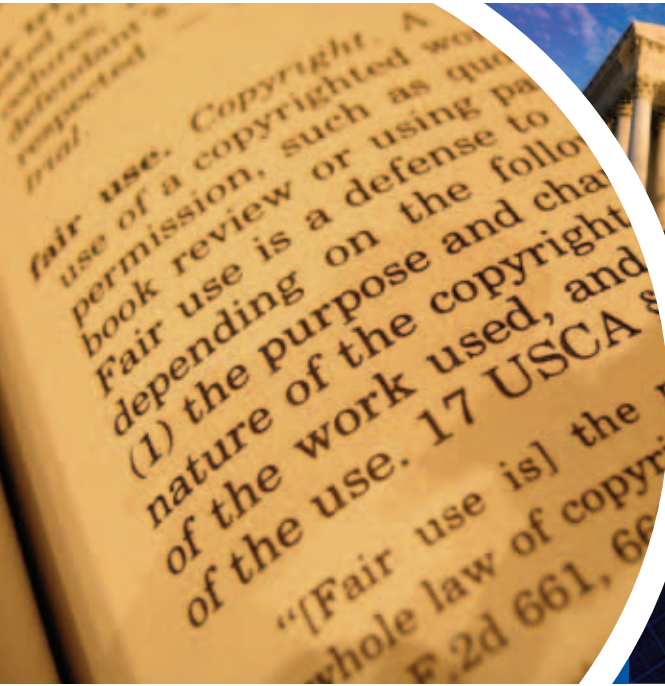


# FAIR USE IN THE U.S. ECONOMY



2011

## Economic Contribution of Industries Relying on Fair Use

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# Preface

Correctly balancing the legal incentives created by copyright with the regulatory burden that the copyright system imposes on other important rights, such as free speech and a competitive marketplace, is a continuing challenge for policymakers. It has become increasingly clear that this balancing is essential, since a large portion of U.S. industrial activity depends on fair use and other limitations upon the regulatory reach of copyright laws. In 2007, CCIA issued the first ever study attempting to value economic activity that benefits from copyright fair use and other limitations on the copyright regulatory regime.

This update of that research utilizes the most current available data to assess the continuing economic value of these industries. As the data reflects, these ‘fair use industries’ make an extraordinary contribution to our economy.

In difficult economic times, we need to preserve America’s engines of innovation. Increased regulation through stricter, more intrusive copyright laws may conceivably promote certain types of creative activity, but it will also likely deter significant technology innovation, at a time when technology innovators are leading the effort to add new, high-paying jobs to our struggling economy.

*“We must recognize that what copyright leaves unregulated – the Fair Use Economy – is at least as economically significant as what it regulates.”*

As I have said before, we must recognize that what copyright leaves unregulated – the Fair Use Economy – is at least as economically significant as what it regulates. This update quantifies and elaborates on that reality by employing the methodological guidelines of the World Intellectual Property Organization (WIPO) for assessing economic activities related to copyright. This report should be instrumental to resolving current copyright policy questions, by demonstrating how important balanced copyright law is to our national economy, our exports, our technological leadership, and job creation.

**ED BLACK**

*President & CEO*

Computer & Communications Industry Association

# Executive Summary

*In 2007, CCIA released a report prepared by Capital Trade, Inc. that was the first comprehensive study quantifying the U.S. economic contribution of industries relying on Fair Use. The report showed that fair use industries grew rapidly from 2002 to 2006 and played a large role in overall national economic welfare, generating an estimated \$4.4 trillion in revenue, accounting for one-sixth of total U.S. gross domestic product, and employing more than 17 million workers.*

*In 2010, the first update highlighted the continued significant growth of the fair use economy in 2007. Total revenue, exports, and employment all increased substantially over the 2006 level.*

*This second update includes data for two additional years, 2008 and 2009. This period covers the recent recession and the data reflect the depth of the downturn. Economic activity began falling sharply in the second half of 2008 and GDP for 2009 declined by 2.6 percent. The fair use economy encompasses many of America's leading industries and companies, but even these sectors were not immune from the overall downturn. Notwithstanding this recessionary environment, the fair use economy remained steady when measured by value added, while the remainder of the U.S. economy contracted. The data continue to illustrate the compelling size and breadth of the fair use economy and its importance to the long-term growth of the overall U.S. economy.*



While policymakers devote significant attention to copyright infringement, 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, classified here 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 represent 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. Until the 2007 publication of *Fair Use in the U.S. Economy*, however, the economic contribution of industries dependent on fair use had not been quantified. This update continues to fill the gap and provides a comprehensive assessment of the economic contribution generated by companies benefiting from fair use and related limitations and exceptions.

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. The ubiquity of the Internet means that the economic growth fostered by fair use is widespread and generates significant consumer benefits.

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1. 17 U.S.C. § 107.

Examples of these industries include:

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

These industries and others that depend upon fair use and related limitations and exceptions are referred to here as “fair use industries.” As summarized in the following report, the courts have held in favor of fair use in situations that are 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.

Fair use industries have grown dramatically within the past 20 years, and their growth has had a profound impact on the U.S. economy. This report contains detailed data organized by industry and summarizes economic activity and growth in five areas:

**Revenue** — In 2008 and 2009, fair use industries generated total revenue averaging \$4.6 trillion, a 35 percent increase over 2002 revenue of \$3.4 trillion. In percentage terms, the most significant growth over this seven year period occurred in Internet publishing and broadcasting and web search portals, electronic shopping and electronic auctions, and other financial investment activity.

**Value Added** — Fair use-related industry value added in 2008 and 2009 averaged \$2.4 trillion, approximately 17 percent of total U.S. current dollar GDP. 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.



Fair use industries also grew at a faster pace than the overall economy. The core fair use industries, which accounted for 9.2 percent of the economy in 2002, accounted for 19.7 percent of U.S. real economic growth from 2002 to 2009.

**Employment** — Employment in industries benefiting from fair use and related limitations and exceptions increased from 16.9 million in 2002 to 17.7 million in 2008. Due to the impact of the recession, employment fell back to 17 million in 2009. About one out of every eight workers in the United States is employed in an industry that benefits from these protections.

Further illustrating the rapid growth of fair use industries, total payrolls expanded rapidly, rising from \$895 billion in 2002 to an average of more than \$1.2 trillion during 2008 and 2009.

**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 2007, the productivity of U.S. fair use industries increased by 38 percent to nearly \$137,000 per employee. Productivity of fair use industries continued to increase in the most recent period, rising to \$141,000 per employee in 2009, a level that greatly exceeds the economy-wide average productivity of \$108,000 per employee. Numerous researchers have determined that companies dependent on fair use, such as information technology companies, have stimulated U.S. productivity growth.

**Exports** — Exports of goods and services related to fair use industries increased by 64 percent from \$179 billion in 2002 to \$294 billion in 2008, and then fell back to \$266 billion in 2009. Within this overall increase, exports of trade-related services, including Internet or online services, were the fastest growing segment, increasing nearly ten-fold from \$578 million in 2002 to an average of more than \$5 billion annually in 2008-2009.

By any measure, the growth rate of fair use industries has outpaced overall economic growth in recent years, fueled productivity gains, and supported millions of jobs.

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Through the information technology revolution and the related growth of the Internet, 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 2008 and 2009 accounted for an average of \$4.6 trillion in revenues and \$2.4 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. Over these two years, fair use companies generated \$561 billion in exports and fostered rapid productivity growth.

The protection afforded by fair use and other limitations and exceptions 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 and Information Technology Dependent 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 to copyrights, including the fair use of copyrighted materials, has not been studied extensively. As with the original study, the objective of this update is to fill the gap and, based on a comprehensive review of available data, estimate the economic activity and scope of industries benefiting from balanced copyright protection.

Fair use in the strict sense is an important statutory restriction on the rights conferred on original works by the U.S. Copyright Act of 1976:<sup>4</sup> According to Sec. 107, “[t]he fair use of a copyrighted work for . . . purposes such as criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research is not an infringement of copyright.”<sup>5</sup> The fair use doctrine, and other

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2. Guide on Surveying the Economic Contribution of the Copyright-Based Industries, WIPO, Geneva 2003 (“WIPO Guide”).

3. *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).

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

5. 17 U.S.C. § 107. See Einhorn at 1 and 8, fn. 5.

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> In the discussion that follows, the term “fair use” sometimes will be used as a shorthand expression referring to the full range of limitations and exceptions in U.S. copyright law.

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 growth and offset structural declines in other sectors of the economy.

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6. The complete set of limitations and exceptions studied herein are listed in Part II and described further in Appendix I.

7. See, e.g., 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).

8. 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).

9. For a survey of the productivity-related literature, see Landefeld and Fraumeni at 27–8.

Fair use of copyrighted material and other limitations and exceptions 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 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 uncertain 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 economic contribution of the Internet.

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 software interoperability,<sup>12</sup> and web hosting, which could lead to liability 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

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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 reduced-sized images copied from websites, and the display of these images in response to search queries, constituted a fair use. It reaffirmed that proposition in *Perfect 10, Inc. v. Amazon.com, Inc.*, 487 F.3d 701 (9th Cir. 2007). Similarly, 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.

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 the random access memory (RAM) 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 a vital 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 would be much smaller, but for the limitations and exceptions to copyright law. In turn, similar to the WIPO methodology, we also evaluate the secondary sectors or non-core industries that benefit from fair use.<sup>18</sup> The present endeavor

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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).

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, eds., *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.

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.

## II. DESCRIPTION OF FAIR USE BENEFITS AND INDUSTRIES

### A. The Benefits of Fair Use and Other Limitations and Exceptions to Copyright Law

Many industries benefit from provisions of U.S. copyright law that fall under the broad heading of fair use.<sup>19</sup> For example, the Other Information Services industry (NAICS 519),<sup>20</sup> which includes the subset industry, “Internet Publishing and Broadcasting and Web Search Portals,” relies on the following fair use-related provisions:

Statutory Provision	Description
102(a)	non-copyrightability of facts
102(b)	idea/expression dichotomy
107	fair use: criticism; comment; news reporting; browser, cache copies; 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

19. This section of the report was prepared with the assistance of Professor Peter Jaszi of American University Washington College of Law.

20. NAICS refers to the North American Industry Classification System, the standard used by Federal statistical agencies for classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy.

Appendix I consists of a table that illustrates how individual provisions apply to and benefit core and non-core industries.<sup>21</sup> The table represents, by 2007 NAICS category and description, those industries that depend on fair use.<sup>22</sup> 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. The accompanying glossary supplements the discussion of each fair use provision and identifies relevant court decisions.

The fourth column in the Appendix I table also summarizes and highlights the extended impact of fair use across numerous sectors, as the cross-references to other NAICS codes identify interdependent industries. For example, for the Other Information Services industry, the table lists five interdependent industries: 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).

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21. The data appendixes for this report are available online at <http://www.ccianet.org>.

22. This report uses the 2007 version of the North American Industrial Classification System (2007 NAICS). The 1997 NAICS replaced the old SIC standard. In the NAICS convention, a two-digit number refers to an industry sector. For example, code 51 refers to the Information sector. Three, four and five-digit codes refer to an industry subsector, an 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 Appendix I attached to this report lists the NAICS 2007 codes and official descriptions of the industries and industry groups considered.



## B. Fair Use Industries: Core and Non-Core

This study adopts the guidelines suggested by WIPO, and used in other studies, to evaluate the economic contribution of fair use.<sup>23</sup> However, instead of defining four distinct groups of industries as suggested in the WIPO guidelines, the study employs a simpler classification into 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. As shown in Appendix I, the core covers a broad range of industries whose output is driven increasingly by activities made possible by fair use, including many that depend extensively on the Internet.<sup>24</sup> 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 classified in the fair use core.

Other information industries depend on fair use exceptions for their ability to engage in basic activities. Additional core sectors, such as the education industry, benefit from the non-copyrightability of facts and other fair use freedoms.<sup>25</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 facilitates

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

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

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

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>26</sup>

The Internet economy is dynamic and, as it expands, influences a growing range of sectors.<sup>27</sup> The industry classification scheme used for this study follows a conservative approach and limits the core and non-core industries to the sectors listed in Appendix I. Subsequent studies, benefiting from additional data sources, revised official classifications, and available information, may show a far greater scope of core and non-core activity derived from fair use.<sup>28</sup>

### III. METHODOLOGY AND DATA SOURCES

This study quantifies the economic contribution of core and non-core industries in 2008 and 2009 based on five economic measures: revenue, value added, employment, payroll, and exports.<sup>29</sup> The original report presented data for 2002 and 2006. The first update, released in 2010, relied largely on data in the 2007 Economic Census. Issued every five years, the Economic Census provides a detailed portrait of

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26. 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 WIPO Guide at 33.

27. According to one recent study, the Internet accounted for approximately 3.8 percent of the U.S. economy in 2009, McKinsey Global Institute, *Internet matters: The Net’s sweeping impact on growth, jobs, and prosperity* (May 2011) 15.

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

29. 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.

the U.S. economy from the national to the local level, and these results are used to refine and revise the U.S. Government's existing data collection programs.<sup>30</sup> The updates in this report are based on the Economic Census, but necessarily must incorporate information from other government publications that cover years that the Economic Census does not.

A detailed discussion of the methodology and sources used to compile the data presented in this update is provided in Appendix II. Data for the key economic measures listed below – revenue, value added, payroll and employment – are compiled separately for core and non-core industries according to the structure developed with the assistance of Professor Peter Jaszi, as described above and detailed in Appendix I.<sup>31</sup> Summary tables are provided in Appendices III through VII. Data for these industries were compiled by NAICS code and organized in a database. When data from the primary source was unavailable, either due to publication lags or disclosure constraints, other official sources were consulted to estimate the missing data points.

#### **IV. ECONOMIC CONTRIBUTION OF FAIR USE INDUSTRIES**

Using the data sources and methodologies described in Appendix II, this section presents estimates of the revenues, value added, payroll, employment levels, productivity, and trade of the core and non-core industries benefiting from fair use.

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**30.** See U.S. Census Bureau, 2007 Economic Census User Guide (March 24, 2009) at 4 and 14.

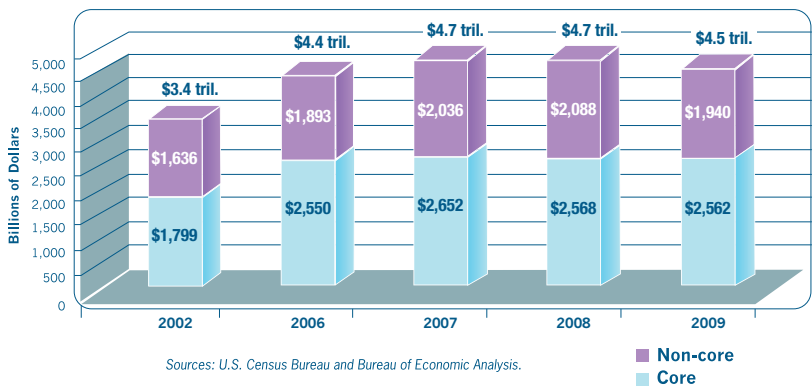
**31.** Data for exports of goods and services are too aggregated to be broken down into core and non-core components, and are presented with the two components combined.

## A. Revenue

Chart 1 illustrates the estimated revenues for the fair use-related core and non-core industries for 2002, and 2006 through 2009. Total revenue of fair use industries increased by more than one trillion dollars from \$3.4 trillion in 2002 to \$4.7 trillion in 2007 and 2008, before declining to \$4.5 trillion in 2009. The revenue for the core versus non-core group increased at a faster rate as core fair use revenues expanded by 42 percent from 2002 to 2009, while non-core revenues expanded by 19 percent.<sup>32</sup>

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

Total Revenue = \$4.5 trillion in 2009



The strong revenue growth by the core industries has been driven by growth in several industries. As shown in Appendix III, the most significant growth occurred in insurance, architectural, engineering, and legal services, electronic shopping, securities brokerage, and other financial investment activity. For non-core industries, the largest growth was in telecommunications (both wired and wireless), and computer systems and design.

32. Appendix III contains tables detailing revenue for each core and non-core industry.

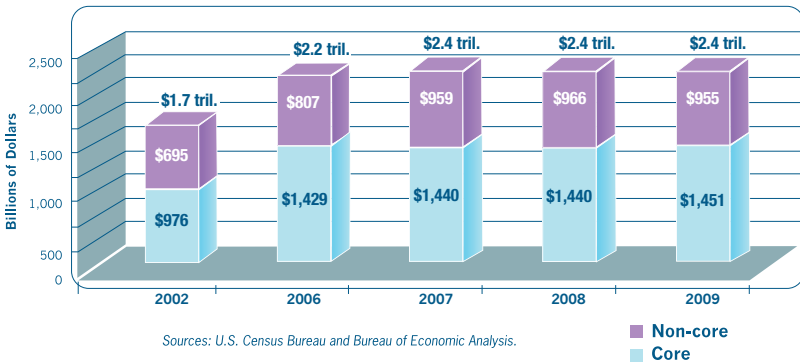
## B. Value Added

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. Value added is an important tool to measure economic growth because it does not include value added by another industry or double count own-industry value added.

As shown in Chart 2, the value added for the fair use industries defined in this report increased significantly from \$1.7 trillion in 2002 to \$2.2 trillion in 2006, reaching \$2.4 trillion in 2007 through 2009. The core industries accounted for approximately 60 percent of total fair use industry value added. The value added data show that core and non-core fair use industries represented, by 2009, more than one-sixth of current dollar U.S. GDP.<sup>33</sup> The core and non-core shares of GDP in 2009 were 10.3 percent and 6.8 percent respectively. As with revenue, the growth rate for

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

Total Revenue = \$2.4 trillion in 2009



33. U.S. GDP in current dollars was \$10.6 trillion in 2002, \$14.4 trillion in 2008, and \$14.1 trillion in 2009. For a time series of U.S. current dollar and real GDP, see <http://www.bea.gov/national/xls/gdplev.xls> and [http://www.bea.gov/industry/gdpbyind\\_data.htm](http://www.bea.gov/industry/gdpbyind_data.htm). The GDP estimates in this study are based on the latter.

core fair use industries outpaced growth in the non-core sectors. From 2002 to 2009, core value added increased by 49 percent compared to non-core growth of 37 percent.<sup>34</sup>

In total, by 2009, fair use industries accounted for 17 percent of U.S. current dollar (*i.e.*, nominal) GDP. In all, the core and non-core fair use industries contributed \$571 billion to U.S. GDP growth during the 2002 to 2007 period, accounting for 17 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. As noted in the previous update of this report, in many of the fair use industries, prices declined during the 2002 to 2007 period, meaning that the real growth of value added was even larger than implied by the current dollar growth. When inflation is taken into account, the growth contribution of the core industries to U.S. output growth during 2002 to 2009 was 19.7 percent, more than double their weight in nominal GDP in 2002.<sup>35</sup>

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34. Appendix IV contains tables detailing value added for core and non-core industries.

35. The estimation procedure for the core contribution to real GDP growth is shown in Appendix V.

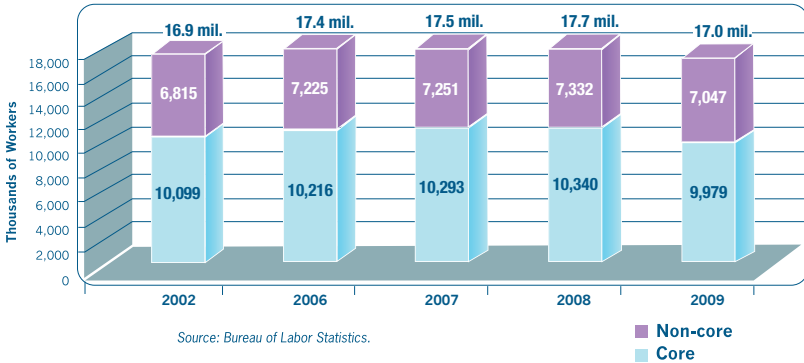
### C. Employment and Payroll

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 through 2009. Employment related to fair use increased from 16.9 million in 2002 to 17.7 million in 2008, before falling back to 17.0 million in 2009.

Employment in the core industries increased from 10.1 million employees in 2002 to 10.3 million in 2008.<sup>36</sup> Employment in the non-core industries expanded from 6.8 million employees in 2002 to 7.3 million workers in 2008. In 2009, total employment in core and non-core industries alike fell back close to their 2002 levels. In 2009, employment in fair use industries accounted for 13 percent of total non-farm employment in the United States.<sup>37</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 of Fair Use Industries**

Total Employment = 17.0 million in 2009



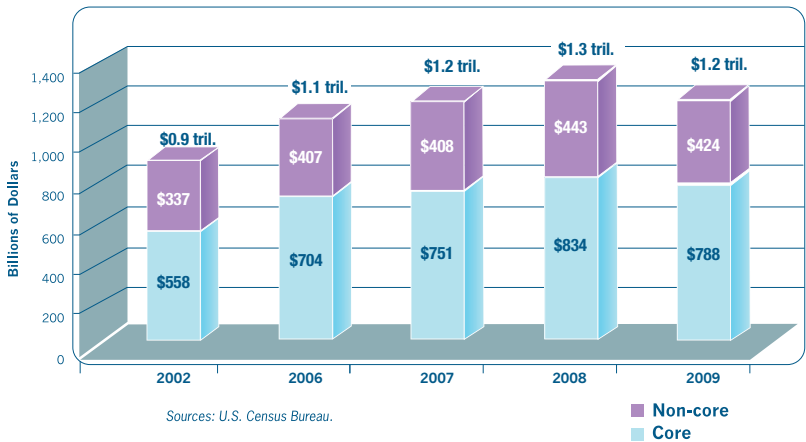
36. Appendix VI contains tables detailing employment for each core and non-core industry.

37. Data on employment by industry are available at <http://www.bls.gov/ces/home.htm#data>.

While employment levels have been relatively stable, total fair use industry payroll has been expanding. Chart 4 shows that total fair use industry payroll increased by 43 percent from approximately \$900 billion in 2002 to nearly \$1.3 trillion in 2008, before declining to \$1.2 trillion in 2009. In 2002, core industry payroll was \$558 billion, accounting for 62 percent of total fair use payrolls. During 2008-2009, core industry payroll averaged \$811 billion, accounting for 65 percent of total fair use payroll. From 2002 to 2009, the payroll of core industries grew by 41 percent, while the payroll of non-core industries grew by 26 percent.<sup>38</sup> In real terms, the payroll of core fair use industries increased by 18 percent from 2002 to 2009, while the payroll of non-core industries grew by 6 percent.<sup>39</sup>

**Chart 4. Payroll Fair Use Industries**

Total Payroll = \$1.2 trillion in 2009



38. Appendix VII contains tables detailing payroll for each core and non-core industry.

39. Payroll values were deflated by the consumer price index for urban consumers (series ID CUUR0000SA0,CUUS0000SA0).



The combination of stable employment levels and increasing payrolls has produced a sizeable increase in payroll per employee at fair use-related firms. Table 1 below indicates that payroll per employee expanded from approximately \$53,000 per year in 2002 to an average of nearly \$72,000 in 2008 and 2009. Payroll per employee in the core industries is even higher, averaging nearly \$80,000 in 2008 through 2009.<sup>40</sup>

**Table 1. Payroll Per Employee of Fair Use Related Industries**

Dollars per employee					
	2002	2006	2007	2008	2009
<b>Core</b>	55,288	68,907	72,946	80,703	78,968
<b>Non-core</b>	49,407	56,292	56,200	60,479	60,127
<b>Total</b>	52,919	63,681	66,024	72,312	71,170

**Sources:** Authors' estimates based on data from the U.S. Census Bureau and Bureau of Labor Statistics.

#### 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 labor, by increasing real hourly wages, for example, it is necessary to increase productivity.<sup>41</sup> Rising productivity is therefore the key to long-term improvements in living standards.

40. Because the Census data do not include payroll data for NAICS 5251 (insurance and employee benefit funds), this industry was excluded from the calculations.

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

A large body of work attributes the higher productivity growth during and after the late 1990s to Information Technology (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>42</sup>

Value added per employee is a common indicator used to measure labor productivity. Table 2 contains estimates of labor productivity for the core and non-core fair use industries.

The data in Table 2 highlights the very strong productivity growth in both the core and non-core industries. From 2002 to 2009, core and non-core productivity increased by 50 percent and 33 percent, respectively. On an inflation-adjusted basis, real productivity of core and non-core industries expanded 25 percent and 15 percent, respectively.

**Table 2. Value Added Per Employee of Fair Use Related Industries**

Dollars per employee					
	2002	2006	2007	2008	2009
<b>Core</b>	96,681	139,863	139,943	139,260	145,402
<b>Non-core</b>	101,954	111,736	132,263	131,778	135,549
<b>Total</b>	98,806	128,211	136,769	136,156	141,324

**Sources:** Authors' estimates based on data from the U.S. Census Bureau, Bureau of Economic Analysis, and Bureau of Labor Statistics.

42. See, e.g., 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 Landenfled and Barbara M. Fraumeni, "Measuring the New Economy," *Survey of Current Business* (March 2001) at 23-39.

As the employment rate increased during the recession, productivity grew an additional 3 to 4 percent. Further, fair use industries have led U.S. growth as productivity in the fair use economy of \$141,000 per employee greatly exceeds economy-wide productivity, which was approximately \$108,000 per employee in 2009.<sup>43</sup>

## E. Trade

The globalization of the U.S. economy has been one of the primary economic trends in recent decades. U.S. trade in goods and services now accounts for nearly 25 percent of U.S. GDP.<sup>44</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 2008 and 2009, the United States surplus in services trade averaged \$151 billion.<sup>45</sup>

Exports are an increasingly important source of sales for firms benefiting from fair use.<sup>46</sup> U.S. manufacturers have a long history in foreign markets, but many Internet firms are relatively new exporters. Due to international differences in copyright law and the importance of the Internet to the U.S. economy, U.S. trade officials have incorporated certain ISP safe harbors 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.

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43. The national total is based on current dollar GDP divided by the annual average of seasonally adjusted monthly non-farm employment levels reported by BLS (series ID CEU0000000001).

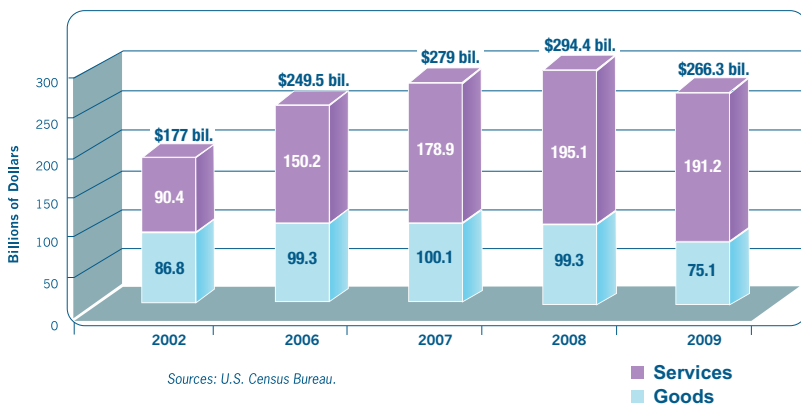
44. See Bureau of Economic Analysis, Gross Domestic Product: Table 1.1.5 (Last Revised on June 24, 2011). Exports of goods and services in 2009 were \$1,578.4 billion, imports were \$1,964.7 billion, and U.S. current dollar GDP was \$14,119 billion.

45. Bureau of Economic Analysis, US International Services, Table 1 (last modified May 23, 2011). U.S. private service exports in 2008-09 averaged \$501 billion, while service imports averaged \$350 billion.

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

Chart 5 shows that estimated fair use industry exports increased by 64 percent from \$179 billion in 2002 to \$294 billion in 2008.<sup>47</sup> Fair use exports fell by nearly \$30 billion in 2009 but goods export data and general worldwide economic growth suggest that fair use exports likely rebounded in 2010.<sup>48</sup> Due to the high level of aggregation of services trade data, it is not practical to distinguish between core and non-core exports. Accordingly, Chart 5 highlights exports of total fair use goods and services.

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



Unlike overall exports, which are dominated by goods, fair use industry exports are oriented toward services. Financial services constitute the largest portion of fair use service exports, accounting for 30 percent of total services exports in 2008-2009. Other leading categories with significant export growth include management and consulting services, R&D and technical services, and education. Emblematic of the

**47.** Appendix VIII contains tables detailing fair use exports of goods and services by category.

**48.** As of the date of this report, 2010 export data for goods are available and show that fair use exports increased by 15 percent from \$75 billion in 2009 to \$86 billion in 2010. Services export data for 2010 are not yet available but also are expected to show a significant increase.

dramatic growth of the Internet as a business tool, exports of trade-related services, including Internet or online services, rose nine-fold from \$578 million in 2002 to an average of more than \$5 billion in the 2008 to 2009 period, the most rapid growth among all the industries represented. On the goods side, semiconductors, computers, and communications equipment accounted for more than eighty percent of fair use industry exports.

## V. 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 information technology revolution and the Internet have transformed how information is transmitted and used.<sup>49</sup> As a result, the U.S. economy has benefited tremendously 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, as well as major users.

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49. Brian Kahin and Dominique Foray, eds., *Advancing Knowledge and the Knowledge Economy* (MIT Press, 2006) at ix.

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 2008 and 2009 accounted for an average of \$4.6 trillion in revenues and \$2.4 billion in value added, roughly 17 percent of U.S. GDP. It employed more than 17 million people and supported an annual payroll of more than \$1.2 trillion. Additionally, the fair use economy generated \$561 billion in exports and fueled 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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# 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 Publ'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. *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. *Perfect 10, Inc. v. Amazon.com, Inc.*, 487 F.3d 701 (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. *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.

### *17 U.S.C. §§ 110(1)–110(2) (displays and performances in educational contexts)*

The Copyright Act permits the performance and display of copyrighted works in the course of face-to-face teaching activities as well as distance education.

### *17 U.S.C. § 112 (ephemeral recordings)*

Under the Copyright Act, a radio station may make ephemeral copies of sound recordings for use in its own transmissions in its local service area.

### *17 U.S.C. § 114(a) (exception to sound recording performance right)*

Under the Copyright Act, there is no performance right in sound recordings, except for performances by digital audio transmission, e.g., webcasting.

### *17 U.S.C. § 117(a) (backup, essential step copies)*

The Copyright Act permits the owner of a copy of a computer program to make a copy of that program: as an essential step in the utilization of the program in conjunction with a computer; or for archival purposes.

### *17 U.S.C. § 117(c) (machine maintenance or repair)*

The Copyright Act permits the owner or lessee of a computer, for purposes of maintaining or repairing that computer, to make or authorize the making of a copy of a computer program which is made solely by virtue of activating the computer.

### *17 U.S.C. §§ 302–304 (copyright term)*

Consistent with the Constitution's mandate that Congress may provide authors with exclusive rights for "limited times," copyrights expire after a statutory period and enter the public domain. *Eldred v. Ashcroft*, 537 U.S. 186 (2003).

### *17 U.S.C. § 512 (service provider safe harbors)*

Section 512 of Title 17, which originated in the Digital Millennium Copyright Act, limits the copyright remedies available against online service providers engaged in the following activities: transitory communications, system caching, storage of information on systems or networks at direction of users, and information location tools.

### *Sony principle*

Under *Sony Corp. of Am v. Universal City Studios*, 464 U.S. 417 (1984), the sale of an article of commerce that may be used for both infringing and non-infringing uses will not lead to secondary infringement if the product is capable of substantial noninfringing use.



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