

# FAIR USE IN THE U.S. ECONOMY



2007

## Economic Contribution of Industries Relying on Fair Use

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Part III of the report was prepared with the assistance of Professor Peter Jaszi of American University Washington College of Law.

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## PREFACE

CCIA is an association of information and communications technology firms dedicated to the belief that full, fair and open competition and innovation are the foundation upon which our dynamic technology economy has been built. In our highly competitive markets, technology innovators depend both upon copyright protection and its limits. The “limited monopoly” created by federal copyright law can encourage expression and provide crucial protection for products such as software and firmware. At the same time, CCIA and its members also depend on the ability to make fair use of protected works. While CCIA holds copyrights like the copyright protecting this study, for example, we also benefit – along with the rest of the public – from limitations on the reach of copyright, such as the fact that copyright does not extend to the raw data that forms the basis of this study.

Numerous studies have promoted the first half of the copyright equation – the value of copyrighted works, sometimes referred to as the “Copyright Economy” – but have overlooked the second part: the value that the U.S. economy derives from the limits that the Constitution, Congress, and the courts have placed on the rights of copyright holders like ourselves. This study seeks to ascertain the extent of this “Fair Use Economy.”

Following the methodological guidelines set down by the World Intellectual Property Organization (WIPO), this study is first economic analysis of that crucial component of the economy.

Fair use protects competition by guaranteeing that companies can reverse engineer software so that their products will work and ‘inter-operate’ with the products of their competitors. Fair use guarantees

journalists, scholars and ordinary citizens the right to quote and abstract from others’ writings, and so buttresses basic rights of free expression. And fair use guarantees that technological innovations such as the Internet itself, whose very function is to copy information from one place to another, can operate normally without running afoul of copyright law. Fair use thus helps to ensure that the benefits of copyright accrue to the public. It produces a multiplier effect without which we would all be poorer.

The study inside these covers lays out in explicit detail the economics of fair use industries. It is an extensive look at the value represented by balanced copyright. Balanced copyright law – the sort envisioned by the Framers of the Constitution – was once the law of the land. Unfortunately, the past decade has seen a slow erosion of this balance. This study illustrates that this erosion is not merely a philosophical issue; it endangers our economic growth and threatens millions of jobs. Our information policy must recognize the importance of the fair use economy and safeguard it from the unintended consequences of perhaps well meaning but overbroad copyright regulation.

**Ed Black**

*President & CEO*

Computer & Communications Industry Association

## EXECUTIVE SUMMARY

While policymakers pay much attention to copyrights, exceptions to copyright protection also promote innovation and are a major catalyst of U.S. economic growth. Specific exceptions to copyright protection under U.S. and international law, generally classified under the broad heading of Fair Use, are vital to many industries and stimulate growth across the economy. Companies benefiting from fair use generate substantial revenue, employ millions of workers, and, in 2006, represented one-sixth of total U.S. GDP.

Under guidelines published by the World Intellectual Property Organization (WIPO), economic activity associated with copyrights has been studied extensively. To date, however, the economic contribution of industries dependent on fair use has not been quantified. Thus, a primary objective of this study is to fill the gap and provide an initial assessment of the economic contribution generated by companies benefiting from fair use.

Fair use is an important restriction to the rights conferred on original works by the U.S. Copyright Act of 1976: “The fair use of a copyrighted work ... is not an infringement of copyright.”<sup>1</sup> The fair use doctrine, and other limitations and exceptions, have grown in importance with the rise of the digital economy, as fair use permits a range of activities that are critical to many high technology businesses and are an important foundation of the Internet economy.

The beneficiaries of fair use encompass a broad range of companies, particularly those whose business activities involve the Internet, as well as consumers. The ubiquity of the Internet means that its benefits are widespread as well.

Industries that depend on or benefit from fair use include:

- manufacturers of consumer devices that allow individual copying of copyrighted programming;
- educational institutions;
- software developers; and
- internet search and web hosting providers.

<sup>1</sup> 17 U.S.C. § 107.

As summarized in the enclosed report, the courts have held that fair use is integral to many industries. The courts have established, for example, that fair use permits the main service provided by search engines, that software development depends on making temporary copies to facilitate the programming of interoperability, and that consumers can make copies of television and radio programming for personal use.

Industries benefiting from fair use have grown dramatically within the past 20 years, and their growth has had a profound impact on the U.S. economy. The report contains detailed data by industry and summarizes activity and growth in five areas:

### REVENUE

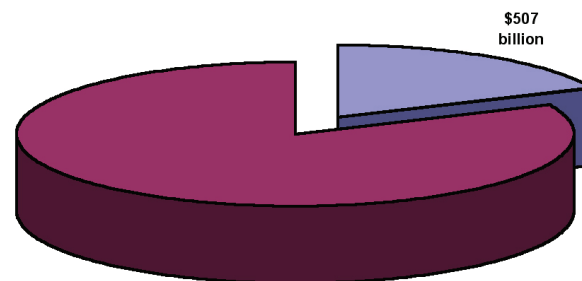
In 2006, fair use industries generated revenue of \$4.5 trillion, a 31 percent increase over 2002 revenue of \$3.5 trillion. In percentage terms, the most significant growth occurred in electronic shopping, audio and video equipment manufacturing, Internet publishing and broadcasting, Internet service providers and web search portals, and other information services.

### VALUE ADDED

Value added equals a firm’s total output minus its purchases of intermediate inputs and is the best measurement of an industry’s economic contribution to national GDP. In 2006, fair use-related industry value added was \$2.2 trillion, 16.6 percent of total U.S. current dollar GDP.

Fair use industries also grew at a faster pace than the overall economy. From 2002 to 2006, the fair use industries contributed \$507 billion to U.S. GDP growth, accounting for 18.3 percent of U.S. current dollar economic growth.

**Chart ES1: Fair Use Industries' Contribution to Current Dollar GDP Growth, 2002-2006**



Sources: See Appendix II, Table 2.

## EXECUTIVE SUMMARY [CONTINUED]

### EMPLOYMENT

Employment in industries benefiting from fair use increased from 10.5 million in 2002 to 10.8 million in 2006. Thus, about one out of every eight workers in the United States is employed in an industry that benefits from the protection afforded by fair use.

Further illustrating the rapid growth of fair use industries, total payrolls expanded rapidly, rising from \$908 billion in 2002 to \$1.2 trillion in 2006.

### PRODUCTIVITY

Productivity, the amount of goods and services that can be produced with a given number of inputs, is the foundation for rising living standards. From 2002 to 2006, the productivity of U.S. fair use industries increased to over \$128,000 per employee in 2006, far exceeding economy-wide productivity of \$90,000 per employee. Numerous researchers have determined that information technology companies, including those depending on fair use, have fueled U.S. productivity growth.

### EXPORTS

Exports related to fair use industries increased by nearly 50 percent from \$131 billion in 2002 to an estimated \$194 billion in 2006. Exports of trade-related services, including Internet or online services, rose from \$578 million in 2002 to an estimated \$2.6 billion in 2005, representing an annual growth rate of 65 percent, the most rapid growth among all the industries represented.

By any measure, the growth rate of fair use industries has outpaced overall economic growth in recent years, fueled productivity gains, and helped the overall economy sustain continued strong growth rates.

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The U.S. economy is an increasingly knowledge-based economy that benefits from the dynamic diversity of industries that depend on fair use exceptions to copyright protection. Through the growth of the Internet and related information technology revolution, the U.S. economy has benefited from the creation and rapid expansion of new industries, and a revival of productivity growth that supports higher living standards.

The research indicates that the industries benefiting from fair use and other limitations and exceptions make a large and growing contribution to the U.S. economy. The fair use economy in 2006 accounted for \$4.5 trillion in revenues and \$2.2 trillion in value added, roughly one-sixth of total U.S. GDP. It employed more than 17 million people and supported a payroll of \$1.2 trillion. It generated \$194 billion in exports and rapid productivity growth.

The protection afforded by fair use has been a major contributing factor to these economic gains, and will continue to support growth as the U.S. economy becomes even more dependent on information industries.

# ECONOMIC CONTRIBUTION OF FAIR USE INDUSTRIES TO THE U.S. ECONOMY

## I. INTRODUCTION

In 2003, the World Intellectual Property Organization (WIPO) produced a guide on surveying the economic contribution of copyright-based industries.<sup>2</sup> Even before the guide was completed, several countries had produced reports assessing and promoting the role of copyright-based industries.<sup>3</sup> In contrast, the large and growing economic contribution of industries that depend on and/or benefit from limitations and exceptions such as the fair use of copyrighted materials has not been studied extensively. This report's objective is to fill this gap and, based on a comprehensive review of available data, estimate the economic activity and scope of industries benefiting from fair use.

Fair use is an important restriction to the rights conferred on original works by the U.S. Copyright Act of 1976:<sup>4</sup> "The fair use of a copyrighted work for ... purposes such as criticism, comment, news reporting, teaching (including multiple copies for classroom

<sup>2</sup> Guide on Surveying the Economic Contribution of the Copyright-Based Industries, WIPO, Geneva 2003 ("WIPO Guide").

<sup>3</sup> Id. Table 1.1 in the WIPO Guide lists 13 separate national studies of copyright industries. See also Stephen E. Siwek, *Copyright Industries in the U.S. Economy: The 2006 Report*, prepared for the International Intellectual Property Alliance (IIPA), November 2006, available at [www.iipa.com](http://www.iipa.com).

<sup>4</sup> Michael A. Einhorn, *Media, Technology and Copyright: Integrating Law and Economics* (Edward Elgar Publishing, 2004) at 1.

use), scholarship, or research is not an infringement of copyright."<sup>5</sup> The fair use doctrine, and other limitations and exceptions to copyright,<sup>6</sup> have grown in importance with the rise of the digital economy, as fair use permits a range of activities that are critical to many high technology businesses, including search portals and web hosting.<sup>7</sup>

Industries benefiting from fair use have grown dramatically within the past 20 years, and their growth has had a profound impact on the U.S. economy.<sup>8</sup> The development and spread of the Internet as a medium for both business and personal use has been creative and transformative. The creation of new businesses (e.g., Google and Amazon) and business activities has in turn fueled demand from other sectors of the U.S. economy (e.g., fiber optics, routers, and consumer electronics) and transformed a host of business processes (e.g., communications and procurement).

The advent of the Internet and networking technology also has been widely credited with reviving U.S. productivity growth after two-decades of below-trend productivity.<sup>9</sup> As higher productivity is an important source of income to labor and capital resources, the "new economy" has helped spur overall economic growth and offset structural declines in other sectors of the economy.

Fair use of copyrighted material and other limitations and exceptions (L&E) are an important foundation of the Internet economy. For example, one force driving the expansion of the Internet as a tool for commerce and education is the user's ability to locate useful information with widely available search engines.<sup>10</sup> The courts have held that the main

<sup>5</sup> 17 U.S.C. § 107. See Einhorn at 1 and 8, *fn.* 5.

<sup>6</sup> The use of "fair use" in this report is a shorthand reference intended to include fair use as well as certain related copyright limitations and exceptions. The complete set of limitations and exceptions studied herein are listed in Part III and described further in Appendix III.

<sup>7</sup> See, for example, Jonathan Band, "Fair Use: Its Effects on Consumers and Industry," Testimony before the Committee on Energy and Commerce, Subcommittee on Commerce, Trade, and Consumer Protection (November 16, 2005).

<sup>8</sup> For a literature review and discussion of the impact of the "new economy" on official U.S. economic statistics, see, J. Stephen Landefeld and Barbara M. Fraumeni, "Measuring the New Economy," *Survey of Current Business* (March 2001).

<sup>9</sup> For a survey of the productivity-related literature, see Landefeld and Fraumeni at 27-8.

## INTRODUCTION [CONTINUED]

service provided by search engines is fair use.<sup>11</sup> Absent the exceptions to copyright law provided by the fair use doctrine, search engine firms and others would face greater liability for infringement, a significant deterrent to providing this valuable service. Such an outcome would thwart the educational purposes and growing commerce facilitated by Internet search engines, thereby reducing the value of the Internet to the economy.

Other important activities made possible by fair use include software development, which in many cases requires the making of temporary copies of existing programs to facilitate the programming of interoperability,<sup>12</sup> and web hosting, which could be liable for any infringement by users but for limitations and exceptions.<sup>13</sup> The fair use doctrine also permits end users of copyrighted material to make digital copies of programming for personal use. Thus, because of fair use, consumers can enjoy copyrighted programming at a later time (“time-shifting”),<sup>14</sup> transfer the material from one device to another (“space shifting”),<sup>15</sup> and make temporary cache copies of websites on

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**10** Search engine software copies vast quantities of information from publicly accessible websites onto the search engine’s database. Users then access the search engine’s database for relevant information, retrieving links to the original site as well as to the “cache” copy of the website stored in the database.

**11** The Ninth Circuit in *Kelly v. Arriba Soft*, 336 F.3d 811 (9th Cir. 2003) found that the caching of reduce-sized images copied from websites, and the display of these images in response to search queries, constituted a fair use. It recently reaffirmed that proposition in *Perfect 10, Inc. v. Amazon.com, Inc.*, 487 F.3d 701 (9th Cir. 2007). The district court in *Field v. Google*, 412 F. Supp. 2d 1106 (D. Nev. 2006) excused Google’s display of text cached in its search database as a fair use.

**12** See *Sega v. Accolade*, 977 F.2d 1510 (9th Cir. 1992); *Atari v. Nintendo*, 975 F.2d 832 (Fed. Cir. 1992); *Sony v. Connectix*, 203 F.3d 596 (9th Cir. 2000). (Fair use permits the copying that occurs during the course of software reverse engineering.)

**13** Section 512(c) of the Digital Millennium Copyright Act (DMCA) provides safe harbors for the entities hosting user content.

**14** *Sony Corp. v. Universal City Studios, Inc.*, 464 U.S. 417, 423-24 (1984).

**15** *Recording Industry Ass’n of America v. Diamond Multimedia Sys., Inc.*, 180 F.3d 1072, 1079 (9th Cir. 1999).

the random access memory of their computers.<sup>16</sup> The utility derived from these activities has spawned consumer purchases of a broad range of products such as digital video recorders and MP3 players, stimulating additional economic activity in the United States and in all of the countries where the machines used for these activities are manufactured.

Certainly, copyright protection provides an incentive for the production of creative works and these works have a positive impact on the U.S. economy. The positive aspects of copyright protection should not, however, obscure that fair use is also an important economic driver in the digital age. The recognition of the economic benefits of the digital economy made possible by fair use specifically, and the limitations and exceptions to copyright law in general, have led to a spirited debate on the role of copyright law in the digital age.<sup>17</sup>

To contribute to the debate, this report presents a comprehensive quantification of the growing economic significance of industries benefiting from fair use. The methodology used in the report defines a set of “core industries” that either would not exist, or be much smaller, but for the limitations and exceptions to copyright law. In turn, similar to the WIPO guidelines, we also evaluate the secondary sectors or non-core industries that benefit from fair use.<sup>18</sup> The present endeavor is by no means the final word on the subject, but we hope that it will serve as a stimulus to further refinement and better understanding of the digital economy and the important role and economic contribution made by fair use in the digital age.

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**16** *Perfect 10, Inc. v. Amazon.com, Inc.*, 487 F.3d 701 (9th Cir. 2007).

**17** For an explanation of both views, see Joseph Ferrell and Carl Shapiro, “Intellectual Property, Competition, and Information Technology,” in Hal Varian, Joseph Ferrell, and Carl Shapiro, ed., *The Economics of Information Technology* (Cambridge University Press, Banca Intessa, 2004) at 58-61.

**18** The WIPO framework for evaluating copyright-based industries suggests 4 categories: core, interdependent, partial, and non-dedicated support industries. WIPO Guide at 27-35. As discussed in Section II, this report adopts a similar but more streamlined definition of core and non-core industries.

## II. DESCRIPTION OF FAIR-USE INDUSTRIES

Economic activity occurs when the desire to consume goods or services is met by efforts to supply those goods and services. Suppliers purchase inputs to production, such as land, labor, capital, natural resources, and intermediate inputs, and then add value to those inputs. The good or service that results from these economic activities is then sold to an end user, or to another business which uses the product or service as an input to its production process.

As a general framework for the analysis, we have adopted the guidelines suggested by WIPO, and used in other studies, to evaluate the economic contribution of fair use.<sup>19</sup> However, instead of defining four distinct groups of industries as suggested in the WIPO guidelines, we adopted a simpler definition of core and non-core industries that depend on or benefit from fair use. Core industries are defined as industries that produce goods and services whose activities depend in large measure on the existence of limitations and exceptions provided in U.S. copyright law. The heart of the core group includes companies whose operations hinge on the Internet. Due to the nature of the Internet – in particular the intensive use of temporary copies – all of the Internet-based industry groups and industries are included in the fair-use core.<sup>20</sup> The tabulation in Part III identifies key core sectors and the corresponding NAICS codes.

As shown in Part III, the core covers a broad range of industries whose output is driven increasingly by activities made possible by fair use and the Internet.<sup>21</sup>

**19** See WIPO at 32. As noted by the WIPO, the “definition and identification of ‘non-core’ industries has been characterized by blur [sic] borders and frequent changes across borders.”

**20** This report uses the 2002 version of the North American Industrial Classification System (NAICS). The 1997 NAICS replaced the old SIC standard. In the NAICS convention, a two-digit number refers to an industry sector. For example, the code 51 refers to the Information sector. Three, four and five-digit codes refer to an industry subsector, a industry group, and industry, respectively. Codes of six or more digits are also considered industries in their own right even though they are part of a larger industry. This study incorporates data mostly at the three and four-digit industry group level, and, as appropriate, at the five-or-more-digit industry level, without double counting. For ease of reference, the Technical Appendix attached to this report lists all of the NAICS codes and official descriptions of the industries and industry groups considered.

**21** For example, recent advances in processing speed and software functionality are being used to take advantage of the richer multi-media experience now available from the web. Thus, purchases of new computers and software increasingly are driven by the desire to maxi-

Other information industries depend on fair use exceptions for their ability to engage in basic activities. Additional sectors, such as the education industry, benefit from the non-copyrightability of facts and other fair use freedoms.<sup>22</sup>

In addition to these core industries, non-core sectors also benefit significantly from fair use. Non-core industries included in this study consist of industries whose activities or output facilitate the output of the fair use core. Companies in these sectors derive a significant amount of their current business from the demand generated by fair use and the Internet, and are interdependent with the core industries.<sup>23</sup>

As the Internet economy is dynamic, and continues to expand and influence a range of sectors, the core/non-core classification scheme used for this study may undercount the scope of industries benefiting from fair use. It is likely, for example, that many non-core industries benefit from services provided by Internet-based companies that depend on fair use. For purposes of this study, we have adopted a conservative approach and limited the core and non-core industries to the sectors listed above and detailed in Part III. Subsequent studies, benefiting from additional data sources and available information, may show a far greater scope of activity derived from fair use.<sup>24</sup>

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mize the Internet experience, rather than to increase word processing and spreadsheet performance.

**22** See, for example, Kurt Larsen and Stéphan Vincent-Larsen, “The Impact of ITC on Tertiary Education,” in Brian Kahin and Dominique Foray, ed., *Advancing Knowledge and the Knowledge Economy* (MIT Press, 2006) at 151-168.

**23** WIPO advocates the inclusion of such “interdependent copyright industries” as part of copyright-based industries. WIPO defines interdependent industries as “industries that are engaged in production, manufacture, and sale of equipment whose function is wholly or primarily to facilitate the creation, production, or use of works and other protected subject matter. See World Intellectual Property Organization (WIPO), *Guide on Surveying the Economic Contribution of the Copyright-Based Industries* (Geneva, 2003) at 33 (available at [http://www.wipo.org/copyright/en/publications/pdf/copyright\\_pub\\_893.pdf](http://www.wipo.org/copyright/en/publications/pdf/copyright_pub_893.pdf)).

**24** As the Internet economy grows, it is likely that the Commerce Department and other agencies will expand and refine their data collection efforts to track this growth.



### III. SPECIFIC INDUSTRY BENEFITS FROM FAIR USE AND OTHER LIMITATIONS AND EXCEPTIONS TO COPYRIGHT LAW

*Part III of the report was prepared with the assistance of Professor Peter Jaszi of American University Washington College of Law.*

Numerous provisions of U.S. copyright law fall under the broad heading of fair use as the term is used in this study. In this Part, we review the individual provisions and illustrate how they apply to and benefit core and non-core industries. A tabular format provides the most effective presentation of each industry and the specific fair use provision that benefits it. Table 1 aptly summarizes the extended impact of fair use across numerous sectors. The table represents, by NAICS category and description, those industries that depend on fair use in U.S. copyright law. Each NAICS code is followed by citations to statutory provisions and principles of law embodying the limitations and exceptions upon which the described industry depends. Cross-references to other NAICS codes identify interdependent industries. The accompanying glossary in Appendix III supplements the discussion of each fair use provision and identifies relevant court decisions.

For example, the Internet publishing and broadcasting industry, NAICS code 516, appears in the first row of Table 1. The third column of the table indicates that NAICS 516 relies on the following fair use provisions:

- 102(b)—idea/expression dichotomy;
- 107—fair use: criticism, comment, news reporting, browser, cache copies;
- 512—ISP safe harbors;
- 102(a)—noncopyrightability of facts;
- 302-304—copyright term; and
- 105—no copyright in U.S. government works.

The third column also includes the NAICS codes of six interdependent industries: NAICS 5181 (Internet service providers and web search portals); 3341 (computer and peripheral equipment manufacturing); 5112 (software publishers); 5415 (computer system design and related services); 334413 (semiconductors and related device manufacturing); and 3346 (manufacturing and reproducing magnetic and optical media).

[Text continues on page 40]

## TABLE 1

**Table 1: Fair Use Industry Definitions**

Industry	NAICS Codes	Detailed NAICS Description	Reliance on Fair Use
Internet publishing and broadcasting	516	Industries in the Internet Publishing and Broadcasting subgroup establishments that publish and/or broadcast content exclusively for the Internet. The unique combination of text, audio, video, and interactive features present in informational or cultural products on the Internet justifies the separation of Internet publishers and broadcasters from more traditional publishers included in subsector 511, Publishing Industries (except Internet) and subsector 515, Broadcasting (except Internet).	102(b) (idea/expression dichotomy); 107 (fair use: criticism; comment; news reporting; browser, cache copies); 512 (ISP safe harbors); 102(a) (non-copyrightability of facts); 302-304 (copyright term); 105 (no copyright in U.S. government works); see also exceptions listed under NAICS 5181, 3341, 5112, 5415, 334413, 3346
Internet service providers and web search portals	5181	Industries in the Internet Publishing and Broadcasting subgroup establishments that publish and/or broadcast content exclusively for the Internet. The unique combination of text, audio, video, and interactive features present in informational or cultural products on the Internet justifies the separation of Internet publishers and broadcasters from more traditional publishers included in subsector 511, Publishing Industries (except Internet) and subsector 515, Broadcasting (except Internet).	102(b) (non-copyrightability of interface specifications); 107 (fair use: search; browser, cache copies); 512 (ISP safe harbors); Sony principle; see also exceptions listed under NAICS 3341, 5112, 5415, 334413, 3346

**Table 1 (continued): Fair Use Industry Definitions**

Industry	NAICS Codes	Detailed NAICS Description	Reliance on Fair Use
Other information services	519	Industries in the Other Information Services subsector group establishments supplying information, storing information, providing access to information, and searching and retrieving information. The main components of the subsector are news syndicates, libraries, and archives.	102(a) (non-copyrightability of facts); 102(b) (idea/expression dichotomy, non-copyrightability of interface specifications); 107 (fair use: criticism; teaching; scholarship; research); 108 (library uses); 109 (first sale doctrine); 512 (ISP safe harbors); 302-304 (copyright term); 105 (no copyright in U.S. government works); see also exceptions listed under NAICS 3341, 5112, 5415, 334413, 3346
Data processing, hosting, and related services	5182	This industry comprises establishments primarily engaged in providing infrastructure for hosting or data processing services. These establishments may provide specialized hosting activities, such as web hosting, streaming services or application hosting, provide application service provisioning, or may provide general time-share mainframe facilities to clients. Data processing establishments provide complete processing and specialized reports from data supplied by clients or provide automated data processing and data entry services.	107 (fair use: browser copies); 512 (ISP safe harbors); Sony principle; see also exceptions listed under NAICS 3341, 5112, 5415, 334413, 5181, 3346

**Table 1 (continued): Fair Use Industry Definitions**

Industry	NAICS Codes	Detailed NAICS Description	Reliance on Fair Use
Computer and peripheral equipment manufacturing	3341	<p>This industry comprises establishments primarily engaged in manufacturing and/or assembling electronic computers, such as mainframes, personal computers, workstations, laptops, and computer servers; and computer peripheral equipment, such as storage devices, printers, monitors, input/output devices and terminals. Computers can be analog, digital, or hybrid. Digital computers, the most common type, are devices that do all of the following: (1) store the processing program or programs and the data immediately necessary for the execution of the program; (2) can be freely programmed in accordance with the requirements of the user; (3) perform arithmetical computations specified by the user; and (4) execute, without human intervention, a processing program that requires the computer to modify its execution by logical decision during the processing run. Analog computers are capable of simulating mathematical models and comprise at least analog, control, and programming elements. This industry comprises establishments primarily engaged in computer software publishing or publishing and reproduction. Establishments in this industry carry out operations necessary for producing and distributing computer software, such as designing, providing documentation, assisting in installation, and providing support services to software purchasers. These establishments may design, develop, and publish, or publish only.</p>	<p>102(b) (non-copyrightability of interface specifications); 107 (fair use: browser copies; buffer copies; time and space shifting; reverse engineering); 117(a) (backup, essential step copies); Sony principle; see also exceptions listed under NAICS 5112, 5181, 5182, 3341, 334413</p>
Software publishers	5112	<p>engaged in computer software publishing or publishing and reproduction. Establishments in this industry carry out operations necessary for producing and distributing computer software, such as designing, providing documentation, assisting in installation, and providing support services to software purchasers. These establishments may design, develop, and publish, or publish only.</p>	<p>102(b) (non-copyrightability of interface specifications); 107 (fair use: reverse engineering); 117(a) (back up, essential step copies); Sony principle; see also exceptions listed under NAICS 516, 5181, 5182, 3341, 5415, 334413, 3346</p>

**Table 1 (continued): Fair Use Industry Definitions**

Industry	NAICS Codes	Detailed NAICS Description	Reliance on Fair Use
Audio & video equipment manufacturing	3343	<p>This industry comprises establishments primarily engaged in manufacturing electronic audio and video equipment for home entertainment, motor vehicle, public address and musical instrument amplifications. Examples of products made by these establishments are video cassette recorders, televisions, stereo equipment, speaker systems, household-type video cameras, jukeboxes, and amplifiers for musical instruments and public address systems.</p>	<p>107 (fair use: buffer copies, time and space shifting); Sony principle; see also exceptions listed under NAICS 3346, 334413</p>
Video tape and disc rental	53223	<p>This industry comprises establishments primarily engaged in renting prerecorded video tapes and discs for home electronic equipment.</p>	<p>109(a) (first sale); see also exceptions listed under NAICS 3343, 3346</p>
Business to business electronic markets	42511	<p>This industry comprises business-to-business electronic markets bringing together buyers and sellers of goods using the Internet or other electronic means and generally receiving a commission or fee for the service. Business-to-business electronic markets for durable and nondurable goods are included in this industry.</p>	<p>See exceptions listed under NAICS 5181, 5182, 3341, 5112, 5415, 334413, 3346</p>
Electronic shopping	454111	<p>This U.S. industry comprises establishments engaged in retailing all types of merchandise using the Internet.</p>	<p>107 (fair use: browser copies; search); 109(a) (first sale); 512 (ISP safe harbors); Sony principle; see also exceptions listed under NAICS 5181, 5182, 3341, 5112, 5415, 33413, 3346</p>

**Table 1 (continued): Fair Use Industry Definitions**

Industry	NAICS Codes	Detailed NAICS Description	Reliance on Fair Use
Electronic auctions	454112	This U.S. industry comprises establishments engaged in providing sites for and facilitating consumer-to-consumer or business-to-consumer trade in new and used goods, on an auction basis, using the Internet. Establishments in this industry provide the electronic location for retail auctions, but do not take title to the goods being sold.	107 (fair use: browser copies; search); 109(a) (first sale); 512 (ISP safe harbors); Sony principle; see also exceptions listed under NAICS 5181, 5182, 3341, 5112, 5415, 33413, 3346
Computer & office machine repair & maintenance	811212	This industry comprises establishments primarily engaged in repairing and maintaining computers and office machines without retailing new computers and office machines, such as photocopying machines; and computer terminals, storage devices, printers; and CD-ROM drives.	117(c) (machine maintenance or repair); see also exceptions listed under NAICS 3341
Computer system design and related services	5415	This industry comprises establishments primarily engaged in providing expertise in the field of information technologies through one or more of the following activities: (1) writing, modifying, testing, and supporting software to meet the needs of a particular customer; (2) planning and designing computer systems that integrate computer hardware, software, and communication technologies; (3) on-site management and operation of clients' computer systems and/or data processing facilities; and (4) other professional and technical computer-related advice and services.	See exceptions listed under NAICS 516, 5181, 5182, 3341, 5112, 454111, 454112, 42511, 334413, 3346

**Table 1 (continued): Fair Use Industry Definitions**

Industry	NAICS Codes	Detailed NAICS Description	Reliance on Fair Use
Wired telecommunications carriers	5171	This industry group comprises establishments primarily engaged in operating, maintaining or providing access to facilities for the transmission of voice, data, text, sound, and video using wired telecommunications networks. Transmission facilities may be based on a single technology or a combination of technologies.	See exceptions listed under NAICS 3341, 5112, 5415, 5182, 334413, 3346, 3342
Wireless telecommunications carriers (except satellite)	5172	This industry group comprises establishments primarily engaged in operating, maintaining or providing access to facilities for the transmission of voice, data, text, sound, and video using wireless telecommunications networks. Transmission facilities may be based on a single technology or a combination of technologies.	See exceptions listed under NAICS 3341, 5112, 5415, 5182, 334413, 3346, 3342
Telecommunications Resellers	5173	This industry comprises establishments primarily engaged in purchasing access and network capacity from owners and operators of the networks and reselling wired and wireless telecommunications services (except satellite) to businesses and households. Establishments in this industry resell telecommunications; they do not operate and maintain telecommunications switching and transmission facilities.	See exceptions listed under NAICS 3341, 5112, 5415, 5182, 334413, 3346, 3342

**Table 1 (continued): Fair Use Industry Definitions**

Industry	NAICS Codes	Detailed NAICS Description	Reliance on Fair Use
Satellite Telecommunications	5174	This industry comprises establishments primarily engaged in providing point-to-point telecommunications services to other establishments in the telecommunications and broadcasting industries by forwarding and receiving communications signals via a system of satellites or reselling satellite telecommunications.	See exceptions listed under NAICS 3341, 5112, 5415, 5182, 334413, 3346, 3342
Cable and other program distribution	5175	This industry comprises establishments primarily engaged as third-party distribution systems for broadcast programming. The establishments of this industry deliver visual, aural, or textual programming received from cable networks, local television stations, or radio networks to consumers via cable or direct-to-home satellite systems on a subscription or fee basis. These establishments do not generally originate programming material.	112 (ephemeral recordings); 114(a) (exception to sound recording performance right); see also exceptions listed under NAICS 3341, 3343, 5112, 515120, 5152, 3342
Other Telecommunications	5179	This industry comprises establishments primarily engaged in (1) providing specialized telecommunications applications, such as satellite tracking, communications telemetry, and radar station operations; or (2) providing satellite terminal stations and associated facilities operationally connected with one or more terrestrial communications systems and capable of transmitting telecommunications to or receiving telecommunications from satellite systems.	See exceptions listed under NAICS 3341, 5112, 5415, 5182, 3342

**Table 1 (continued): Fair Use Industry Definitions**

Industry	NAICS Codes	Detailed NAICS Description	Reliance on Fair Use
Radio & television broadcasting	5151	This industry comprises establishments primarily engaged in broadcasting images together with sound. These establishments operate television broadcasting studios and facilities for the programming and transmission of programs to the public. These establishments also produce or transmit visual programming to affiliated broadcast television stations, which in turn broadcast the programs to the public on a predetermined schedule. Programming may originate in their own studio, from an affiliated network, or from external sources.	102(a) (non-copyrightability of facts); 102(b) (idea/expression dichotomy); 107 (fair use: criticism, comment, news reporting, parody); 112 (ephemeral recordings); 114(a) (exception to sound recording performance right); see also exceptions listed under NAICS 3343, 3342
Cable networks	5152	This industry group comprises establishments primarily engaged in operating broadcast studios and facilities for over-the-air or satellite delivery of radio and television programs. These establishments are often engaged in the production or purchase of programs or generate revenues from the sale of air time to advertisers, from donations and subsidies, or from the sale of programs.	102(a) (non-copyrightability of facts); 102(b) (idea/expression dichotomy); 107 (fair use: criticism, comment, news reporting, parody); 114(a) (exception to sound recording performance right); see also exceptions listed under NAICS 3343, 3342

**Table 1 (continued): Fair Use Industry Definitions**

Industry	NAICS Codes	Detailed NAICS Description	Reliance on Fair Use
Radio & television broadcasting	5151	This industry comprises establishments primarily engaged in broadcasting images together with sound. These establishments operate television broadcasting studios and facilities for the programming and transmission of programs to the public. These establishments also produce or transmit visual programming to affiliated broadcast television stations, which in turn broadcast the programs to the public on a predetermined schedule. Programming may originate in their own studio, from an affiliated network, or from external sources.	102(a) (non-copyrightability of facts); 102(b) (idea/expression dichotomy); 107 (fair use: criticism, comment, news reporting, parody); 112 (ephemeral recordings); 114(a) (exception to sound recording performance right); see also exceptions listed under NAICS 3343, 3342
Cable networks	5152	This industry group comprises establishments primarily engaged in operating broadcast studios and facilities for over-the-air or satellite delivery of radio and television programs. These establishments are often engaged in the production or purchase of programs or generate revenues from the sale of air time to advertisers, from donations and subsidies, or from the sale of programs.	102(a) (non-copyrightability of facts); 102(b) (idea/expression dichotomy); 107 (fair use: criticism, comment, news reporting, parody); 114(a) (exception to sound recording performance right); see also exceptions listed under NAICS 3343, 3342

**Table 1 (continued): Fair Use Industry Definitions**

Industry	NAICS Codes	Detailed NAICS Description	Reliance on Fair Use
Printing and related support activities	3230	Industries in the Printing and Related Support Activities subsector print products, such as newspapers, books, labels, business cards, stationery, business forms, and other materials, and perform support activities, such as data imaging, platemaking services, and bookbinding. The support activities included here are an integral part of the printing industry, and a product (a printing plate, a bound book, or a computer disk or file) that is an integral part of the printing industry is almost always provided by these operations. Processes used in printing include a variety of methods used to transfer an image from a plate, screen, film, or computer file to some medium, such as paper, plastics, metal, textile articles, or wood. The most prominent of these methods is to transfer the image from a plate or screen to the medium (lithographic, gravure, screen, and flexographic printing). A rapidly growing new technology uses a computer file to directly "drive" the printing mechanism to create the image and new electrostatic and other types of equipment (digital or nonimpact printing).... This U.S. industry comprises establishments primarily engaged in manufacturing photographic and photocopying equipment, such as cameras (except television, video and digital) projectors, film developing equipment, photocopying equipment, and microfilm equipment.	See exceptions listed under NAICS 51111, 51114, 51119
Photographic & photocopying equipment mfg	333315		107 (fair use copying); Sony principle

**Table 1 (continued): Fair Use Industry Definitions**

Industry	NAICS Codes	Detailed NAICS Description	Reliance on Fair Use
Semiconductors and related device manufacturing	334413	This U.S. industry comprises establishments primarily engaged in manufacturing semiconductors and related solid state devices. Examples of products made by these establishments are integrated circuits, memory chips, microprocessors, diodes, transistors, solar cells and other optoelectronic devices.	107 (fair use: reverse engineering); Sony principle; see NAICS 3341
Communications equipment manufacturing	3342	This industry group comprises establishments primarily engaged in one or more of the following manufacturing activities: telephone equipment; radio and television broadcasting and wireless communications equipment; and other communications equipment.	102(b) (non-copyrightability of interface specifications); 107 (fair use: browser copies, reverse engineering); Sony principle; see NAICS 3341, 3346, 5112, 5415, 5171, 5172, 5174, 5175, 5179, 5152, 515120
Manufacturing and reproducing magnetic and optical media	3346	This industry comprises establishments primarily engaged in (1) manufacturing optical and magnetic media, such as blank audio tape, blank video tape, and blank diskettes and/or (2) mass duplicating (i.e., making copies) audio, video, software, and other data on magnetic, optical, and similar media.	107 (fair use: time and space shifting; browser, cache copies); Sony principle; see also exceptions listed under NAICS 3341, 3343; 3342

**Table 1 (continued): Fair Use Industry Definitions**

Industry	NAICS Codes	Detailed NAICS Description	Reliance on Fair Use
Communication and energy wire and cable manufacturing	335920	This industry comprises establishments insulating fiber-optic cable, and manufacturing insulated nonferrous wire and cable from nonferrous wire drawn in other establishments.	See exceptions listed under NAICS 3342
Computer & peripheral equip merchant wholesalers	4234301	This industry comprises establishments primarily engaged in the merchant wholesale distribution of new and used computer hardware and computer peripheral equipment.	See exceptions listed under NAICS 3341
Computer software (packaged) merchant wholesalers	4234302	This industry comprises establishments primarily engaged in the merchant wholesale distribution of packaged computer software primarily for end use.	See exceptions listed under NAICS 5112
Electric appliance, TV & radio merchant wholesalers	42362	This industry comprises establishments primarily engaged in the merchant wholesale distribution of household-type electrical appliances, room air-conditioners, gas and electric clothes dryers, and/or household-type audio or video equipment.	See exceptions listed under NAICS 3343

**Table 1 (continued): Fair Use Industry Definitions**

Industry	NAICS Codes	Detailed NAICS Description	Reliance on Fair Use
Communications equipment & supp merchant wholesalers	4236901	This industry comprises establishments primarily engaged in the merchant wholesale distribution of household-type electrical appliances, room air-conditioners, gas and electric clothes dryers, and/or household-type audio or video equipment. This industry (425120) comprises wholesale trade agents and brokers acting on behalf of buyers or sellers in the wholesale distribution of goods. Agents and brokers do not take title to the goods being sold but rather receive a commission or fee for their service. Agents and brokers for all durable and nondurable goods are included in this industry. Electrical & electronic goods agents & brokers are a subset of this industry and are classified under NAICS 42512036	See exceptions listed under NAICS 3342
Electrical & electronic goods agents & brokers	42512036	This U.S. industry comprises: (1) establishments known as consumer electronics stores primarily engaged in retailing a general line of new consumer-type electronic products; (2) establishments specializing in retailing a single line of consumer-type electronic products (except computers); or (3) establishments primarily engaged in retailing these new electronic products in combination with repair services.	See exceptions listed under NAICS 3341, 5112, 3343
Radio, television & other electronics stores	443112	This U.S. industry comprises: (1) establishments known as consumer electronics stores primarily engaged in retailing a general line of new consumer-type electronic products; (2) establishments specializing in retailing a single line of consumer-type electronic products (except computers); or (3) establishments primarily engaged in retailing these new electronic products in combination with repair services.	See exceptions listed under NAICS 3343

**Table 1 (continued): Fair Use Industry Definitions**

Industry	NAICS Codes	Detailed NAICS Description	Reliance on Fair Use
Computer & software stores	44312	This U.S. industry comprises: (1) establishments known as consumer electronics stores primarily engaged in retailing a general line of new consumer-type electronic products; (2) establishments specializing in retailing a single line of consumer-type electronic products (except computers); or (3) establishments primarily engaged in retailing these new electronic products in combination with repair services.	See exceptions listed under NAICS 3341, 5112, 334413
Newspaper publishers	51111	This industry comprises establishments known as newspaper publishers. Establishments in this industry carry out operations necessary for producing and distributing newspapers, including gathering news; writing news columns, feature stories, and editorials; and selling and preparing advertisements. These establishments may publish newspapers in print or electronic form.	102(a) (non-copyrightability of facts); 102(b) (idea/expression dichotomy); 107 (fair use: criticism, comment, news reporting); 105 (no copyright in U.S. government works)
Directory, mailing list, and other publishers	51114	This industry comprises establishments known as newspaper publishers. Establishments in this industry carry out operations necessary for producing and distributing newspapers, including gathering news; writing news columns, feature stories, and editorials; and selling and preparing advertisements. These establishments may publish newspapers in print or electronic form.	102(a) (non-copyrightability of facts); 105 (no copyright in U.S. government works)



**Table 1 (continued): Fair Use Industry Definitions**

Industry	NAICS Codes	Detailed NAICS Description	Reliance on Fair Use
Other publishers	51119	This industry comprises establishments known as publishers (except newspaper, magazine, book, directory, mailing list, and music publishers). These establishments may publish works in print or electronic form.	102(a) (non-copyrightability of facts); 102(b) (idea/expression dichotomy); 107 (fair use: scholarship, research, teaching); 302-304 (copyright term); 105 (no copyright in U.S. government works).
Securities, commodity contracts, and investments	5231	This industry group comprises establishments primarily engaged in putting capital at risk in the process of underwriting securities issues or in making markets for securities and commodities; and those acting as agents and/or brokers between buyers and sellers of securities and commodities, usually charging a commission.	102(a) (non-copyrightability of facts); 107 (fair use: research); see also exceptions listed under NAICS 3341, 5182, 5415, 5171
Motion Picture and Video Industries	5121	This industry group comprises establishments primarily engaged in the production and/or distribution of motion pictures, videos, television programs, or commercials; in the exhibition of motion pictures; or in the provision of postproduction and related services.	102(a) (non-copyrightability of facts); 102(b) (idea/expression dichotomy); 107 (fair use: criticism, comment, parody, research); 302-304 (copyright term); 105 (no copyright in U.S. government works) see also exceptions listed under NAICS 3342
Sound Recording Industries	5122	This industry group comprises establishments primarily engaged in producing and distributing musical recordings, in publishing music, or in providing sound recording and related services.	102(a) (non-copyrightability of facts); 102(b) (idea/expression dichotomy); 107 (fair use: criticism, comment, parody, research); 302-304 (copyright term) see also exceptions listed under 3343

**Table 1 (continued): Fair Use Industry Definitions**

Industry	NAICS Codes	Detailed NAICS Description	Reliance on Fair Use
Book, Periodical, and Music Stores	4512	This industry group comprises establishments primarily engaged in retailing new books, newspapers, magazines, and prerecorded audio and video media.	109(a) (first sale); see also exceptions listed under NAICS 5111, 5121, 5122
Architectural, Engineering, and Related Services	5413	This industry comprises establishments primarily engaged in planning and designing residential, institutional, leisure, commercial, and industrial buildings and structures by applying knowledge of design, construction procedures, zoning regulations, building codes, and building materials.	102(a) (non-copyrightability of facts); 102(b) (idea/expression dichotomy); 107 (fair use: criticism, comment, parody, research); 302-304 (copyright term); 105 (no copyright in U.S. government works)
Graphic Design Services	54143	This industry comprises establishments primarily engaged in planning, designing, and managing the production of visual communication in order to convey specific messages or concepts, clarify complex information, or project visual identities. These services can include the design of printed materials, packaging, advertising, signage systems, and corporate identification (logos). This industry also includes commercial artists engaged exclusively in generating drawings and illustrations requiring technical accuracy or interpretative skills.	102(b) (non-copyrightability of interface specifications); 107 (fair use: comment, parody, research, search; browser, cache copies); 302-304 (copyright term); 105 (no copyright in U.S. government works); 117(a) (backup, essential step copies)
Performing Arts Companies	7111	This industry group comprises establishments primarily engaged in producing live presentations involving the performances of actors and actresses, singers, dancers, musical groups and artists, and other performing artists.	102(b) (idea/expression dichotomy); 107 (fair use: criticism, comment, parody, research); 302-304 (copyright term);

**Table 1 (continued): Fair Use Industry Definitions**

Industry	NAICS Codes	Detailed NAICS Description	Reliance on Fair Use
Promoters of Performing Arts, Sports, and Similar Events	7113	This industry comprises establishments primarily engaged in (1) organizing, promoting, and/or managing live performing arts productions, sports events, and similar events, such as state fairs, county fairs, agricultural fairs, concerts, and festivals, held in facilities that they manage and operate and/or (2) managing and providing the staff to operate arenas, stadiums, theaters, or other related facilities for rent to other promoters. It also comprises promoters primarily engaged in organizing, promoting, and/or managing live performing arts productions, sports events, and similar events, such as state fairs, county fairs, agricultural fairs, concerts, and festivals, in facilities that are managed and operated by others. Theatrical (except motion picture) booking agencies are included in this industry.	See exceptions listed under NAICS 5121, 7111, 7115
Agents and Managers for Artists, Athletes, Entertainers, and Other Public Figures	7114	This industry comprises establishments of agents and managers primarily engaged in representing and/or managing creative and performing artists, sports figures, entertainers, and other public figures. The representation and management includes activities, such as representing clients in contract negotiations; managing or organizing client's financial affairs; and generally promoting the careers of their clients.	See exceptions listed under NAICS 5121, 7111, 7115

**Table 1 (continued): Fair Use Industry Definitions**

Industry	NAICS Codes	Detailed NAICS Description	Reliance on Fair Use
Independent Artists, Writers, and Performers	7115	This industry comprises independent (i.e., freelance) individuals primarily engaged in performing in artistic productions, in creating artistic and cultural works or productions, or in providing technical expertise necessary for these productions. This industry also includes athletes and other celebrities exclusively engaged in endorsing products and making speeches or public appearances for which they receive a fee. This industry comprises establishments primarily engaged in furnishing physical or electronic marketplaces for the purpose of facilitating the buying and selling of stocks, stock options, bonds, or commodity contracts.	102(b) (idea/expression dichotomy); 107 (fair use: criticism, comment, parody, research); 302-304 (copyright term);
Securities and Commodity Exchanges	5232	This industry group comprises establishments primarily engaged in one of the following: (1) acting as principals in buying or selling financial contracts (except investment bankers, securities dealers, and commodity contracts dealers); (2) acting as agents (i.e., brokers) (except securities brokerages and commodity contracts brokerages) in buying or selling financial contracts; or (3) providing other investment services (except securities and commodity exchanges), such as portfolio management; investment advice; and trust, fiduciary, and custody services.	See exceptions listed under NAICS 5231, 5182, 5415, 5171, 5411
Other Financial Investment Activities	5239	This industry group comprises establishments primarily engaged in one of the following: (1) acting as principals in buying or selling financial contracts (except investment bankers, securities dealers, and commodity contracts dealers); (2) acting as agents (i.e., brokers) (except securities brokerages and commodity contracts brokerages) in buying or selling financial contracts; or (3) providing other investment services (except securities and commodity exchanges), such as portfolio management; investment advice; and trust, fiduciary, and custody services.	102(a) (non-copyrightability of facts); 107 (fair use: research); see also exceptions listed under NAICS 3341, 5171, 5182, 5415

**Table 1 (continued): Fair Use Industry Definitions**

Industry	NAICS Codes	Detailed NAICS Description	Reliance on Fair Use
Insurance Carriers	5241	This industry group comprises establishments primarily engaged in underwriting (assuming the risk, assigning premiums, and so forth) annuities and insurance policies and investing premiums to build up a portfolio of financial assets to be used against future claims. Direct insurance carriers are establishments that are primarily engaged in initially underwriting and assuming the risk of annuities and insurance policies. Reinsurance carriers are establishments that are primarily engaged in assuming all or part of the risk associated with an existing insurance policy (or set of policies) originally underwritten by another insurance carrier. Industries are defined in terms of the type of risk being insured against, such as death, loss of employment because of age or disability, and/or property damage. Contributions and premiums are set on the basis of actuarial calculations of probable payouts based on risk factors from experience tables and expected investment returns on reserves.	102(a) (non-copyrightability of facts); 107 (fair use: research); see also exceptions listed under NAICS 3341, 5171, 5182, 5415
Agencies, Brokerages, and Other Insurance Related Activities	5242	This industry group comprises establishments primarily engaged in (1) acting as agents (i.e., brokers) in selling annuities and insurance policies or (2) providing other employee benefits and insurance related services, such as claims adjustment and third party administration.	See exceptions listed under NAICS 5231, 5239, 5241, 5415

**Table 1 (continued): Fair Use Industry Definitions**

Industry	NAICS Codes	Detailed NAICS Description	Reliance on Fair Use
Insurance and Employee Benefit Funds	5251	This industry group comprises legal entities (i.e., funds, plans, and/or programs) organized to provide insurance and employee benefits exclusively for the sponsor, firm, or its employees or members.	See exceptions listed under NAICS 5231, 5239, 5241
Other Investment Pools and Funds	5259	This industry group comprises legal entities (i.e., investment pools and/or funds) organized to pool securities or other assets (except insurance and employee-benefit funds) on behalf of shareholders, unitholders, or beneficiaries.	102(a) (non-copyrightability of facts); 107 (fair use: research); see also exceptions listed under NAICS 3341, 5171, 5181, 5415
Legal services	5411	This industry comprises offices of legal practitioners known as lawyers or attorneys (i.e., counselors-at-law) primarily engaged in the practice of law. Establishments in this industry may provide expertise in a range or in specific areas of law, such as criminal law, corporate law, family and estate law, patent law, real estate law, or tax law.	102(b) (idea/expression dichotomy); 105 (no copyright in U.S. government works); 107 (fair use: research); see also exceptions listed under NAICS 3341, 5181, 5415, 5171, 5172, 5174

**Table 1 (continued): Fair Use Industry Definitions**

Industry	NAICS Codes	Detailed NAICS Description	Reliance on Fair Use
Management, scientific, & technical consulting services	5416	The industry NAICS 54161 comprises establishments primarily engaged in providing advice and assistance to businesses and other organizations on management issues, such as strategic and organizational planning; financial planning and budgeting; marketing objectives and policies; human resource policies, practices, and planning; production scheduling; and control planning. Establishments providing sanitation or site remediation consulting services are included in this industry.	102(a) (non-copyrightability of facts); 102(b) (idea/expression dichotomy); 107 (fair use: scholarship, research, comment, criticism); see also exceptions listed under NAICS 3341, 5181, 5112, 5415, 5171, 5172, 519, 333315, 334413
See above.	See above.	The industry NAICS 54162 comprises establishments primarily engaged in providing advice and assistance to businesses and other organizations on environmental issues, such as the control of environmental contamination from pollutants, toxic substances, and hazardous materials. These establishments identify problems (e.g., inspect buildings for hazardous materials), measure and evaluate risks, and recommend solutions. They employ a multidisciplinary staff of scientists, engineers, and other technicians with expertise in areas, such as air and water quality, asbestos contamination, remediation, and environmental law.	See above.
See above.	See above.	The industry NAICS 54169 comprises establishments primarily engaged in providing advice and assistance to businesses and other organizations on scientific and technical issues (except environmental).	See above.

**Table 1 (continued): Fair Use Industry Definitions**

Industry	NAICS Codes	Detailed NAICS Description	Reliance on Fair Use
Scientific research & development services	5417	This industry group comprises establishments engaged in conducting original investigation undertaken on a systematic basis to gain new knowledge (research) and/or the application of research findings or other scientific knowledge for the creation of new or significantly improved products or processes (experimental development). The industries within this industry group are defined on the basis of the domain of research; that is, on the scientific expertise of the establishment.	102(a) (non-copyrightability of facts); 102(b) (idea/expression dichotomy); 107 (fair use: scholarship, research, comment, criticism); see NAICS 3341, 5181, 5112, 5415, 5171, 5172, 519, 333315, 334413
Education services	611A and 611B	Industries in the Educational Services subsector provide instruction and training in a wide variety of subjects. The instruction and training is provided by specialized establishments, such as schools, colleges, universities, and training centers.	102(a) (non-copyrightability of facts); 102(b) (idea/expression dichotomy); 107 (fair use: criticism, comment, teaching, scholarship, research); 110(1), 110(2) (displays and performances in educational contexts); see also exceptions listed under NAICS 3341, 5181, 5112, 5415, 5171, 5172, 519, 333315, 334413
See above.	See above.	The subsector is structured according to level and type of educational services. Elementary and secondary schools, junior colleges and colleges, universities, and professional schools correspond to a recognized series of formal levels of education designated by diplomas, associate degrees (including equivalent certificates), and degrees. The remaining industry groups are based more on the type of instruction or training offered and	See above.

## IV. METHODOLOGY AND DATA SOURCES

### a. Methodology

Using primarily U.S. government data, the study quantifies the economic contribution of core and non-core industries based on five economic measures: revenue, value added, employment, payroll, and exports.<sup>25</sup> For each item, we compiled data for 2002 and 2006. These two data points provide recent snapshots of economic activity and also serve to highlight the growth trend. As discussed below in each subpart, due to the newness of the Internet economy and lags in the publication of 2006 information, detailed data were, in some cases, limited. Where data were lacking, the discussion contained in Appendix I describes the methodology and alternative data sources relied on to fill in the gaps and/or report data on a common basis.

### i. Revenue

The revenue data for the core and non-core industries was based on statistics issued by the Department of Commerce. The underlying revenue data for each industry appear in Table 1 of Appendix II. Although the Department's Bureau of Economic Analysis (BEA) publishes data on gross output, defined as the market value of an industry's production, the BEA data currently are presented according to the 1997 NAICS, which does not break out gross output separately for Internet industry sectors, such as Internet publishing and broadcasting, Internet service providers, and web search portals. More detailed Internet industry-specific data are not available until the 2002 revision of the NAICS codes. Thus, the 2002 Economic Census, which presents revenue data using both the 1997 and 2002 NAICS codes, is the best source of market value of output for the Internet-based, core industries.<sup>26, 27</sup>

**25** This approach is consistent with the WIPO Guide which suggests measuring the size of the industries as a percentage of GDP, employment, and foreign trade. WIPO Guide at 36.

**26** The Economic Census presents data on sales, shipments, receipts, revenue, or business done. The specific measure used is industry-dependent. For example, for manufacturing establishments, the Economic Census presents data on the net selling values, f.o.b. mine or plant after discounts and allowances (exclusive of freight and excise taxes), of all products shipped. For information industries, the Economic Census presents data on gross receipts from customers or clients for services provided, from the use of facilities, and from merchandise sold. In this report, we refer to sales data from the Economic Census as "revenue." See Economic Census descriptions at <http://www.census.gov/econ/census02/text/sector00/00rcptot.htm>.

**27** For some industries, such as insurance and legal services, gross output data are used because revenue data differs markedly from gross output data.

For core and non-core industries, we estimated 2006 revenue using official data releases, estimates from industry publications and the trade press, or by applying prior years' growth rates in gross output to 2005 data.

After compiling the 2006 revenue data by industry, we summed the data to obtain the estimated revenue associated with core and non-core industries that benefit from fair use.

### ii. Value Added

While revenue data are an important measurement of company growth, value added data are a better indicator of the contribution of an industry to overall economic growth. The reason is simple. Revenues include the values of intermediate inputs purchased from other industries and from within the same industry. As a result, neither revenue nor gross output can be compared to Gross Domestic Product (GDP), which is based on total value added and is the most commonly used measure of national economic output.

In contrast, value added excludes intermediate purchases, and thereby captures the value that is added by the labor and capital resources within each industry. Industry value added is analogous to GDP, and can be used to assess the contribution of an industry or industries to U.S. economic growth.

Because value added data are reported at a higher level of aggregation than most of the industries covered in this study, we estimated the 2002 and 2006 value added for fair use industries using the following three step process. First, gross output data was aggregated to the same level of detail as value added data. Second, we computed the ratio of value added to gross output for 2002 and 2005 for the industries offering the best match for each core or non-core industry. Third, we applied the 2002 and 2005 ratios to industry revenue or gross output data for 2002 and 2006 respectively. The resulting estimates for value added were summed to calculate the total value added for core and non-core industries.

### iii. Payroll

Payroll data are available for 2002 on a detailed basis according to the 2002 NAICS. As 2006 data by industry were unavailable at the time this report was prepared, we estimated the 2006 payroll figures by applying the 2002 ratio of payroll to value added to the 2006 estimate for value added.<sup>28</sup> For each year, the payroll estimates are summed together for core and non-core industries.

**28** An alternative approach would be to apply the BEA's 2005 data on value added to its payroll data. We used the 2002 data as a base because, due to the NAICS codes, it offers more detailed coverage of the core Internet industries.

#### iv. Employment

The government publishes annual estimates for employment levels by industry group and industry. The data are summed for 2002 and 2006 to derive values for core and non-core employment.

#### v. Trade

The government publishes detailed merchandise trade data on the basis of the Harmonized Tariff System. The government also converts these data to a NAICS basis. Data on services trade are reported at a relatively high level of aggregation. As a result, the export data shown in the tables do not distinguish between core and non-core exports. As an alternative, the export data are reported separately between exports of fair use goods and exports of fair use services.

#### b. Data sources

The main data sources used in this study are the 2002 Economic Census, which is carried out by the Census Bureau of the Department of Commerce; the Bureau of Economic Analysis (BEA) reports on industry gross output and value added; and the Bureau of Labor Statistics of the Department of Labor, which publishes industry employment data on a monthly basis. All the publications and data are available on the web sites maintained by these agencies.<sup>29</sup> Other agency databases and reports, described below, were used to complete the data series. The data summarized and presented in this report are provided in Appendix II.

The data tables provided in the 2002 Economic Census contain detailed information on industry revenue, number of establishments, number of employees, and industry payroll.<sup>30</sup> The Economic Census is the source for the 2002 revenue and payroll figures in this report. The Census releases the data on a rolling basis, with the later publications containing the most revised data. The final publications of the 2002 Economic Census were released in July 2006. The document *Bridge Between 2002 NAICS and 1997 NAICS: 2002* served as the source for new industries with new NAICS codes. The document *Comparative Statistics: 2002* was the source for industries whose NAICS categories

<sup>29</sup> The BEA publishes more highly aggregated industry data in its monthly journal, *Survey of Current Business*. The detailed data on the BEA's web site (<http://www.bea.gov>) include data that are excluded from published industry estimates because the quality of the unpublished estimates is significantly less than that of the higher level aggregates in which they are included. According to BEA, the more detailed industry estimates are more likely to be based on judgment trends, on trends in higher level aggregates, or on less reliable source data.

<sup>30</sup> Data are presented separately for employers and non-employers.

that did not change with the 2002 revision. In cases where neither the bridge document nor the comparison document contains estimates for industry revenue at the desired level of detail, the data maintained on the Census website are used.

For 2006, industry revenue is derived from a number of sources, including the Quarterly Services Survey; Monthly Wholesale Trade: Sales and Inventories; historical data from the Advance Monthly Sales for Retail and Food Services, Manufacturers' Shipments, Inventories, and Orders; and the Current Industrial Reports series, all published by Census. For industries where official 2006 revenue data were unavailable, estimates were derived from trends in the BEA's gross output data, or by applying trends in output and producer prices from databases maintained by the Federal Reserve and the BLS, respectively. In a few instances, industry estimates were based on industry-published or trade press data.<sup>31</sup>

The value added ratios are sourced from the BEA website, which contains a number of tables detailing gross output, value added, and the components of value added for 1998 to 2005. The BEA data on value added are presented at a higher level of aggregation than the gross output data, but the BEA's data files contain concordances between the two sets of data that facilitate the calculation of the appropriate ratios.

Data on employment levels in 2002 and 2006 are reported on the BLS website, which presents data on a highly detailed basis for both years using 2002 NAICS-based categories.

Data on fair use exports are sourced from the United States International Trade Commission (USITC), which maintains an online database of merchandise trade, and from the BEA, which maintains trade in services data.

<sup>31</sup> Certain revenue estimates were drawn from the Semiconductor Industry Association, Rentrak's Home Video Essentials, and Supplier Relations US.

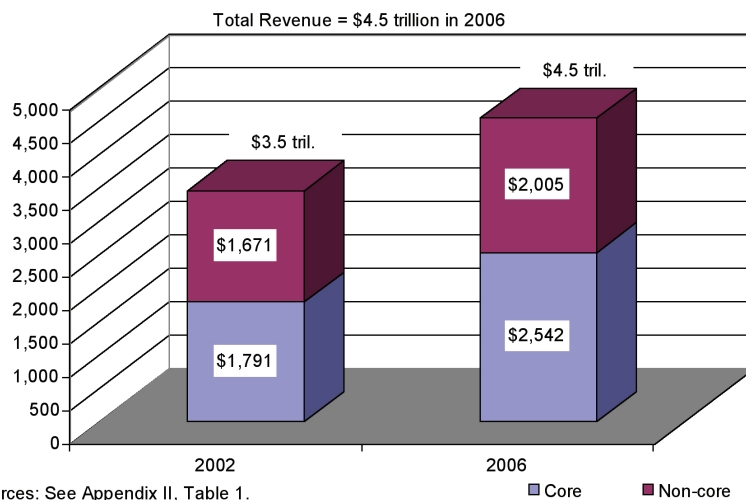
## VI. ECONOMIC CONTRIBUTION OF FAIR USE INDUSTRIES

Using the data sources and methodologies described above, this Part presents estimates of the revenues, value added, payroll, employment levels, productivity, and trade of the industries benefiting from fair use and the Internet. Estimates are presented for both core and non-core industries.

### a. Revenue

Chart 1 illustrates the estimated revenues for the fair use related core and non-core industries for 2002 and 2006. The data indicate that core and non-core industry revenues totaled \$3.5 trillion dollars in 2002. The core group of fair use industries accounted for \$1.8 trillion dollars in revenue, approximately 52 percent of the total. The non-core industries accounted for \$1.7 trillion, 48 percent of the total.

**Chart 1. Revenues of Fair Use Industries**



By 2006, the revenue generated by fair use industries had increased by 31 percent over the 2002 level to \$4.5 trillion. Over the four year period, the core industries had become a much larger component of the fair use economy. Core industry revenue in 2006 was \$2.5 trillion, 56 percent of the fair use total. Non-core industry revenue in 2006 amounted to \$2 trillion, 44 percent of the total. From 2002 to 2006, core fair use revenues expanded by 42 percent, while non-core revenues expanded by 20 percent.

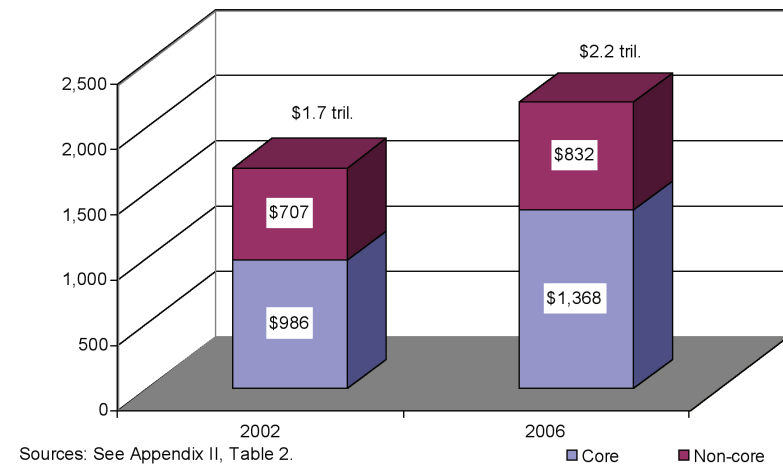
The strong revenue growth by the core industries has been driven by growth in several industries. In percentage terms, the most significant growth occurred in electronic shopping; audio and video equipment manufacturing; and the industry comprised of Internet publishing and broadcasting, Internet service providers and web search portals, and other information services.

### b. Value Added

Value added measures the contribution of each industry's labor and capital to its gross output and to GDP. Industry value added equals an industry's gross output minus its purchased intermediate inputs. As such, an industry's value added does not include value added by another industry or double count own-industry value added.

Value added in 2002 for the fair use industries defined in this report are shown in Chart 2. Total value added was an estimated \$1.7 trillion in 2002, with the core industries accounting for nearly \$1 trillion, and non-core industries accounting for \$707 billion. Although the industry value added is significantly less than core and non-core revenue, the value added data show that these industries represented nearly one-sixth of (16.2 percent) of current dollar U.S. GDP in 2002.<sup>32</sup> The core share of GDP was 9.4 percent, while the non-core share of GDP was 6.8 percent. By 2006, fair use-related industry value added increased 30 percent to an estimated \$2.2 trillion. The value added for the core group of fair use industries expanded to \$1.4 trillion, an increase of 39 percent during the four-year period. The value added of the non-core industries was \$832 billion, an 18 percent increase over non-core value added in 2002.

**Chart 2. Value Added of Fair Use Industries**



<sup>32</sup> U.S. GDP in current dollars was \$10.5 trillion in 2002 and \$13.2 trillion in 2006. For a time series of U.S. current dollar and real GDP, see <http://www.bea.gov/national/xls/gdplev.xls>.

In total, fair use industries accounted for 16.6 percent of the U.S. current dollar GDP in 2006. The core industries' share of GDP expanded from 9.4 percent in 2002 to 10.3 percent in 2006. The non-core industries' share of GDP declined from 6.8 percent in 2002 to 6.3 percent in 2006. In all, the core and non-core fair use industries contributed \$507 billion to U.S. GDP growth during the 2002 to 2006 period, accounting for 18 percent of U.S. current dollar economic growth.

In contrast to nominal GDP, real GDP controls for inflation, and is therefore a better indicator of a country's true economic growth. In many of the fair use industries, prices declined during the 2002-to-2006 period, meaning that the real growth of value added was even larger than implied by the current dollar growth of value added. When inflation is taken into account, the growth contribution of the core industries to U.S. output growth during 2002 to 2006 was 24.8 percent.<sup>33</sup>

The growth trends for the fair use economy likely understate its impact. For example, the e-commerce wholesale revenues detailed under specific NAICS codes in the Economic Census only cover electronic trade by establishments engaged in wholesaling. Thus, the commercial activities of manufacturers and merchant wholesalers engaging in e-commerce are excluded from the above revenues and value added estimates.<sup>34</sup>

<sup>33</sup> The estimation procedure for the core contribution to real GDP growth is shown in Appendix II, Table 6.

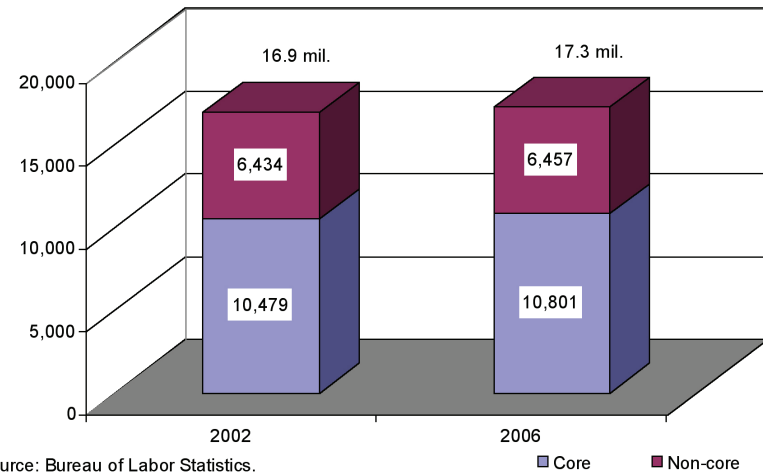
<sup>34</sup> Based on Census Bureau surveys, it is believed that approximately 15 percent of business-to-business e-commerce occurs over the Internet. Using this assumption and other data in the e-commerce surveys, an estimated \$150 billion in revenues and \$20 billion in value added can be attributed to the Internet and the fair use economy in 2006. See, for example, U.S. Census Bureau, *E-Stats* (May 25, 2006), which estimates electronic commerce for wholesale trade and manufacturers.

### c. Employment and Payroll

The fair use-related industries measured in this report are major employers in the U.S. economy. Chart 3 below shows the number of employees for 2002 and 2006. The exhibits indicate that employment related to fair use was 16.9 million in 2002 and increased to 17.3 million in 2006.

Employment in the core industries increased from 10.5 million employees in 2002 to 10.8 million employees in 2006. Employment in the non-core industries was virtually unchanged at 6.4 million employees in 2002 and 2006. In 2002, employment in fair use industries accounted for somewhat less than 13 percent of total non-farm employment in the United States.<sup>35</sup> That is, about one out of every eight workers in the United States is employed in an industry that benefits from the protection afforded by fair use.

**Chart 3. Employment in Fair Use Industries**

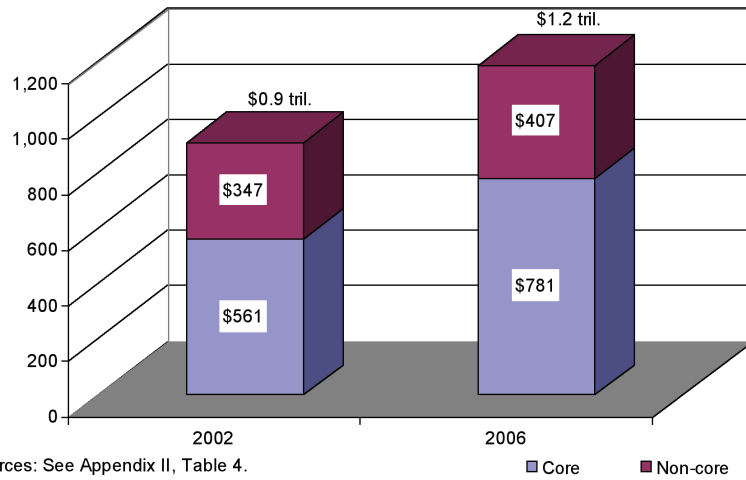


While employment levels have been relatively stable, the payrolls of fair use industries have been expanding. Chart 4 indicates that payroll of all fair use industries increased from \$909 billion in 2002 to \$1.2 trillion in 2006, an increase of 31 percent. In 2002, core industry payroll was \$561 billion, accounting for 62 percent of total fair use payrolls. In 2006, core industry payroll was \$781 billion, accounting for 66 percent of total fair use payroll. From 2002 to 2006, the payroll of core industries grew by 39 percent, while the payroll of non-core industries grew by 17 percent.

<sup>35</sup> Data on employment by industry are available at <http://www.bls.gov/ces/home.htm#data>. See series CEU0000000001.



**Chart 4. Payroll of Fair Use Industries**



Sources: See Appendix II, Table 4.

The combination of stable employment levels and increasing payrolls has produced a sizeable increase in payroll per employee at fair use related firms. Table 2 below indicates that payroll per employee expanded from approximately \$54,000 per year in 2002 to \$69,000 in 2006. For the core industries, payroll per employee expanded from approximately \$54,000 to \$72,000.<sup>36</sup>

**Table 2. Payroll Per Employee of Fair Use-Related Industries**

	2002	2006
	<i>Dollars per Employee</i>	
Core	53,558	72,312
Non-core	54,400	63,471
Total	53,877	69,020

Sources: Authors' estimates based on data from the 2002 Economic Census; Bureau of Economic Analysis (value added and gross output); Bureau of Labor Statistics (employees by industry); and various Department of Commerce economic data releases.

d. Productivity

On the supply side, a country's economic growth depends overwhelmingly on two factors: changes in the level of productive inputs such as labor and capital and the productivity with which those inputs are used. In other words, an economy experiences economic growth if it adds inputs (e.g., more workers and more machines), increases the output associated with a given level of inputs, or does both.

In order to improve the earnings for each productive unit, by increasing real hourly wages, for example, it is necessary to increase productivity.<sup>37</sup> Rising productivity is therefore the key to long-term improvements in living standards.

A large body of work attributes the higher productivity growth during and after the late 1990s to IT-producing sectors serving the new economy, and recent work indicates that IT-using industries, not just IT-producing industries, are increasing productivity as well.<sup>38</sup>

One measure of productivity is value added per employee, which is an indicator of labor productivity. Table 3 contains estimates of labor productivity for the core and non-core fair use industries.

**Table 3. Value Added Per Employee of Fair Use-Related Industries**

	2002	2006
	<i>Dollars per Employee</i>	
Core	94,097	126,628
Non-core	110,630	129,862
Total	100,078	127,476

Economic Census; Bureau of Economic Analysis (value added and gross output); Bureau of Labor Statistics (employees by industry); and various Department of Commerce economic data releases.

<sup>37</sup> For example, if growth is achieved solely by adding workers without increasing productivity, then wages will not rise in the long term.

<sup>38</sup> See, for example, Erik Brynjolfsson and Lorin M. Hitt, "Computing Productivity: Firm-Level Evidence" (June 2003); MIT Sloan Working Paper No. 4210-01. Dale W. Jorgenson and Kevin J. Stiroh, Raising the Speed Limit: U.S. Economic Growth in the Information Age (May 1, 2000); Tarek M. Harchaoui, Faouzi Tarkhani & Bilkis Khanam, "Information Technology and Economic Growth in the Canadian and U.S. Private Economies," in Jorgenson, ed., Economic Growth in Canada and the United States in the Information Age (2004); *Economic Report of the President: 2002* (GPO: February 2002) at 58-60; and J. Steven Landenflod and Barbara M. Fraumeni, "Measuring the New Economy," *Survey of Current Business* (March 2001) at 23-39.

<sup>36</sup> Because there was no corresponding payroll data for NAICS 5251 (insurance and employee benefit funds), employees from this industry were excluded from the calculations.

The data indicate that there has been strong productivity growth in both the core and non-core industries. Productivity in the fair use economy far exceeds economy-wide productivity, which was approximately \$90,000 per employee in 2006.<sup>39</sup>

The fair use-related industries not only achieve higher than average productivity levels, but they have experienced strong productivity growth during the past four years.

#### e. Trade

The globalization of the U.S. economy has been one of the primary trends influencing the U.S. economy in recent decades. U.S. trade in goods and services now account for nearly 28 percent of U.S. GDP.<sup>40</sup> While the United States runs a large deficit in merchandise trade, it traditionally has run a surplus in services trade, and is believed to hold a comparative advantage in many service sectors. In 2006, the United States surplus in services trade was \$81.6 billion.<sup>41</sup>

Exports are an increasingly important source of sales for firms benefiting from fair use. U.S. manufacturers have a long history in foreign markets, but many Internet firms are relatively new exporters. Due to cross country differences in copyright law and the importance of the Internet to the U.S. economy, U.S. trade officials have been seeking to incorporate fair use limitations and exceptions into free trade agreements. Such provisions are necessary for U.S. Internet service exporters, such as ISPs and search engines, to fully exercise their comparative advantages in foreign markets.

Though the revenue from the goods and services exports of fair use industries are included in the revenues and value added already measured above, they are also reported separately in order to highlight the growing importance of trade to those industries.

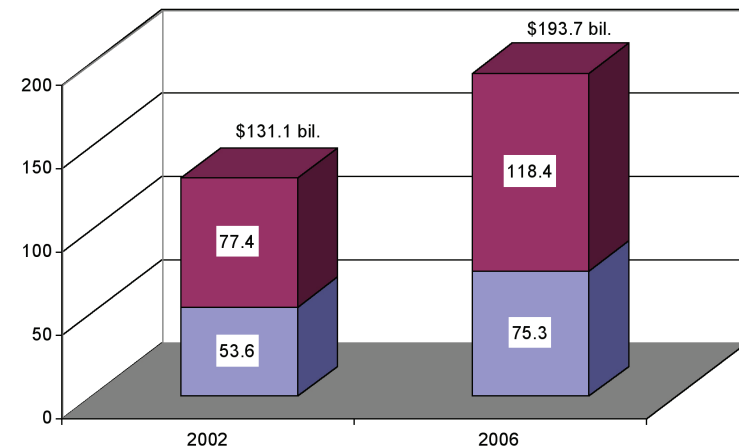
<sup>39</sup> Based on BEA data for all industries, labor productivity was \$88,203 per employee in 2005, the latest year for which data were available at the time this report was written. According to BLS, output per hour increased by 1.6 percent in 2006.

<sup>40</sup> See Bureau of Economic Analysis, Gross Domestic Product: First Quarter 2007 (Advance), (April 27, 2007). Exports of goods and services in 2006 were \$1,466 billion, imports were \$2,228 billion, and U.S. current dollar GDP was \$13,247 billion.

<sup>41</sup> *Id.* U.S. service exports in 2006 totaled \$430.8 billion, while service imports totaled \$349.2 billion.

Chart 5 shows estimated fair-use industry exports. From \$131 billion in 2002, fair-use industry related exports increased by nearly 50 percent to an estimated \$194 billion in 2006.<sup>42</sup> Due to the high level of aggregation of services trade data, it is not practical to distinguish between core and non-core exports. Instead, Chart 5 breaks down exports into goods and services.

**Chart 5. Exports of Fair Use Industries**



Note: 2006 data for services are estimated based on a 12% increase over 2005 levels.

Sources: See Appendix II, Table 5.

■ Goods ■ Services

Unlike overall exports, which are dominated by merchandise, fair use industry exports are oriented toward services. Financial services constitute the largest portion of fair use service exports, while computers are the major product category of merchandise exports among the fair use industries. Exports of trade-related services, including Internet or online services, rose from \$578 million in 2002 to an estimated \$2.6 billion in 2005, representing an annual growth rate of 65 percent, the most rapid growth among all the industries represented.<sup>43</sup>

<sup>42</sup> A detailed breakdown of other private service exports for 2006 was not available at the time this report was written. Thus, the service exports in Chart 5 for 2006 are estimated based on the growth rate for all exports of other private services in 2006.

<sup>43</sup> The estimate for 2006 is \$2.9 billion in exports. See Appendix II, Table 5.

## VII. CONCLUSIONS

The U.S. economy is an increasingly knowledge-based economy that benefits from the dynamic diversity of core and non-core fair use industries. These knowledge-based industries in turn spur production of additional goods and services that further fuel economic growth.

The Internet and information technology revolution have transformed how information is transmitted and used.<sup>44</sup> As a result, the U.S. economy has benefited from the creation and rapid expansion of new industries, and a revival of productivity growth that supports higher living standards.

The growth of the Internet did not occur, of course, in a vacuum. In addition to technological advancements, enlightened limitations and exceptions to U.S. copyright law have nurtured Internet industries by providing space for them to develop and expand their service offerings to meet the needs of consumers and businesses. This transformation has led to a surge in Internet usage, and spurred purchases of Internet infrastructure and computers, the development of new Internet applications, and an explosion of Internet-based transactions that benefit consumers and a broad range of businesses.

This report has sought to measure the footprint of fair use on the U.S. economy. It has considered not only the core fair use industries, but also the suppliers of goods and services to the fair use core and major users.

The research indicates that the industries benefiting from fair use and other limitations and exceptions make a large and growing contribution to the U.S. economy. The fair use economy in 2006 accounted for \$4.5 trillion in revenues and \$2.2 billion in value added, roughly 16.2 percent of U.S. GDP. It employed more than 17 million people and supported a payroll of \$1.2 trillion. It generated \$194 billion in exports and rapid productivity growth.

The protection afforded by fair use has been a major contributing factor to these economic gains, and will continue to support growth as the U.S. economy becomes even more dependent on information industries.

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<sup>44</sup> Brian Kahin and Dominique Foray, eds., *Advancing Knowledge and the Knowledge Economy* (MIT Press, 2006) at ix.

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# APPENDIX I

## Description of Methodology

This appendix describes the data sources and estimation methodologies used to derive the various measure of economic activity presented in this study.

There are six types of data used in this report: industry revenue, value added, payroll, employment, and exports. The sources and estimation techniques for each are discussed below.

### a. Revenues

There are two sources of data on detailed industry output: the Bureau of Economic Analysis (BEA) and the Bureau of the Census (Census), both of which reside in the Department of Commerce. The Bureau of Economic Analysis maintains the official GDP-by-industry accounts. These accounts include annual data on gross output, value added, compensation, and employment at detailed levels. The Bureau of the Census conducts the Economic Census every five years and presents monthly and quarterly data on industry sales. The Economic Census, provides data on the number of establishments, revenues, payroll, and paid employees at an even greater level of detail than the BEA's GDP-by-industry accounts.

This study employs both the GDP-by-industry accounts and the Economic Census. As noted in the text, at the time of this writing, the former was still being organized on the basis of the 1997 NAICS, which does not contain sufficient detail on the Internet-based industries of interest. Because the Economic Census contains data on the basis of both the 1997 NAICS and the 2002 NAICS, we used data from the 2002 Economic Census as the starting point for the detailed industry estimates. The Economic Census is released in stages, with the latter documents containing the most accurate data. For this report, the main sources of Census data were the *2002 Economic Census--Bridge Between 2002 NAICS and 1997 NAICS: 2002*, and the *2002 Economic Census--Comparative Statistics: 2002*

To make the study more relevant, we also decided to present data for 2006. At the time of this writing, the detailed GDP-by-industry accounts had not yet been updated to 2006. It was thus necessary to collect revenue data from a number of sources including monthly, quarterly, and annual releases by the Bureau of the Census and information provided by the trade press, industry associations, or for-profit industry studies. For some industries, data were not readily

available. In those cases, we estimated the 2006 figures by using BEA's data on gross output through 2005.

The detailed 2002 and 2006 revenue data appear in Appendix II, Table 1. The right-hand column contains information on the particular data source used for the 2006 data. The 2002 data are in most cases sourced from the Economic Census. However, there were exceptions. For example, Census data on insurance carrier industry revenues were extremely large in relation to the BEA's gross output data. Given that the methodology used to derive industry value added assumes a reasonable comparability between gross output and revenue, the Census' value for the insurance industry would lead to a large overstatement of that industry's value added. For the insurance industry, we used the BEA's data on gross output instead of the Census data. Gross output data are also used for legal and consulting services because a significant share of sales in those industries is made by firms without employees. Data from non-employers are not covered in the two Census publications used for this report.

The creation of the 2006 dataset required several estimation techniques. The BEA's data on gross output through 2005 were used as benchmarks for assessing the data from other official releases. In several industries, 2006 data were readily available and were consistent with data on gross output. In such cases, we simply used the official data. When the data from the official release was not consistent with data on gross output (i.e., the release data was significantly less than gross output, or covered a more highly aggregated sector) the growth rate implied by the official data was used to estimate 2006 revenue. In other cases, the data sample had changed during the year, and only partial year data were available. In those cases, growth rates from an earlier release were used to estimate full year 2006 data. In some instances, data from the producer price index and industrial production index were used to update the 2005 data to 2006. In other cases, the 2006 value was estimated by applying the 2002 to 2005 growth rate of industry gross output to 2005 data.

The estimated 2006 values are likely less accurate than the published 2002 Census data, but we believe they are reasonably accurate approximations.

### b. Value Added

Value added is equal to an industry's gross output minus its intermediate inputs. The value added for each industry was estimated by applying a value added factor to the revenue data. The BEA's GDP-by-industry accounts contain data on both gross output and value added by industry. The BEA's industry aggregations are at the two and three-digit NAICS level, while the industries in this study are almost always 4-or-more digit industries. In order to estimate industry value added, industry revenue was multiplied by the value-added-to-gross-output ratio of the appropriate three-digit industry. For example, the software industry (1997 NAICS 5112) accounted for an estimated \$132 billion in revenue in 2006. The software industry is considered a publishing

industry (1997 NAICS 511). To calculate value added for the software industry, we compute the value-added-to-gross-output ratio for NAICS 511 ( $150,244 / 268,169 = 0.56$ ) for 2005 and applied that factor to \$132 billion for a value added in 2006 of \$73.7 billion.

To assess the accuracy of this approach we summed the information industry categories used in this report and compared the growth of value added from 2002 to 2006 to the growth value added for the Information sector (NAICS 51) in the BEA's GDP-by-industry accounts. The growth rates were extremely close (19.3 percent for the study sample versus 19.7 percent for the NAICS 51).

#### c. Payroll

Payroll includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation allowances, sick-leave pay, and employee contributions to qualified pension plans paid during the year to all employees and reported as taxable Medicare Wages and tips. The 2002 data on industry payroll are published in the *2002 Economic Census*, the same source used for the revenue data. The 2006 payroll data were estimated based on industry value added estimates for 2006. Specifically, we assumed that in 2006, the ratio of value added to revenue was unchanged from the ratio that prevailed in 2002. To estimate payroll in 2006, 2006 value added was multiplied by the 2002 ratio of payroll to value added. For example, payroll of NAICS 334413, semiconductor and related device manufacturing, was \$9.8 billion in 2002, while value added was an estimated \$21.7 billion. To derive industry payroll in 2006, the ratio of payroll to value added in 2002, 0.452 was multiplied by estimated value added in 2006, \$29.2 billion. Based on this methodology, the payroll of NAICS 334413 in 2006 was an estimated \$13.2 billion.

#### d. Employment

Data on the number of employees by industry are available for both 2002 and 2006 from the Bureau of Labor Statistics. No estimation was required.

#### e. Foreign Trade

Data on industry merchandise exports are available for both 2002 and 2006 from the USITC. The data for service exports by industry, published by the BEA, are available through 2005 at the time of this writing. To estimate 2006 data, we used Census estimates for "other private services", which are published in the Census' *FT900*, the monthly release of U.S. foreign trade data. This bucket category includes the fair use services industries, though at a higher level of aggregation than data on output and employment. The growth rate of "other private services" exports in 2006 was calculated from the *FT900* and applied to the 2005 BEA data on exports by the individual fair use services industries.

## APPENDIX II

**Table 1: Industry Revenue Data for Fair Use Industries (Millions of dollars)**

2002 NAICS Codes	Description	2002	2006
333315	Photographic & photocopying equipment mfg	2,139	2,394
3341	Computer and peripheral equipment manufacturing	73,562	60,852
3343	Audio & video equipment manufacturing	8,522	13,109
334413	Semiconductors and related device manufacturing	61,471	82,307
3346	Manufacturing and reproducing magnetic and optical media	7,550	7,954
454111	Electronic shopping	24,057	110,059
454112	Electronic auctions	904	4,135
5111	Newspaper publishers	46,179	49,028
51114, 51119	Directory, mailing list, and other publishers	24,422	25,102
5112	Software publishers	103,597	131,598
5161	Internet publishing and broadcasting	6,509	49,707
5181	Internet service providers and web search portals	21,566	
519	Other information services	4,908	
5182	Data processing, hosting, and related services	57,706	70,220
5231	Securities, commodity contracts, and investments	212,236	354,776

Core Industries

Table 1 (continued) : Industry Revenue Data for Fair Use Industries (Millions of dollars)

## Core Industries (continued)

2002 NAICS Codes	Description	2002	2006
5121	Motion picture and video industries	62,951	95,726
5122	Sound recording industries	15,338	
5239	Other financial investment activities	102,809	153,990
5241	Insurance carriers	332,460	480,543
5259	Other investment pools and funds/	22,874	32,120
53223	Video tape and disc rental	9,364	10,288
5411	Legal services	182,098	261,472
5413	Architectural, engineering, and related services	158,366	235,812
54143	Graphic design services	8,096	10,488
5417	Scientific research & development services	93,082	115,489
611a	Education services	121,300	156,066
7111	Performing arts companies	10,864	11,396
7115	Independent artists, writers, and performers	9,338	9,507
811212	Computer and office machine repair and maintenance	6,380	7,202
	Core Industries Total	1,790,647	2,541,341

Table 1 (continued) : Industry Revenue Data for Fair Use Industries (Millions of dollars)

## Non-Core Industries

2002 NAICS Codes	Description	2002	2006
3230	Printing and related support activities	95,592	91,393
3342	Communications equipment manufacturing	66,143	71,802
335920	Communication and energy wire and cable manufacturing	11,360	13,610
4234301	Computer & peripheral equip merchant wholesalers	217,790	250,630
4234302	Computer software (packaged) merchant wholesalers	14,730	16,951
42511	Business to business electronic markets	2,765	12,190
42362	Electric appliance, TV & radio merchant wholesalers	59,830	78,696
4236901	Communications equipment & supp merchant wholesalers	78,309	103,000
42512036	Electrical & electronic goods agents & brokers	50,618	63,223
443112	Radio, television & other electronics stores	48,451	62,820
44312	Computer & software stores	16,696	20,441

Table 1 (continued) : Industry Revenue Data for Fair Use Industries (Millions of dollars)

Non-Core Industries (continued)			
2002 NAICS Codes	Description	2002	2006
4512	Book, periodical, and music stores	23,096	24,798
5151	Radio & television broadcasting	48,873	57,885
5152	Cable networks	25,375	39,033
5171	Wired telecommunications carriers	241,948	199,344
5172	Wireless telecommunications carriers (except satellite)	99,158	160,015
5175	Cable and other program distribution	57,706	91,865
5173, 5174, and 5179	Other telecommunications	17,096	22,254
5232	Securities and commodity exchanges	Not disclosed	Not disclosed
5242	Agencies, brokerages, and other insurance related activities	126,406	165,459
5251	Insurance & employee benefit funds	Not covered	Not covered
5415	Computer system design and related services	173,480	198,441
5416	Management, scientific, & technical consulting services	140,636	196,480
611b	Education services	39,312	47,794
7113	Promoters of performing arts, sports, and similar events	11,698	13,766
7114	Agents and managers for artists, writers, and performers	4,073	4,792
	Non-Core Industries Total	1,671,140	2,006,684

Table 1 (continued): Industry Revenue Data for Fair Use Industries (Millions of dollars)

## Sources:

- 1) 2002—Bureau of the Census, *2002 Economic Census--Bridge Between 2002 NAICS and 1997 NAICS: 2002*; Bureau of the Census, *2002 Economic Census--Comparative Statistics: 2002*; <http://www.census.gov/econ/census02/data/us/US000.HTM>; and Bureau of Economic Analysis at [http://www.bea.gov/industry/gdpbyind\\_data.htm](http://www.bea.gov/industry/gdpbyind_data.htm)
- 2) 2006—Data for 2006 are either actual data from, or authors' estimates based on, Bureau of Economic Analysis at [http://www.bea.gov/industry/gdpbyind\\_data.htm](http://www.bea.gov/industry/gdpbyind_data.htm); Bureau of Labor Statistics (industry producer prices); Federal Reserve Board of Governors (industrial production); Semiconductor Industry Association (*Global Billings Report for the Americas*); Rentrak's Home Video Essentials™; *Supplier US Relations* at [www.mindbranch.com](http://www.mindbranch.com); and the following publications from the Bureau of the Census: Current Industrial Reports, *MQ334R(06)* and *MQ334P(06)-4*; *Quarterly Retail E-Commerce Sales, Q1 2007*; *Quarterly Services Survey*, various issues; *Monthly Wholesale Trade: Sales and Inventories*; *Monthly Retail Sales and Seasonal Factors*; and *Annual Revision of Monthly Retail and Food Services: Sales and Inventories January 1992 through February 2007*.

Table 2: Industry Value Added Data for Fair Use Industries (Millions of dollars)

## Core Industries

2002 NAICS Codes	Description	2002		2006	
333315	Photographic & photocopying equipment mfg		861		925
3341	Computer and peripheral equipment manufacturing		25,955		21,596
3343	Audio & video equipment manufacturing		3,007		4,652
334413	Semiconductors and related device manufacturing		21,690		29,209
3346	Manufacturing and reproducing magnetic and optical media		2,664		2,823
454111	Electronic shopping		5,353		24,378
454112	Electronic auctions		201		
51111	Newspaper publishers		22,787		27,516
51114, 51119	Directory, mailing list, and other publishers		12,051		14,064
5112	Software publishers		51,120		73,987
5161	Internet publishing and broadcasting		3,057		
5181	Internet service providers and web search portals		10,128		25,393
519	Other information services		2,305		

Table 2 (continued): Industry Value Added Data for Fair Use Industries (Millions of dollars)

## Core Industries (continued)

2002 NAICS Codes	Description	2002		2006	
5182	Data processing, hosting, and related services		27,100		35,873
5231	Securities, commodity contracts, and investments		132,963		185,178
5121	Motion picture and video industries		29,200		44,589
5122	Sound recording industries		7,115		
5239	Other financial investment activities		71,142		98,519
5241	Insurance carriers		172,031		239,999
5259	Other investment pools and funds/		15,828		20,550
53223	Video tape and disc rental		4,879		4,398
5411	Legal services		130,992		192,766
5413	Architectural, engineering, and related services		89,695		137,026
54143	Graphic design services		4,585		6,094
5417	Scientific research & development services		52,720		67,109
611a	Education services		70,439		94,080
7111	Performing arts companies		6,814		7,114
7115	Independent artists, writers, and performers		5,858		5,935
811212	Computer and office machine repair and maintenance		3,500		3,900
	<b>Core Industries Total</b>		<b>986,039</b>		<b>1,367,671</b>



Table 2 (continued): Industry Value Added Data for Fair Use Industries (Millions of dollars)

## Non-Core Industries

2002 NAICS Codes	Description	2002	2006
3230	Printing and related support activities	45,865	47,881
3342	Communications equipment manufacturing	23,338	25,482
335920	Communication and energy wire and cable manufacturing	5,505	5,957
4234301	Computer & peripheral equip merchant wholesalers	28,916	32,717
4234302	Computer software (packaged) merchant wholesalers	1,956	2,213
42511	Business to business electronic markets	1,947	8,438
42362	Electric appliance, TV & radio merchant wholesalers	7,944	8,253
4236901	Communications equipment & supp merchant wholesalers	10,397	13,446
42512036	Electrical & electronic goods agents & brokers	6,721	10,040
443112	Radio, television & other electronics stores	10,780	13,411
44312	Computer & software stores	3,715	4,364
4512	Book, periodical, and music stores	15,383	15,847
5151	Radio & television broadcasting	23,160	25,591
5152	Cable networks	12,025	17,257

Table 2 (continued): Industry Value Added Data for Fair Use Industries (Millions of dollars)

## Non-Core Industries (continued)

2002 NAICS Codes	Description	2002	2006
5171	Wired telecommunications carriers	114,654	88,131
5172	Wireless telecommunications carriers (except satellite)	46,989	70,743
5175	Cable and other program distribution	27,346	40,614
5173, 5174, and 5179	Other telecommunications	8,101	9,839
5232	Securities and commodity exchanges	Not disclosed	Not disclosed
5242	Agencies, brokerages, and other insurance related activities	65,408	82,636
5251	Insurance & employee benefit funds	Not covered	Not covered
5415	Computer system design and related services	134,075	154,826
5416	Management, scientific, & technical consulting services	79,653	114,171
611b	Education services	22,829	28,811
7113	Promoters of performing arts, sports, and similar events	7,338	8,593
7114	Agents and managers for artists, writers, and performers	2,555	2,992
	<b>Non-Core Industries Total</b>	<b>706,600</b>	<b>832,251</b>

Table 2 (continued): Industry Value Added Data for Fair Use Industries (Millions of dollars)

## Sources:

- 1) 2002—Bureau of the Census, *2002 Economic Census--Bridge Between 2002 NAICS and 1997 NAICS: 2002*; Bureau of the Census, *2002 Economic Census--Comparative Statistics: 2002*; and <http://www.census.gov/econ/census02/data/us/US000.HTM>.
- 2) 2006—Authors' estimates based on data from the above sources and from data maintained by the Bureau of Economic Analysis at [http://www.bea.gov/industry/gdpbyind\\_data.htm](http://www.bea.gov/industry/gdpbyind_data.htm).

Table 3: Industry Employment Data for Fair Use Industries (Thousands of employees)

Core Industries		2002		2006	
2002 NAICS Codes	Description	2002	2006	2002	2006
333315	Photographic & photocopying equipment mfg	22.0	13.0		
3341	Computer and peripheral equipment manufacturing	250.0	198.8		
3343	Audio & video equipment manufacturing	42.0	31.7		
334413	Semiconductors and related device manufacturing	251.5	233.4		
3346	Manufacturing and reproducing magnetic and optical media	54.9	41.1		
454111	Electronic shopping				
454112	Electronic auctions	53.5	73.9		
51111	Newspaper publishers	388.9	361.0		
51114, 51119	Directory, mailing list, and other publishers	83.8	72.7		
5112	Software publishers	253.3	243.4		
5161	Internet publishing and broadcasting	33.7	34.5		
5181	Internet service providers and web search portals	137.0	121.7		
519	Other information services	47.3	51.4		
5182	Data processing, hosting, and related services	303.9	261.6		

Table 3 (continued): Industry Employment Data for Fair Use Industries (Thousands of employees)  
Core Industries (continued)

2002 NAICS Codes	Description	2002	2006
5231	Securities, commodity contracts, and investments	528.3	509.7
5121	Motion picture and video industries	360.6	357.2
5122	Sound recording industries	27.3	20.3
5239	Other financial investment activities	261.2	306.6
5241	Insurance carriers	1,412.8	1,427.7
5259	Other investment pools and funds/	38.2	45.0
53223	Video tape and disc rental	156.9	129.0
5411	Legal services	1,115.3	1,173.4
5413	Architectural, engineering, and related services	1,246.1	1,385.6
54143	Graphic design services	70.9	69.5
5417	Scientific research & development services	537.6	593.4
611a	Education services	2,593.1	2,833.7
7111	Performing arts companies	120.9	120.7
7115	Independent artists, writers, and performers Computer and office machine repair and maintenance	40.0	46.8
811212		48.0	43.9
	<b>Core Industries Total</b>	<b>10,479</b>	<b>10,801</b>

Table 3 (continued): Industry Employment Data for Fair Use Industries (Thousands of employees)  
Non-Core Industries

2002 NAICS Codes	Description	2002	2006
3230	Printing and related support activities	706.6	635.9
3342	Communications equipment manufacturing	185.8	144.4
335920	Communication and energy wire and cable manufacturing	25.4	21.1
4234301	Computer & peripheral equip merchant wholesalers	267.7	247.6
4234302	Computer software (packaged) merchant wholesalers		
42511	Business to business electronic markets	80.9	56.2
42362	Electric appliance, TV & radio merchant wholesalers	218.0	196.9
4236901	Communications equipment & supp merchant wholesalers		
42512036	Electrical & electronic goods agents & brokers	25.8	23.3
443112	Radio, television & other electronics stores	245.2	304.2
44312	Computer & software stores	155.4	126.7
4512	Book, periodical, and music stores	226.7	189.7
5151	Radio & television broadcasting	130.1	127.7
5152	Cable networks	92.9	90.2
5171	Wired telecommunications carriers	650.7	477.9

Table 3 (continued): Industry Employment Data for Fair Use Industries (Thousands of employees)

## Non-Core Industries (continued)

2002 NAICS Codes	Description	2002		2006	
5172	Wireless telecommunications carriers (except satellite)	197.3		200.1	
5175	Cable and other program distribution	130.3		144.3	
5173, 5174, and 5179	Other telecommunications	208.2		150.6	
5232	Securities and commodity exchanges	Included in 5231			
5242	Agencies, brokerages, and other insurance related activities	820.4		888.2	
5251	Insurance & employee benefit funds	47.2		48.1	
5415	Computer system design and related services	1,152.8		1,278.2	
5416	Management, scientific, & technical consulting services	734.4		920.9	
611b	Education services	49.7		84.7	
7113	Promoters of performing arts, sports, and similar events				
7114	Agents and managers for artists, writers, and performers	82.8		100.0	
	<b>Non-Core Industries Total</b>	<b>6,434</b>		<b>6,457</b>	

Source: Bureau of Labor Statistics, *Employment, Hours, and Earnings*, at <http://data.bls.gov/PDQ/outside.jsp?survey=ce><http://data.bls.gov/PDQ/outside.jsp?survey=ce><http://data.bls.gov/PDQ/outside.jsp?survey=ce>

Table 4: Industry Payroll Data for Fair Use Industries (Millions of dollars)

## Core Industries

2002 NAICS Codes	Description	2002	2006
333315	Photographic & photocopying equipment mfg	401	431
3341	Computer and peripheral equipment manufacturing	8,284	6,893
3343	Audio & video equipment manufacturing	927	1,434
334413	Semiconductors and related device manufacturing	9,808	13,209
3346	Manufacturing and reproducing magnetic and optical media	1,367	1,449
454111	Electronic shopping	1,673	9,399
454112	Electronic auctions	469	
51111	Newspaper publishers	13,752	16,606
51114, 51119	Directory, mailing list, and other publishers	3,704	4,322
5112	Software publishers	34,966	50,607
5161	Internet publishing and broadcasting	2,383	
5181	Internet service providers and web search portals	3,553	14,361
519	Other information services	2,824	
5182	Data processing, hosting, and related services	21,398	28,325

Table 4 (continued): Industry Payroll Data for Fair Use Industries (Millions of dollars)

Core Industries (continued)			
2002 NAICS Codes	Description	2002	2006
5231	Securities, commodity contracts, and investments	69,048	96,163
5121	Motion picture and video industries	10,402	15,885
5122	Sound recording industries	2,251	
5239	Other financial investment activities	30,047	41,610
5241	Insurance carriers	83,555	116,567
5259	Other investment pools and funds/	1,283	1,666
53223	Video tape and disc rental	1,666	1,502
5411	Legal services	69,875	102,827
5413	Architectural, engineering, and related services	66,709	101,910
54143	Graphic design services	2,769	3,680
5417	Scientific research & development services	43,699	55,626
611a	Education services	64,579	86,253
7111	Performing arts companies	3,267	3,410
7115	Independent artists, writers, and performers	4,324	4,381
811212	Computer and office machine repair and maintenance	2,252	2,509
	<b>Core Industries Total</b>	<b>561,234</b>	<b>781,024</b>

Table 4 (continued): Industry Payroll Data for Fair Use Industries (Millions of dollars)

Non-Core Industries			
2002 NAICS Codes	Description	2002	2006
3230	Printing and related support activities	25,626	26,752
3342	Communications equipment manufacturing	10,693	11,675
335920	Communication and energy wire and cable manufacturing	1,715	1,856
4234301	Computer & peripheral equip merchant wholesalers	19,649	22,232
4234302	Computer software (packaged) merchant wholesalers	2,528	2,860
42511	Business to business electronic markets	62	269
42362	Electric appliance, TV & radio merchant wholesalers	2,202	2,288
4236901	Communications equipment & supp merchant wholesalers	9,944	12,859
42512036	Electrical & electronic goods agents & brokers	1,464	2,187
443112	Radio, television & other electronics stores	5,287	6,577
44312	Computer & software stores	1,832	2,153
4512	Book, periodical, and music stores	2,617	2,696
5151	Radio & television broadcasting	11,655	12,879
5152	Cable networks	2,849	4,088

Table 4 (continued): Industry Payroll Data for Fair Use Industries (Millions of dollars)  
Non-Core Industries (continued)

2002 NAICS Codes	Description	2002	2006
5171	Wired telecommunications carriers	47,805	36,746
	Wireless telecommunications carriers (except satellite)		
5172		13,117	19,748
5175	Cable and other program distribution	8,553	12,702
5173, 5174, and 5179	Other telecommunications	2,932	3,561
5232	Securities and commodity exchanges		
	Agencies, brokerages, and other insurance related activities		
5242		37,076	46,841
5251	Insurance & employee benefit funds		
5415	Computer system design and related services	72,399	83,604
5416	Management, scientific, & technical consulting services	43,089	61,762
611b	Education services	20,930	26,414
	Promoters of performing arts, sports, and similar events	2,020	2,366
7113	Agents and managers for artists, writers, and performers		
7114		1,415	1,658
	<b>Non-Core Industries Total</b>	<b>347,459</b>	<b>406,772</b>

Table 4 (continued): Industry Payroll Data for Fair Use Industries (Millions of dollars)

Sources:

- 1) 2002—Bureau of the Census, *2002 Economic Census--Bridge Between 2002 NAICS and 1997 NAICS: 2002*; Bureau of the Census, *2002 Economic Census--Comparative Statistics: 2002*; and <http://www.census.gov/econ/census02/data/us/US000.HTM>.
- 2) 2006—Authors' estimates based on data from the above sources and from data maintained by the Bureau of Economic Analysis at [http://www.bea.gov/industry/gdpbyind\\_data.htm](http://www.bea.gov/industry/gdpbyind_data.htm).

Table 5: Export Data for Fair Use Industries (Millions of dollars)

	<b>Goods</b>	
	<b>2002</b>	<b>2006</b>
Printed matter and related products, NESOI	924	1,867
Photographic and photocopying equipment	740	407
Computer equipment	29,150	29,780
Communications equipment	16,784	33,027
Audio and video equipment	3,986	4,232
Semiconductors and related devices	709	2,142
Magnetic and optical media	322	1,126
Communication and energy wires and cables	702	1,709
Software, NESOI	312	1,007

Table 5 (continued): Export Data for Fair Use Industries (Millions of dollars)

	<b>Services 1/</b>	
	<b>2002</b>	<b>2006</b>
Financial services	21,946	38,187
Insurance services	4,415	7,654
Telecommunications	3,890	5,293
Education Services	12,626	15,824
Computer and information services	7,093	9,232
Management and consulting services	4,439	7,192
Research, development, and testing	8,142	11,311
Tape rentals	9,350	11,629
Architectural, engineering, and other technical services	1,679	4,098
Legal services	3,099	4,825
Sports and performing arts	170	220
Trade-related services	578	2,929

1/ At the time of this writing, BEA data on services exports by industry were only available through 2005. Values for 2006 were estimated by applying the growth rate of the category "other private services," which is available from the Bureau of Census.

# APPENDIX II

**Table 5 (continued): Export Data for Fair Use Industries (Millions of dollars)**

**Sources:**

- 1) Goods: USITC Trade Databeab at <http://dataweb.usitc.gov>.
- 2) Services: U.S. Department of Commerce, Bureau of Economic Analysis, Balance of Payments Division at <http://www.bea.gov/international/intlserv.htm>, tab1b; and Bureau of the Census, *FT900: U.S. International Trade in Goods and Services: February 2007* (April 13, 2007) at Exhibit 3.

# APPENDIX II

**Table 6: Estimated Contribution of Core Industry Value added to GDP (Millions of dollars and Index values, 2000 = 100)**

2002 NAICS Codes	Description	Nominal Value Added			Value Added Price Index			2006 Real Value Added
		2002	2006	2006	2002	2005	est. 2006	
333315	Photographic & photocopying equipment mfg	861	925	925	103.5	101.9	102.4	935
3341	Computer and peripheral equipment manufacturing	25,955	21,596	21,596	66.8	43.7	43.9	32,903
3343	Audio & video equipment manufacturing	3,007	4,652	4,652	66.8	43.7	43.9	7,088
334413	Semiconductors and related device manufacturing	21,690	29,209	29,209	66.8	43.7	43.9	44,504
3346	Manufacturing and reproducing magnetic and optical media	2,664	2,823	2,823	66.8	43.7	43.9	4,301
454111	Electronic shopping	5,353	24,378	24,378	99.4	101.7	102.3	23,682
454112	Electronic auctions	201	27,516	27,516	99.4	101.7	102.3	30,524
51111	Newspaper publishers	22,787	14,064	14,064	103.1	95.5	92.9	15,324
51114, 51119	Directory, mailing list, and other publishers	12,051	73,987	73,987	105.6	99.6	97.0	82,074
5112	Software publishers	51,120	3,057	3,057	103.1	95.5	92.9	27,834
5161	Internet publishing and broadcasting	10,128	25,393	25,393	105.6	99.6	97.0	
5181	Internet service providers and web search portals	2,305			105.6	99.6	97.0	
519	Other information services	27,100	35,873	35,873	105.6	99.6	97.0	39,087
5182	Data processing, hosting, and related services							



# APPENDIX II

Table 6 (continued): Estimated Contribution of Core Industry Value added to GDP  
(Millions of dollars and Index values, 2000 = 100)

2002 NAICS Codes	Description	Nominal Value Added			Value Added Price Index		
		2002	2006	2002	2005	2006 est.	2006 Real Value Added
5231	Securities, commodity contracts, and investments	132,963	185,178	87.4	81.6	83.9	192,960
5121	Motion picture and video industries	29,200	44,589	108.6	109.2	106.2	45,590
5122	Sound recording industries	7,115		108.6	109.2	106.2	
5239	Other financial investment activities	71,142	98,519	87.4	81.6	83.9	102,659
5241	Insurance carriers	172,031	239,999	105.7	125.2	128.7	197,047
5259	Other investment pools and funds/	15,828	20,550	162.5	112.2	115.3	28,952
53223	Video tape and disc rental	4,879	4,398	99.0	111.4	115.2	3,778
5411	Legal services	130,992	192,766	109.9	128.3	131.2	161,516
5413	Architectural, engineering, and related services	89,695	137,026	105.7	105.5	107.9	134,287
54143	Graphic design services	4,585	6,094	105.7	105.5	107.9	5,972
5417	Scientific research & development services	52,720	67,109	105.7	105.5	107.9	65,767
611a	Education services	70,439	94,080	114.9	132.1	137.9	78,366
7111	Performing arts companies	6,814	7,114	108.8	122.8	127.0	6,095
7115	Independent artists, writers, and performers	5,858	5,935	108.8	122.8	127.0	5,084
811212	Computer and office machine repair and maintenance	3,500	3,900	111.7	124.1	128.7	3,386
	<b>TOTAL CORE</b>	<b>986,039</b>	<b>1,367,671</b>				<b>1,339,715</b>

# APPENDIX II

Table 6 (continued): Estimated Contribution of Core Industry Value added to GDP  
(Millions of dollars and Index values, 2000 = 100)

Contribution calculation:

	2002	2006	% Ch.
Real GDP Index	102.362	116.281	13.6%
Core Share	9.4%		
Core Real Value Added (2002 dollars)	986,039	1,339,715	35.9%
<b>Contribution (core share * % Ch. core real value added / % Ch. real GDP Index)</b>			<b>24.8%</b>

Sources:

- 1) 2002—Bureau of the Census, *2002 Economic Census--Bridge Between 2002 NAICS and 1997 NAICS: 2002*; Bureau of the Census, *2002 Economic Census--Comparative Statistics: 2002*; and <http://www.census.gov/econ/census02/data/us/US000.HTM>.
- 2) 2006—Authors' estimates based on data from the above sources and from data maintained by the Bureau of Economic Analysis at [http://www.bea.gov/industry/gdpbyind\\_data.htm](http://www.bea.gov/industry/gdpbyind_data.htm).

## APPENDIX III

### Glossary of Fair Use Provisions

#### *17 U.S.C. § 102(a) (non-copyrightability of facts):*

The fact/expression dichotomy is a limitation on the scope of copyright that renders facts non-copyrightable. This principle limits severely the scope of protection in fact-based works. The result of Section 102(a)'s requirement of originality is that raw facts may be copied at will. See *Feist Pub'ns, Inc. v Rural Tel. Serv. Co.*, 499 U.S. 340, 350 (1991).

#### *17 U.S.C. § 102(b) (idea/expression dichotomy):*

Articulated in *Baker v. Selden*, 101 U.S. 99, 102-04 (1879) the idea/expression dichotomy represents the principle that copyright may extend to the expression of an idea, but not the idea itself. Section 102(b) explicitly withholds protection from “any idea, procedure, process, system, method of operation, concept, principle, or discovery....” This principle is the source of the merger doctrine, which limits copyright when the number of possible variations for expressing an idea are externally limited. In such case, the limited possibilities of expression merge with the ‘idea’ and become non-copyrightable.

#### *17 U.S.C. § 102(b) (non-protectability of interface specifications):*

An application of the idea/expression dichotomy, the non-protectability of interface specifications has been established in a line of U.S. copyright cases, notably *Lotus Dev. v. Borland Int'l*, 49 F.3d 807 (1995) and *Computer Assocs. v. Altai, Inc.*, 982 F.2d 693 (2d Cir. 1992). These courts ruled that interface specifications are not copyrightable, either because they are unprotectable “methods of operation” or because elements dictated by efficiency or necessity lose protection under the merger doctrine.

#### *17 U.S.C. § 105 (no copyright in U.S. government works):*

The Copyright Act prohibits the Federal Government from taking copyright in the works that it authors. As a result, all works authored by the Federal Government employees immediately enter the public domain and become freely available for public use.

#### *17 U.S.C. § 107 (fair use: criticism, comment, news reporting, teaching, scholarship, research, etc.):*

Section 107 of the Copyright Act explicitly protects the fair use of a copyrighted work for purposes including but not limited to criticism, comment, news reporting, teaching (including multiple

copies for classroom use), scholarship, or research. Such use is not an infringement of copyright.

#### *17 U.S.C. § 107 (fair use: reverse engineering):*

Under the fair use doctrine, a person may disassemble a computer program in order to gain an understanding of the unprotected functional elements of the program, where there is a legitimate reason for doing so and no other means of access to the unprotected elements exists. See *Sega Enterprises Ltd. v. Accolade, Inc.*, 977 F.2d 1510 (9th Cir. 1992); *Atari v. Nintendo*, 975 F.2d 832 (Fed. Cir. 1992).

#### *17 U.S.C. § 107 (fair use: browser copies):*

Under the fair use doctrine, local cache reproductions of copyrighted works by the web browsers of individual users are fair use, as they are noncommercial, transformative, necessary for essential Internet functions, and do not supersede copyright holders' exploitation of their works. See *Perfect 10, Inc. v. Amazon.com, Inc.*, 487 F.3d 701, at 726 (9th Cir. 2007).

#### *17 U.S.C. § 107 (fair use: search engine cache copies):*

Under the fair use doctrine, search engines' reproduction in their search databases of images and text they crawled on the World Wide Web, and subsequent display of these materials in search results, are permitted because of their significant social utility. See *Kelly v. Arriba Soft*, 336 F.3d 811 (9th Cir. 2003); *Field v. Google*, 412 F. Supp. 2d 1106 (D. Nev. 2006); *Perfect 10, Inc. v. Amazon.com, Inc.*, 487 F.3d 701 (9th Cir. 2007).

#### *17 U.S.C. § 107 (fair use: time and space shifting):*

Under the fair use doctrine, users may utilize technological devices to shift the context in which they view copyrighted works, i.e., to tape a program for later viewing on the same or different device. Such use has been held to be paradigmatic noncommercial personal use entirely consistent with the purposes of the Copyright Act. See *Sony Corp. of Am v. Universal City Studios*, 464 U.S. 417 (1984); *Recording Indus. Ass'n of Am. v. Diamond Multimedia Sys.*, 180 F.3d 1072, 1079 (9th Cir. 1999).

#### *17 U.S.C. § 108 (library uses):*

The Copyright Act permits libraries and archives to make reproductions for purposes of preservation, replacement of damaged copies, and inter-library loans.

#### *17 U.S.C. § 109(a) (first sale doctrine):*

The Copyright Act permits the owner of a lawfully made copy to sell or lend that copy to others.







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