding the taxation of e-commerce transactions is that they will be taxed in a manner similar to non-digital business transactions. Furthermore, the Treasury Department has indicated that the existing

body of tax law will be applied to e-commerce transactions rather than creating a separate or parallel set of rules and regulations that are specifically directed toward electronic commerce. The finance ministries of our treaty partners among the OECD member states have advocated a similar approach.

We identified a number of e-commerce issues where guidance is needed. These include web site development costs, and the valuation of bartering transactions.¹⁰⁴

Based on our examinations, the current industry practice is to expense all the web site development costs, with the exception of hardware and bundled software costs. Taxpayers and revenue agents were frequently unsure regarding which of these costs, especially in the area of web site content, merited capitalization. A subsidiary issue that must also be addressed is the eligibility of these costs for the Research and Experimentation Credit.

The bartering of services among web sites is an issue that has been identified, but not quantified. Again, the problem encountered by both revenue agents and taxpayers was in valuing and accounting for these transactions. This issue is particularly important to banner swaps, mutual linking of web sites, and other forms Internet based advertising and promotion.

7. Business Operating in Market Segments That Are Most Closely Identified With the Build-Out of the Internet Were Responsible for the E-Commerce Tax Gap as Detected by Our Study.

Our study looked at businesses that were engaged in electronic commerce in one of six market segments. We found that businesses that were most closely associated with the build-out of the Internet and the utilization of the Internet as a commercial market place had the most significant compliance problems, and accounted for the majority of the e-commerce tax gap. These market segments were the ISPs, computer sales/service, and adult entertainment sites.

ISPs are responsible for the operation of the infrastructure of the Internet. Computer sales/service are the key businesses in the making the Internet accessible to consumers and businesses (the applications layer in the CREC Model of the Internet Economy). Adult entertainment sites have been market leaders in the delivery of their products and services digitally, and the use of the Internet for remote selling and transcending the limits of the local market place.

These three market segments comprised 65% of the field audit cases, but accounted for 94% of the total e-commerce tax gap for 1997, and 98% of the tax gap attributed to under-reporting.

¹⁰⁴ A third issue involves the relevancy of the definition of permanent establishment to Internet based businesses. We did not encounter this issue on any of the cases involved with this project, however this is a complex problem that will become increasingly important to both domestic and foreign businesses that use the Internet to expand beyond the limits of their domestic markets.

8. Further Study is Needed on the Potential Impact of the New E-Commerce Business Models on Voluntary Compliance

The years 1996 through 1997 comprise the period in which the full impact of the commercialization of the Internet was felt. Accordingly, the subject matter of this project was businesses engaged in electronic commerce in 1997. The majority of the businesses in our study, with the exception the ISP and adult entertainment sites, were operated as brick and click establishments through unitary web sites.

We did not see the wide scale adoption of the new business models or sophisticated tax planning schemes (see Conclusion 4) in which passthrough entities, such as limited liability companies and trusts, are used to defer recognition of income to later tax periods, other entities, or other tax jurisdictions. Our failure to encounter these new business models and entities is a function of the year we selected to study. E-commerce was still in its formative stages in 1997 and many of these models were prototypes that did not see adoption until later years. This is particularly true in regard to businesses operating in the broker/infomediary layer (financial and business services) and Internet commerce layer (retail/wholesale).

9. Further Study is Needed on the Potential Impact of the Electronic Payment Systems, On-line Trading in Financial Products, and Non-Depository Payment Systems on Voluntary Compliance

Our study confirmed that credit cards are the medium of choice for e-commerce. However, contrary to our expectations, only a substantial number of ISP and adult entertainment sites accepted credit cards on-line. Most e-commerce businesses processed credit cards off-line via 800 or 900 numbers, fax or email. The examining agents did not identify any incidences in which an offshore bank was used to process credit cards transactions. Domestic U.S. banks were the primary depositories of credit card proceeds with one notable exception. Furthermore, the examining agents did not identify businesses that accepted non-depository forms of electronic cash.

As with the adoption of new e-commerce models, we concluded that our failure to encounter wide scale adoption of electronic payment systems and Internet based forms of currency is a result of the newness of the medium and consumer resistance to provide credit card information on-line. However, as e-commerce gains wider acceptance among consumers, we can expect to see adoption of electronic payment systems and non-depository forms of electronic cash. These new payment systems will afford business greater opportunities to circumvent existing information tollbooths within our banking system.

A subsidiary area of concern is the growth of on-line financial intermediaries, such as brokers of financial products and day traders. These were emerging market segments in 1997 that we did not encounter in our initial cycle of research.

10. *The Project's Results Point to the Need for Additional Staff Training, and Alternative Ways to Manage the Compliance Problems Associated with E-Commerce.*

The results of our research and field examinations indicate that the IRS may not be in the optimal position for meeting the e-commerce challenge in regard to either compliance or education. The high-risk areas are:

- ⇒ No systematic procedures for identifying businesses that are operating on the Internet. The ease in establishing an Internet identity combined with remote selling will exacerbate filing compliance problems, especially among small and medium size businesses, or businesses that may operate in a purely digital mode.
- ⇒ Limited knowledge of commercial web site operations, especially in the area of electronic payment systems, will limit the ability of enforcement staff to effectively identify and investigate compliance problems, such as the abstraction and laundering of unreported income.
- ⇒ The wide-scale adoption of new business models and new types of business entities will outdate existing workload classification schemes.
- ⇒ The large scale migration of business into cyberspace, especially small business, will put a premium on the development of alternative education and compliance strategies that operate through the Internet and rely less on unitary/reactive enforcement actions that are directed toward brick and mortar business establishments.

RECOMMENDATIONS

Although we were able to successfully develop baseline compliance levels for selected groups of taxpayers and point estimates of the tax gap associated with e-commerce for these taxpayers, the exploratory nature of our research led us to identify potential compliance problems that were only in their formative stages in 1997.

Accordingly, we have formulated a set of proposed compliance studies and research initiatives that build on our research and study some of the high-risk issues and areas identified in this report. We have organized these proposals into three major categories. The majority of these projects affect the customer base and employees of more than one division.¹⁰⁵

The table on the next page contains a list of the proposed projects. Detailed descriptions of the projects may be found in Appendix C.

¹⁰⁵ A number of these projects are associated with particular decision points on our E-Commerce Business Model displayed in Figure B-2 (Appendix.) These projects are highlighted in green on the model.

PROPOSED PROJECTS	
Proposed Compliance Studies & Strategic Research Initiatives	
Operating Division	Proposed Project
SB/SE	Impact of Domain Name Registration Procedures for Masking Identities.
LMSB & SB/SE	Digital Technologies as Tools for Masking the Locations of Transactions
LMSB & SB/SE	Longitudinal Study of E-Commerce Entities
LMSB & SB/SE	Business Practices of ISP/IAPs
LMSB & SB/SE	Filing Compliance of ISP/IAPs
LMSB & SB/SE	Reporting Compliance of Computer Sales/Service Businesses
LMSB & SB/SE	Tax Implications of New E-Commerce Business Models & E-Commerce Facilitators
LMSB, SBSE, & TE/GE	Measurement and Tax Treatment of Internet Bartering
LMSB, SBSE, & TE/GE	Analysis of E-Commerce Activity in Open Enforcement Inventory
LMSB & SB/SE	Profile of Electronic Payment Systems
LMSB & SB/SE	On-line Dealers and Traders in Financial Products
LMSB, SBSE, W&I	Impact of Remote Selling on Excise Tax Compliance
TE/GE	Tax Implications of E-Commerce Activities of Tax Exempt Organizations & Government Entities
Customer Service	
SB/SE	Tax Guide for E-Businesses
LMSB, SBSE, TE/GE, W&I	Web Casts and Webinars for E-Commerce Businesses
Employee Development	
LMSB, SBSE, TE/GE, W&I, CI, CC	Internet Primer for Employees, Internet Training for Employees, Audit Techniques Guide, and Collection Techniques Guide.
*Key to Organization Codes	
<ul style="list-style-type: none"> ❖ LMSB – Large and Medium Size Business ❖ SB/SE – Small Business and Self Employed ❖ TE/GE – Exempt Organizations and Governmental Entities ❖ W&I - Wage and Investment ❖ CI - Criminal Investigation ❖ CC - Chief Counsel 	

Table 11: Proposed Projects

Detailed descriptions of these proposals may be found in Appendix C on page 81.

APPROVAL

/s/**Rick Denesha** 8/10/00
Project Coordinator, Upstate N. Y. DORA Date

/s/**Thomas A. Kerr** 8/10/00
Chief, Upstate New York DORA Date

/s/ **Rose M. Pronel** 8/11/00
Director, Upstate New York District Date

/s/ **Rick J. Fratanduono** 10/05/00
Office of Research Manager Date

/s/ **Jim X. Alzheimer** 10/17/00
Director, Office of Research Date

/s/ **Ellie A. Convery** 10/18/00
A/C, Research and Statistics of Income Date

APPENDICES

APPENDIX A

Glossary¹⁰⁶

American On-line (AOL) – an On-line Service Provider that provides many services in addition to Internet access, including access to popular chat groups.

Bookmark – the address (URL) of a web page you may want to see again. In Netscape, you store URLs in a bookmark file. Internet Explorer stores bookmarks in the Favorite folder.

Bandwidth – the rate that data can be sent through a channel.

Banner – a block of advertising that appears on a web page. This spot is linked to the advertiser's web pages, so that if the block is clicked with the mouse, the advertiser's web pages will load.

Browser – a software program that lets you read information on the World Wide Web.

Client – a computer that uses the services of another computer, or server. If you dial into another system, your computer becomes a client of the system you dial into.

Cookie – a small text file, stored on your hard disk by a web site you have visited, that contains information to remind the site about you the next time you visit it.

Dial-Up Access – to connect to a network via a modem using normal telephone lines, when the lines are available.

Domain name – a unique, identifying name or registered internet address.

Domain name system (DNS) – the standard for naming Internet sites, including domain names and physical components of a physical Internet address.

Download – to copy a file from a remote computer "down" to your computer.

E-mail – messages sent electronically, usually over the Internet.

FAQ – (Frequently Asked Questions) a collection of answers to questions that come up in on-line discussions or that the person who compiles them thinks ought to come up.

Firewall – a computer that connects a local network to the Internet and, for security reasons, lets only certain kinds of information in and out.

Fractional T-1 connection, or ISDN – Telephone companies will sell one or more channels of a T-1 service. Low to moderate bandwidth. Ideal for a business that stay connected full-time.

Frame relay – shared lines. Computer data requires a lot of bandwidth for brief periods in *bursts*, leaving dedicated lines idle much of the time. Frame relay takes advantage of these pauses by switching between transfers.

FTP (File Transfer Protocol) – a common method for moving files between two Internet sites.

.gif – the extension for a file in graphics format, usually a picture (example: dog.gif).

.gov – when these letters appear as the last part of an address (for example, in *cu.nih.gov*), they indicate that the host computer is run by some government body, probably the U.S. federal government.

Hit counter - tracks the number of visitors to a site.

Homepage – the principal page of a web site, often including personal or professional information.

¹⁰⁶ Eddy, Sandra E. Michael M. Swertfager, & Margaret M.E. Cusick. The Internet Business to Business Directory, Sybex, San Francisco, 1996, pp. 635 -- 646

Host – a computer on the Internet.

Host name – the name of a computer on the Internet, for example, *iecc.com*.

HTML – HyperText Markup Language, the language used to write pages for the World Wide Web. This language lets the text include codes that define fonts, layout, embedded graphics, and hypertext links.

HTTP (*HyperText Transfer Protocol*) - the way in which World Wide Web pages are transferred over the Internet.

HTTPS – a variant of HTTP that encrypts messages for security.

Hypertext – a system of writing and displaying text that enables the text to be linked in multiple ways, be available at several levels of detail, and contain links to related documents. The World Wide Web uses both hypertext and hypermedia, which adds other kinds of information, such as pictures, sound, and video.

Internet – a network of computer networks, all freely exchanging information in two-way communication.

Internet backbone – a high-speed line or series of connections that form a major pathway within the Internet.

InterNIC – the Internet Network Information Center, a central repository of information about the Internet. To register a domain name or to view information about domain names already registered, see *http://www.internic.net*.

Intranet – an internal network accessible only from within a specific organization. A private version of the Internet that lets people within an organization exchange data by using popular Internet tools, such as browsers.

IP Number – a unique number that identifies every machine on the Internet.

IPP (*Internet Presence Provider*) – web host.

ISDN (*Integrated Services Digital Network*) – one or more channels of a T-1 service, each channel supporting transfer rates of 64 KBPS (128 KBPS for two lines).

ISP (*Internet Service Provider*) – provides access to the Internet, along with other services, such as web page design or web hosting.

Leased line – a permanent telephone connection to the Internet, requiring installation and routing equipment. This connection is always active, as opposed to a dial-up connection

Links – a hypertext connection that can take you to another document or another part of the same document. On the World Wide Web, links appear as highlighted text or pictures. Clicking with your mouse on a link will take you to whatever web address is associated with that link.

Mail server – a computer on the Internet that provides mail services.

Mirror sites – identical sites in different locations for faster Internet access.

Modem – a device that lets your computer talk on the phone or cable TV.

NAP (*Network Access Point*) – a public network exchange facility where ISP's connect with one another in "peering" arrangements. Peering is the agreement between ISP's to forward each other's "packets" or traffic.

Net – a network, or (when capitalized) the Internet. When these letters appear as the last part of a host name (in www.abuse.net, for example), they indicate that the host computer is run by a networking organization, frequently an ISP in the United States.

Network – computers that are connected together. Those in the same or nearby buildings are called *local-area networks*, while those farther away are called *wide-area networks*.

The Internet is an interconnection of networks all over the world.

.org – as the last part of a host name (in www.uus.org, for example), indicates that the host computer is run by a nonprofit organization, usually in the United States.

On-line Service Provider – provides access to the Internet, along with significant proprietary content that is not available to non-subscribers. Examples include AOL (America On-Line), MSN (Microsoft Network), Prodigy Network, and CompuServe.

Packet – a piece of a message, including a destination address and data that can be put back together when it arrives at the destination.

Redundancy – occurs when a backbone provider leases several lines from different carriers to connect two cities so that if one carrier has a problem the provider still has a connection (though possibly at a lower transmission rate)

Router – a special purpose computer that handles connections between 2 or more networks. Routers examine the destination address on packets and determine where they will be routed.

Search engine – A program used to search for things on the World Wide Web. Examples of publicly available search engines include *Yahoo*, *Lycos*, *Alta Vista*, *Infoseek*, *HotBot*, and *Excite*.

Secure server – a web server that uses encryption to prevent others from reading messages to or from your browser, such as ordering information.

Server – a computer that provides a service - such as e-mail, web data, Usenet, FTP - to another computer or computers (known as clients) on a network.

Shareware – computer programs that are easily available for you to try with the understanding that, if you decide to keep the program, you will send the requested payment to the shareware provider specified in the program. It's an honor system.

T-1 node – a dedicated phone connection (leased line) supporting data transfer rates of 1.5 Mbytes per second. Each line includes 24 channels of 64 KBPS, each. Also known as DS1 lines.

T-3 node – a dedicated phone connection (leased line) supporting data transfer rates of 43 - 45 Mbytes per second. Each line includes 672 channels of 64 KBPS, each. Also known as DS3 lines.

TCP/IP (*Transmission Control Protocol/Internet Protocol*) – packet protocol that allows connections across a variety of mediums, including telephone, satellite, wireless radio, etc.

URL (*Uniform Resource Locator*) – an Internet address, for example, IRS forms and publications links can be found at

http://www.irs.ustreas.gov/prod/forms_pubs/index.html.

World Wide Web (WWW) – a hypermedia system that allows you to browse through endless amounts of interesting information. The Web is the central repository of humanity's information in the 21st century.

Virtual host – a web host.

Virtual server – acts as an ISP, but uses a web host for its own site and resells those services.

Web browser – software used to access and browse the Internet. The two most commonly used browsers are *Netscape Navigator* and *Microsoft Internet Explorer*.

Web host – provides internet access and server equipment for its customers to display their web pages

APPENDIX B
FIGURES

Figure B – 1
E-COMMERCE BUSINESS SELECTION PROCESS

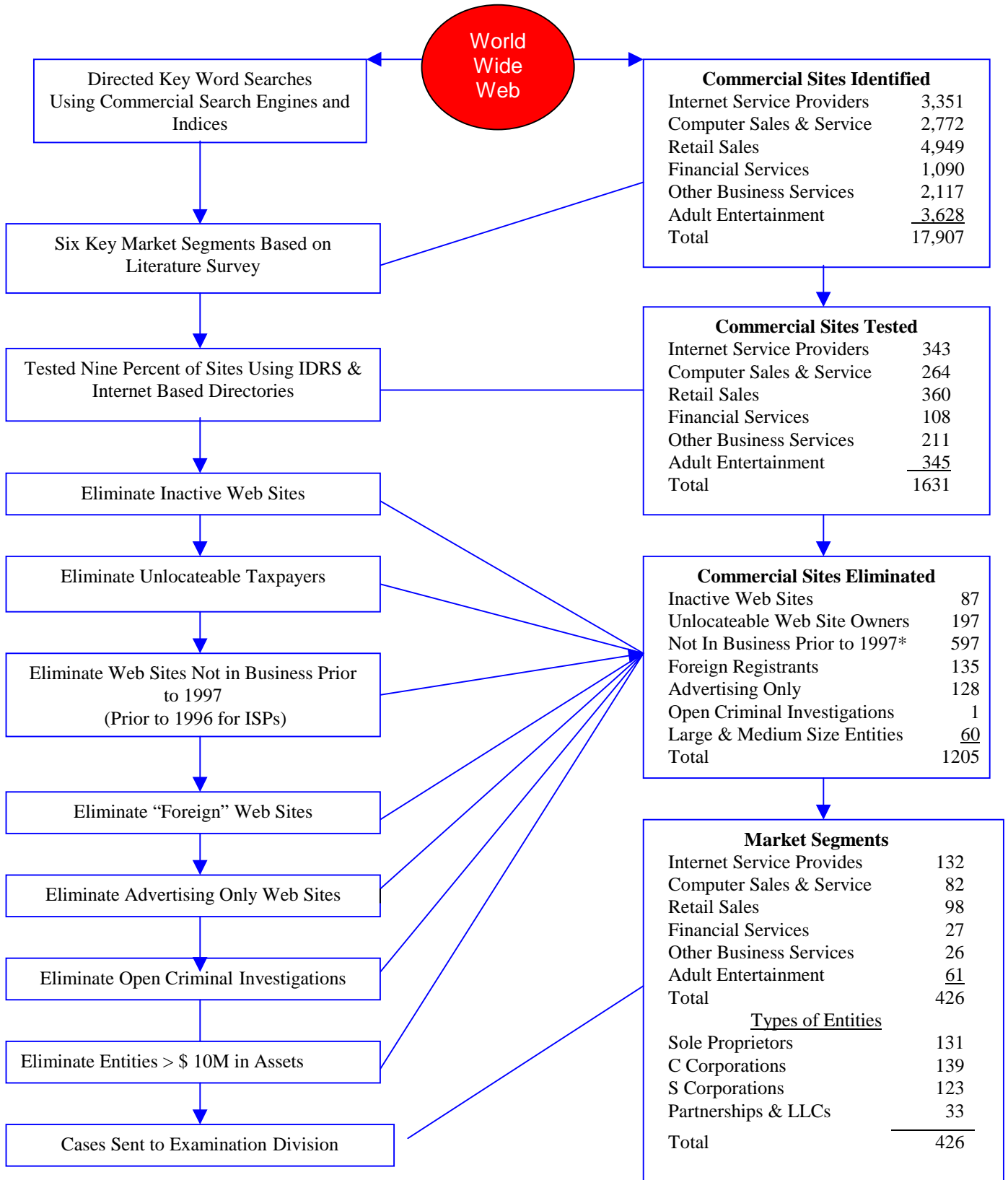


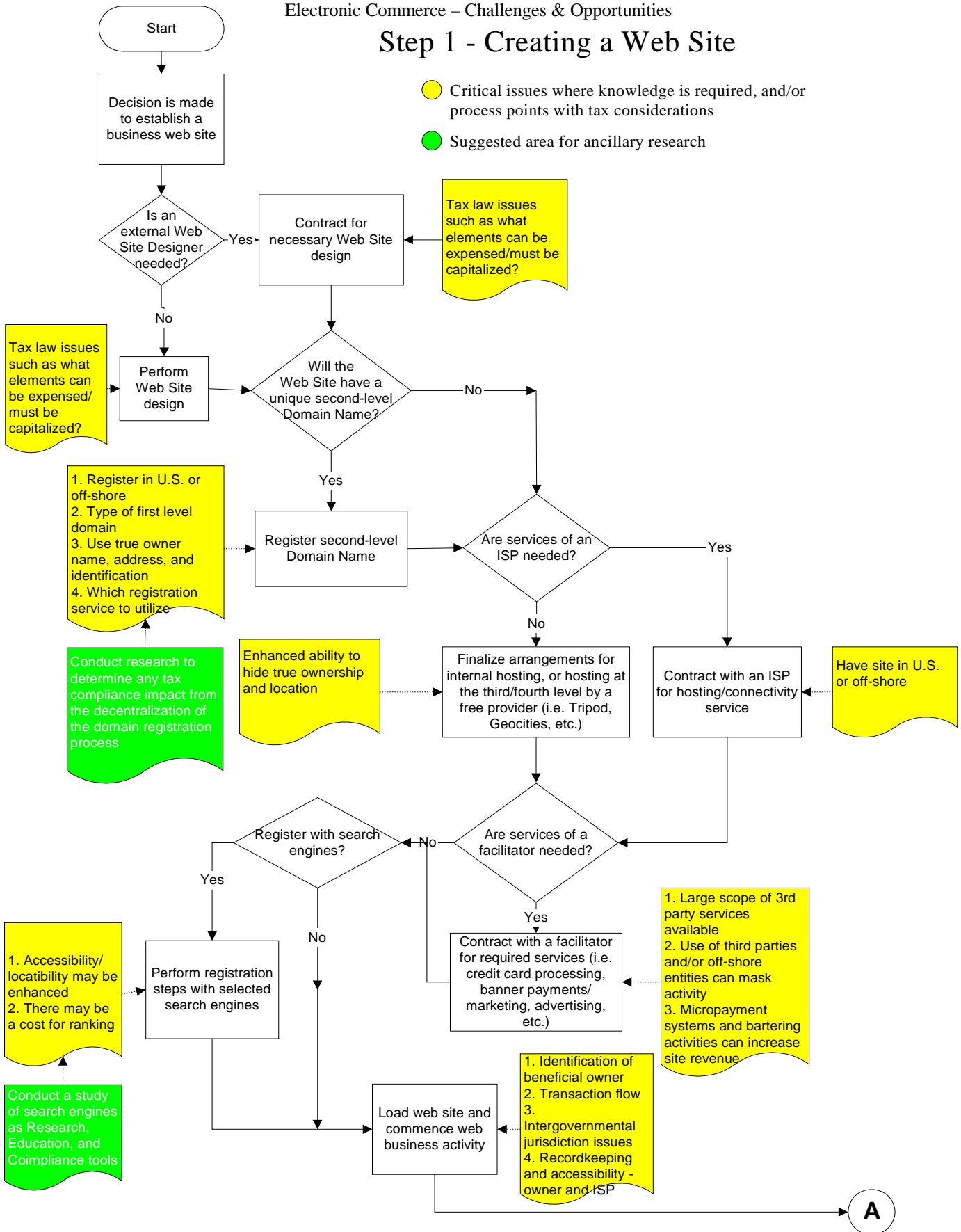
Figure B – 2

E-Commerce Business Model

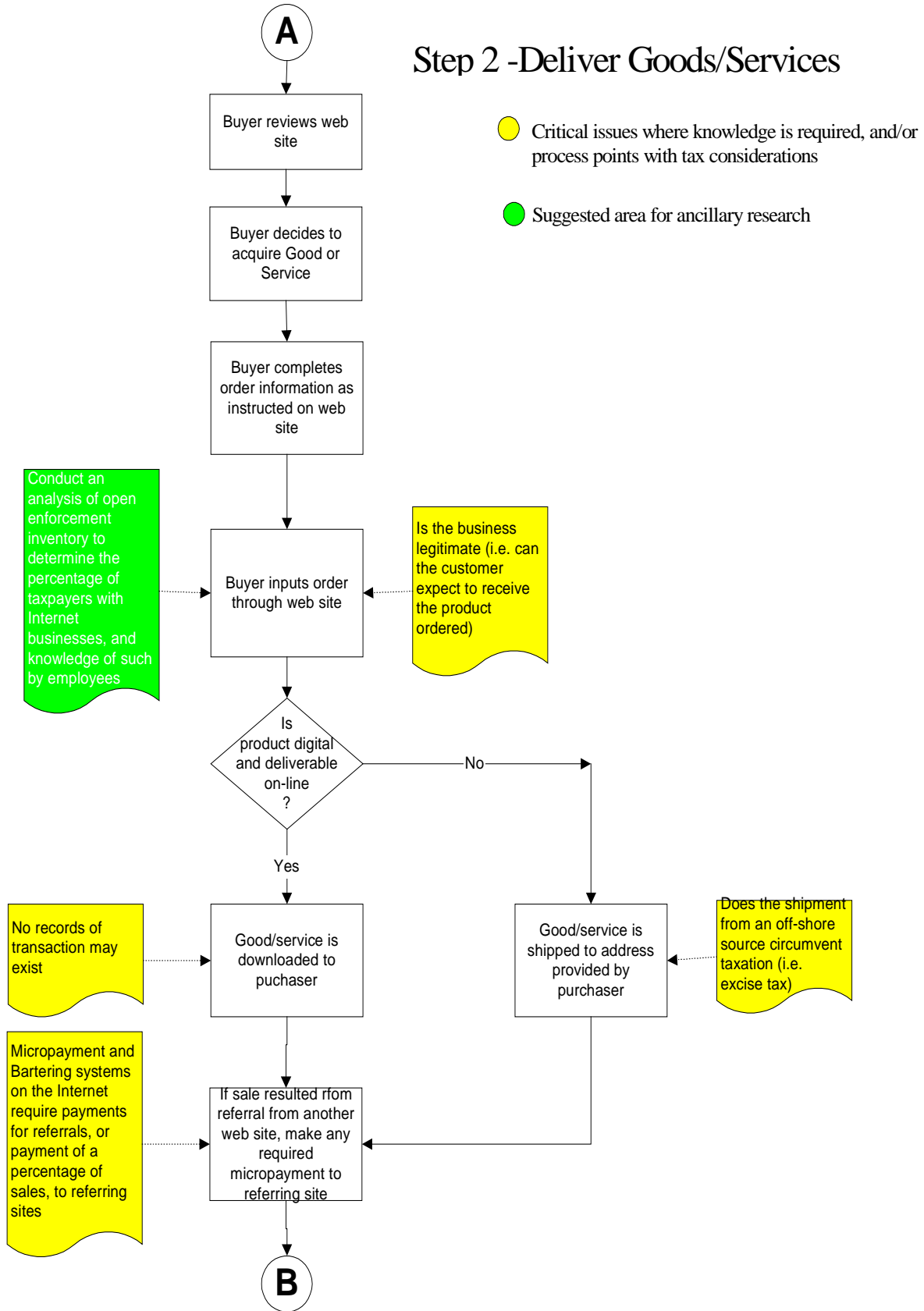
Steps in Creating and Operating an E-Commerce Entity
(starts on next page)

Step 1 - Creating a Web Site


- Critical issues where knowledge is required, and/or process points with tax considerations
- Suggested area for ancillary research

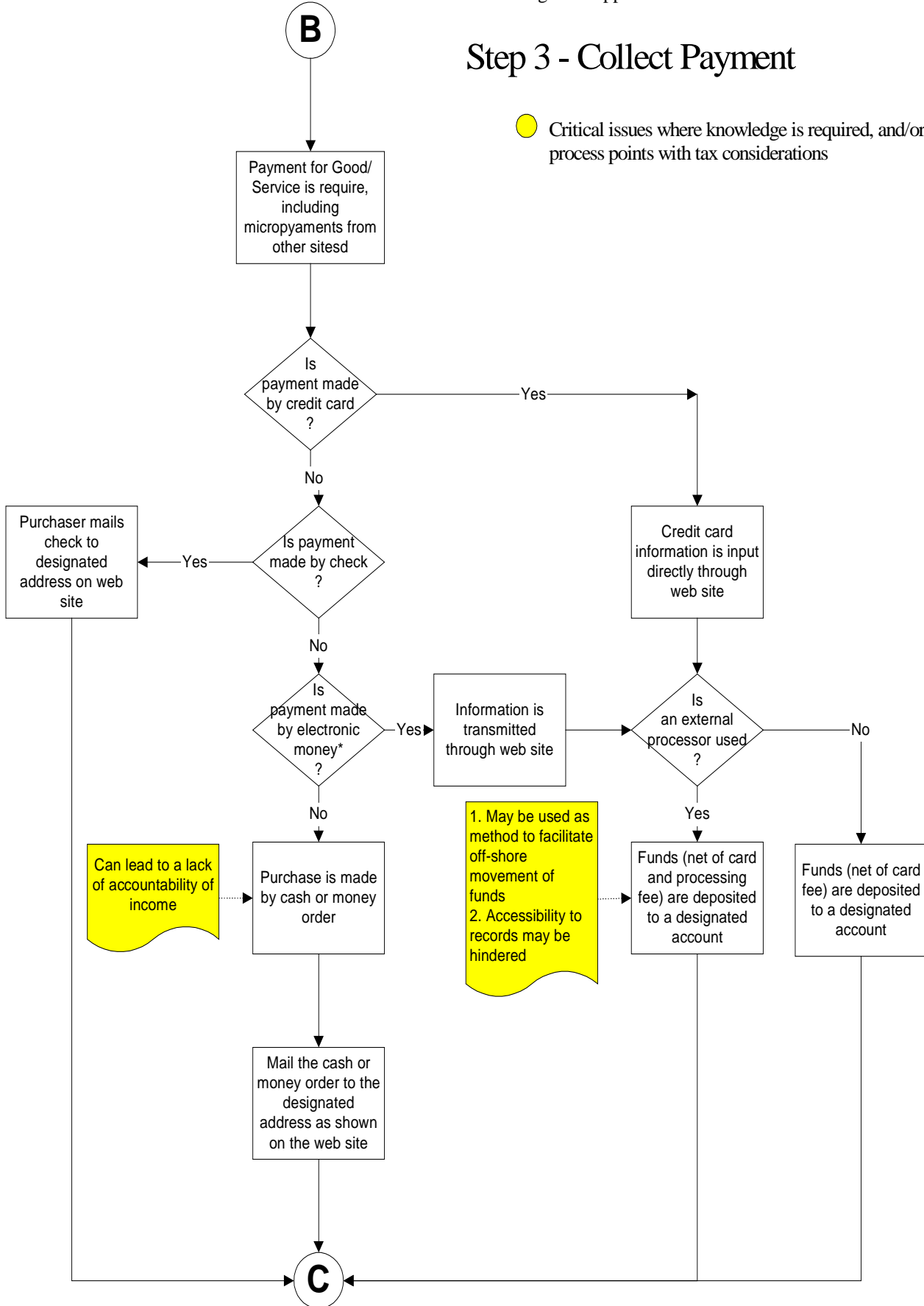


Step 2 -Deliver Goods/Services

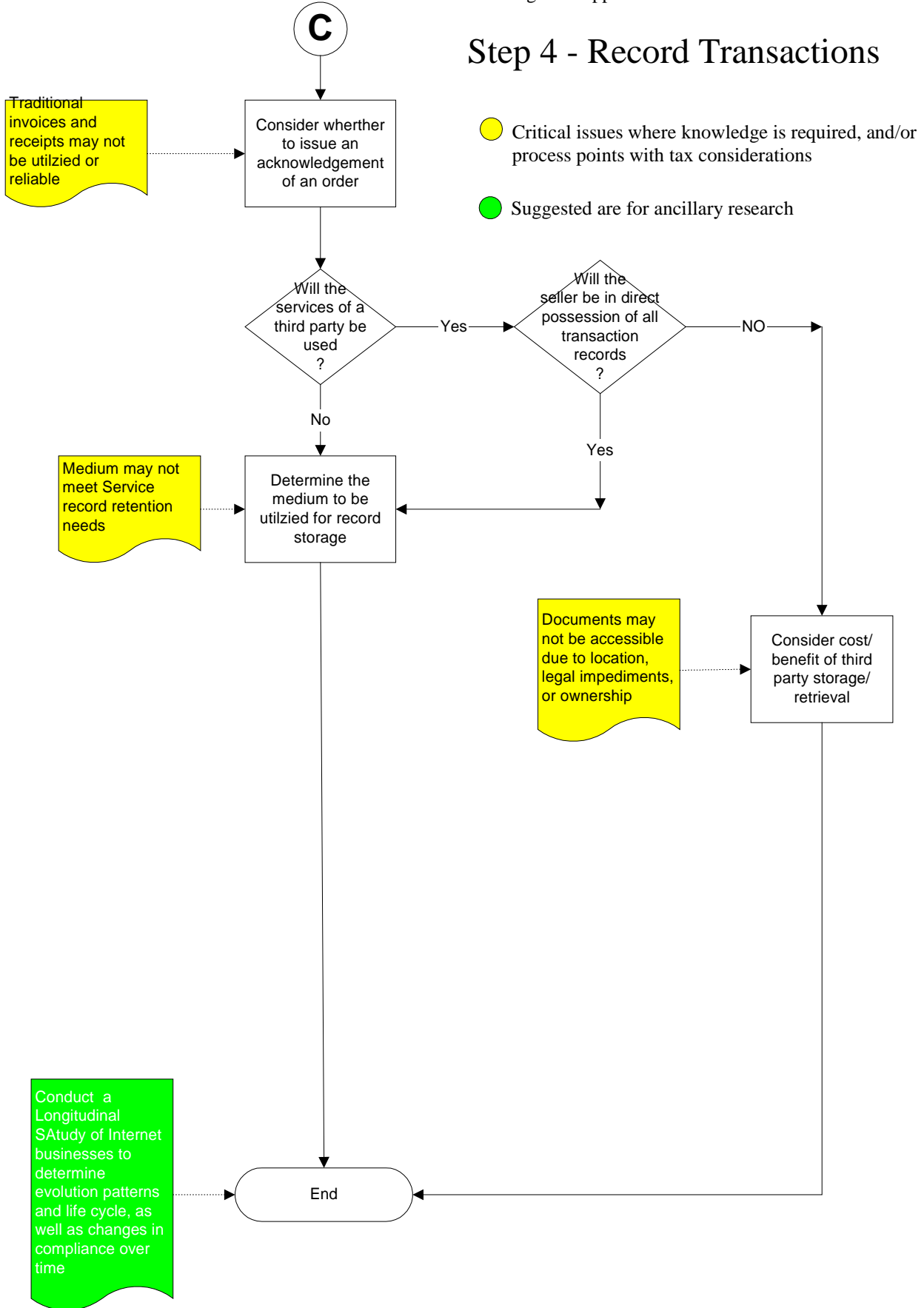


Step 3 - Collect Payment

 Critical issues where knowledge is required, and/or process points with tax considerations



Step 4 - Record Transactions



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**APPENDIX C
PROPOSED PROJECTS**

<i>Operating Division</i>	<i>Project</i>	<i>Description</i>
Compliance Studies and Strategic Research		
SB/SE	Domain Name Registration Procedures as a Tool for Masking Identities	1) Study of the impact of the expanded domain registration process on the ability of taxpayers to mask their identity. 2) Study compliance problems of businesses operating below second level.
LMSB, SB/SE	Digital Technologies as Tools for Masking Identities and Locations	1) Study of the compliance problems of inbound and outbound e – commerce activity. 2) Study of the compliance problems businesses that appear to be operating from foreign web sites (pseudo in bound transactions.)
LMSB, SB/SE	Longitudinal Study of E-Commerce Entities	Study of the evolution and life cycle of a sample of commercial web sites with particular emphasis on changes in ownership, filing compliance and payment compliance.
LMSB, SB/SE	Study of ISP Structures & Business Practices	Description of the business practices and role of the ISP in electronic commerce.
LMSB, SB/SE	Filing Compliance of ISPs	Follow-on study to ascertain the scope and reasons for the high nonfiling rate exhibited by ISP/IAPs

<i>Operating Division</i>	<i>Project</i>	<i>Description</i>
LMSB, SB/SE	Reporting Compliance of Computer Service/Sales Businesses	Follow-on Study to determine the reasons for the accuracy related problems for small and medium size computer wholesalers and retailers
LMSB, SB/SE	Emerging Tax Compliance Issues of New E-Commerce Business Models	Profile of the business practices and potential compliance problems associated with the following e-commerce business models, practices and entities: 1) E-Commerce Facilitators, 2) Virtual Communities, 3) Portals, 4) Infomediaries, 5) Auctions, 6) Reverse Auctions.
LMSB, SB/SE, TE/GE	Measurement & Tax Treatment of Internet Bartering	The Internet has elevated the scope and dimension of bartering beyond the restrictions of local economies and bartering societies. This project will explore the scope on Internet bartering and its potential tax implications.
LMSB, SB/SE, TE/GE	Analysis of Electronic Commerce Activity in Open Enforcement Inventory	Assessment of the impact of electronic commerce on open enforcement cases, including a study of enforcement staff awareness of the existence of a commercial web site.
LMSB, SB/SE	Profile of Electronic Payment Systems	Study of the mechanics of credit/debit card processing and emerging non-depository payment systems, with particular emphasis on the potential tax issues associated with financial disintermediation.
LMSB, SB/SE, W&I	Profile of On-line Dealers and Traders in Financial Products	Profile of activities of on-line brokers and day traders with particular emphasis on filing compliance.
LMSB, SB/SE, W&I	Impact of Remote Selling on Excise Tax Compliance	Remote selling of goods and services may eliminate the traditional collection points for excise taxes and transfer liability for the tax to the consumer. This set of projects will study the impact of the Internet for collection of the excise taxes on wagering and sporting equipment.

<i>Operating Division</i>	<i>Project</i>	<i>Description</i>
TE/GE	Tax Implications of E-Commerce Activities of Tax Exempt Organizations and Government Entities	Exempt organizations and governmental entities are using the Internet as a new source of revenues, such as advertising and participation in affiliate programs, operation of on-line gambling games. The tax treatment, such as the liability for the tax on Unrelated Business Income, and information return reporting requirements is unclear. This project will study the scope of these problems
Customer Service		
SB/SE	Tax Guide for E-Commerce Businesses	Publication that contains information specific to electronic commerce.
LMSB, SB/SE, TE/GE, W & I	Web Casts and Webinars for E-Commerce Businesses	Components of the project include: 1) the development of an on-line primer for businesses involved in electronic commerce 2) web-casting an e-commerce Q & A for business taxpayers 3) the marketing of an outreach program for new e-commerce businesses using name registration data from the Internet Corporation for Assigned Names and Numbers.
Employee Development		
LMSB, SBSE, TE/GE, W&I, CI, CC	Internet Primer for Employees, Internet Training for Employees, Audit Techniques Guide, and Collection Techniques Guide.	A training program for employees on the Internet and electronic commerce, including a multi-functional guide and specialized guides for customer service and enforcement staff.

APPENDIX D

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APPENDIX E

PROJECT COST & MILESTONES

Research Costs

Staff Position	Grade	Hourly Rate	Hours Expended	Project Cost
Program Analyst	13	\$39.41	2,340	\$92,219
Team Leader	14	\$46.58	1,560	\$72,665
Chief	15	\$54.75	320	\$17,520
Project Totals			4,220	\$182,404

Table E-1: Research Costs

Examination Division Costs

Staff Position	Grade	Hourly Rate	Hours Required	Project Cost
Revenue Agent	12	\$33.15	20,410	\$676,591
Accounting Aides	6	\$16.81	480	\$8,069
Project Totals			20,886	\$684,660

Table E-2: Examination Division Costs.

Other Project Costs

Item	Project Cost
Reference Materials	\$250
Travel for Meetings	\$500
Project Totals	\$700

Table E-3: Other Project Costs

Project Milestones

Project Proposal Submitted for Inclusion in FY'98 Research Plan	December 1997
Research Plan Submitted for Review	March 1998
Research Plan Revised & Resubmitted	April 1998
National CIP Approved	July 1998
Web Site Database Compiled	July 1998
Cases Identified for Audit	August 1998
Cases Files Sent to Districts	September 1998
Research Plan Approved by A/C Research	October 1998
E-Com Highlights News Letter Started*	November 1998
Cases Assigned to Revenue Agents	November 1998
Examinations Started	January 1999
Regional E-Com Seminars	February 1999
Technical Assistance from DORA	On-going
Preliminary Report/FY 2000 Research Recommendations	September 1999
Examinations Completed**	March 2000
Research Report Issued	June 2000
<p>* E-Com Highlights was published monthly through March 2000. A closeout issue is planned for July 2000.</p> <p>** Based on Interim checksheets. Ten percent (10%) of the cases are still under audit. The targeted completion date for all cases was May 1999. The original CIP close out date was September 30, 1999. Form 6546, Final/Termination Report Information Gathering Project is in the approval process.</p>	

Figure E-1: Project Milestones

APPENDIX F

ABSTRACT

Electronic Commerce – Compliance & Opportunities

Research Project 50.31

Upstate New York District Office Research & Analysis

The build-out of the Internet and the growth of electronic commerce are creating new business models that will affect the tax compliance of businesses that engage in remote selling. The lack of documentation standards for establishing an Internet identity will allow businesses the opportunity to mask their identities and their country of origin. The beneficial owners of 12% of the web sites could not be identified. Eight percent (8%) of the owners of the web sites tested claimed they were not U.S. citizens. The digital technologies of the Internet will allow businesses to manipulate the location of transactions. The manipulation of the country of origin and the location of a transaction is called regulatory arbitrage. Electronic payment systems and remote selling will eliminate existing information and tax collection tollbooths. This process is referred to as disintermediation. Failure to file is a problem among Internet businesses. Ten percent (10%) of the web sites studied had failed to file their 1997 income tax return. The failure to file rate among ISPs was 16%. Payment compliance was not a problem for Internet businesses in 1997. The majority of the balance due returns were filed by sole proprietorships. Ninety-one percent (91%) of the e-commerce tax gap is attributable to underreporting, especially by adult entertainment sites, computer/service businesses and ISPs. Thirty-eight (38%) of the underreporter cases involved unreported income. Thirty-nine percent (39%) of the businesses studied reported a loss in 1997, however Internet businesses are out performing their “brick and mortar” counterparts in terms of sales and profitability. The need to expand capacity is depressing profits of ISPs. Consolidation in this market segment is expected. IRS employees need training on the new e-commerce business models and digital technologies.

Keywords: accuracy, balance due, bartering, computers, electronic payment systems, disintermediation, electronic payment systems, electronic commerce, failure to file, e-commerce, e-business, Internet, IAP, ISP, Internet Service Provider, Internet commerce, World Wide Web, payment compliance, permanent establishment, reporting compliance, tax gap, underreporting.

Electronic Commerce – Challenges & Opportunities