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No. 15-866

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IN THE  
*Supreme Court of the United States*

STAR ATHLETICA, L.L.C.,

*Petitioner,*

v.

VARSIY BRANDS, INC., ET AL.,

*Respondents.*

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On Petition for a Writ of Certiorari to the United  
States Court of Appeals for the Sixth Circuit

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**BRIEF OF *AMICI CURIAE* FORMLABS INC.,  
MATTER AND FORM INC., AND  
SHAPEWAYS, INC. IN SUPPORT OF  
PETITIONER**

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Phillip R. Malone  
*Counsel of Record*  
Jeffrey T. Pearlman  
Juelsgaard IP and  
Innovation Clinic  
Mills Legal Clinic at  
Stanford Law School  
559 Nathan Abbott Way  
Stanford, CA 94305  
(650) 497-9443  
jipic@law.stanford.edu

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## TABLE OF CONTENTS

TABLE OF AUTHORITIES.....	iii
INTEREST OF AMICI CURIAE .....	1
SUMMARY OF ARGUMENT .....	3
ARGUMENT .....	5
I. A Single, Predictable Test for Conceptual Separability Is Critical Beyond the Apparel Business, Particularly for Innovative Industries Such as 3D Printing.....	5
A. 3D Printing Is a Revolutionary Process That Is Transforming the Manufacturing Industry. ....	5
B. Prevailing Uncertainty About the Application of Copyright Law to 3D Printing Disrupts the Balance of Copyright Law.....	9
II. The Current Circuit Split Surrounding Conceptual Separability Is Significant and Chills Innovation and Creativity. ....	11
A. Nearly Forty Years After the Copyright Act of 1976, Lower Courts Have Still Failed to Provide a Single, Coherent Test for Conceptual Separability.....	12
B. The Circuits Also Disagree on How to Resolve Questions Common to Their Conflicting Tests. ....	13
C. The Present Circuit Split Will Hinder Innovation and Market Engagement Among a Diverse Group of Participants in the 3D Printing Industry, from Service Providers to Individual Users.....	16

CONCLUSION .....19

## TABLE OF AUTHORITIES

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- Shira Perlmutter, *Conceptual Separability and Copyright in the Designs of Useful Articles*, 37 J. Copyright Soc'y U.S.A. 339 (1990) .....13

## INTEREST OF AMICI CURIAE

Amici are a collection of companies engaged in the 3D printing industry. They submit this brief to highlight the importance of establishing a single test for determining conceptual separability under copyright law.<sup>1</sup>

Formlabs Inc. is a provider of advanced desktop 3D printing machines, materials, and software. Formlabs' customers include engineers, designers, artists, and many other professionals authoring 3D content who use Formlabs 3D printers to print and share their creations in tangible form. Professional users of 3D printing increasingly choose to both make their content available to other users and utilize 3D content from other professionals to inspire new works. The penumbra of liability cast by unclear standards risks chilling the resulting increases in productivity and creativity. Professionals authoring and printing 3D content, and the companies that support their work, would benefit from increased clarity regarding which aspects of their work are protected and which aspects may be reused in new creative works.

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<sup>1</sup> Pursuant to Rule 37.2(a), counsel for both parties received notice of intent to file this brief at least 10 days before its due date. The parties have consented to the filing of this brief; their written consents are being filed herewith. No counsel for a party authored this brief in whole or in part, and no party or counsel for a party made a monetary contribution intended to fund its preparation or submission. No person other than the *amici* or their counsel made a monetary contribution to the preparation or submission of this brief.

Matter and Form Inc. is a leading developer of consumer-friendly 3D hardware and software. Matter and Form Inc.'s desktop 3D scanner and smartphone attachment, Bevel, allow everyday consumers to create accurate digital 3D representations of people, places, and things. These digital models can then be made available online through the company's cloud platform Cashew, and 3D printed through services such as Shapeways. Unfortunately, uncertainty in the law of separability means that users of 3D scanners and cloud sharing platforms cannot be sure whether they can lawfully create and share digital and physical 3D replications of real-life objects. As the capacity to 3D scan and 3D print becomes increasingly available to everyday consumers, a clear copyright test is the only way to ensure that companies and customers can safely unlock the full value of this new technology.

Shapeways, Inc. is a 3D printing marketplace and service company. It has printed and sold millions of 3D-printed objects through its platform. Shapeways submits this brief to highlight the importance of determining a single test for analyzing copyright separability. Widespread access to 3D printing empowers more and more individuals to creatively interact with objects that combine copyrightable and non-copyrightable elements. As those interactions increase, along with disputes about copyright claims, it will become increasingly important to the hundreds of thousands of individuals and companies that are at risk of liability from unclear standards to have a single test that will allow them to understand which elements of a given 3D printed object are protected by copyright and

which are not. As the world's leading 3D printing marketplace, Shapeways and its users will often be called on to navigate the landscape of conceptual separability and would benefit from the certainty and clarity of a single test.

### SUMMARY OF ARGUMENT

This case presents a clear conflict among the circuits on an important substantive matter of copyright law that justifies this Court's review.

The present circuit split surrounding conceptual separability doctrine will, if left unresolved, have effects reaching far beyond the apparel industry. The already large and rapidly expanding 3D printing industry is particularly sensitive to uncertainty about the copyright protection of designs and objects. 3D printing, also known as additive manufacturing, allows users to use digital files to produce tangible objects in a manner that is often faster and more efficient than conventional fabrication techniques. In some cases, 3D printing even enables the production of shapes and forms that would be impossible to create using less revolutionary methods. The 3D printing industry has had a democratizing effect on manufacturing, allowing individuals to customize designs for their own use and greatly lowering startup costs for new entrants in markets for the design and sale of a wide variety of objects.

These advancements are threatened by the current fractured state of copyright law on objects combining functional and artistic elements. And 3D printing, like other dynamic industries that rely heavily on innovation, is particularly sensitive to



uncertainty in copyright law. Uncertainty over the line between copyrightable and noncopyrightable works can lead to over-claiming and over-categorization of material as copyrightable, upsetting the balance struck by Congress between the interests of rights holders and the societal benefits from a vibrant public domain.

Circuit court decisions since the introduction of the idea of conceptual separability in the Copyright Act of 1976 have created a conflicting, convoluted body of law. The opinion below only serves to confuse the issue further. There now exist as many as ten separate methods for evaluating conceptual separability, and the circuits do not even agree on how to answer questions common to their different tests.

This split generates exactly the sort of legal uncertainty that disrupts the balance of copyright law. The need to navigate the complex legal regime created by the current circuit split threatens to chill innovation and creativity by, and impose significant costs on, individuals and small companies that lack in-house legal capabilities or resources for outside legal guidance. The current state of the law increases barriers to entry for market participants who stand to take greatest advantage of 3D printing. The confusion surrounding the conceptual separability doctrine will likely lead to elevated levels of litigation, and, where the law differs from circuit to circuit, affect both the reach of copyright holders' rights and the size of markets available to manufacturers.

This Court should grant certiorari to resolve the current circuit split and establish a single, clear test

for conceptual separability, consistent with purpose of the Constitution's copyright clause and congressional intent.

## **ARGUMENT**

### **I. A Single, Predictable Test for Conceptual Separability Is Critical Beyond the Apparel Business, Particularly for Innovative Industries Such as 3D Printing.**

This case is about more than cheerleading uniforms. Petitioner warns the Court that the opinion below creates uncertainty for the \$330 billion apparel market. Pet. App. 39. Other industries are also sensitive to uncertainty in the conceptual separability doctrine. 3D printing is already a significant industry and is expanding exponentially. Continued confusion in this area of copyright law skews the balance between innovators and those claiming rights, hindering development in this growing field.

#### **A. 3D Printing Is a Revolutionary Process That Is Transforming the Manufacturing Industry.**

3D printing transforms digital files into physical objects. Any user can send the digital blueprint of a bowl to a 3D printer and it will create a physical bowl. To begin, a user designs an object on a computer, using the same design programs that an architect or an engineer might use, or scans a preexisting object with a 3D scanner. The digital file is then sent to a 3D printer which creates the object

in physical space. The printer achieves this through an additive manufacturing process, precisely adding layer upon layer of material until an object is created to the design's specifications. As with traditional 2D printers, this sort of physical creation can happen simultaneously and identically by users around the world.

In recent years, the use of 3D printing has dramatically increased due to a combination of factors, including the expiration of foundational patents and the creation of online hubs for 3D printers and 3D printable objects.<sup>2</sup> This, in turn, has decreased the cost of 3D printing and dramatically increased the number of people who are designing and creating 3D printable objects. Established companies, such as Unilever and BMW, have turned to 3D printing to create product prototypes. *Maximize Business Potential with Direct Digital Manufacturing*, Stratasys Asia Pacific Newsletter (Jul. 2015), available at <http://www.stratasys.com/corporate/newsroom/asia-pacific-japan-newsletter/apj-newsletter-no-5>.<sup>3</sup> These businesses prefer 3D printing to traditional manufacturing because it is cost effective, errors can be identified

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<sup>2</sup> By 2018, the global 3D printing industry is projected to grow to \$16.2 billion. Louis Columbus, *Roundup of 3D Market Forecasts and Estimates, 2014*, Forbes.com (Aug. 9, 2014, 7:55 PM), <http://www.forbes.com/sites/louiscolombus/2014/08/09/roundup-of-3d-printing-market-forecasts-and-estimates-2014/>.

<sup>3</sup> Though not the focus of this brief, companies such as these will continue to benefit from clarity in copyright law that promotes innovation across the rest of the 3D industry.

and fixed quickly, and improvements can be tested and added without the need to physically manufacture every iteration. Neal Katyal, *Disruptive Technologies and the Law*, 102 Geo. L.J. 1685, 1687 (2014). Start-up businesses also benefit from the “ease of experimentation” that 3D printing allows, along with the limited financial risk in creating prototypes. *Id.* The 3D printing process offers unique advantages to traditional manufacturing in the types of physical shapes that can be produced, accessibility to the public, ease of customization, and low object creation startup costs. It also allows objects to be created “on demand,” reducing or eliminating the need for keeping large stocks of items for sale. Ultimately, 3D printing has the potential to bring some overseas manufacturing back to the United States. *Id.*

At the same time, hundreds of thousands of individuals on Shapeways alone have used 3D printing to create millions of objects for their own enjoyment, use, and sale. *Funding The Rise of Creative Commerce*, Shapeways.com (June 19, 2012), <http://www.shapeways.com/blog/archives/1442-Funding-the-Rise-of-Creative-Commerce.html>. These objects can be printed through third party platforms, such as Shapeways, or with a personal, at-home 3D printer. Davis Doherty, *Downloading Infringement: Patent Law as a Roadblock to the 3D Printing Revolution*, 26 Harv. J.L. & Tech. 353, 357 (2012). Individuals can create and print their own virtual design file, or print an already created design file that has been made available by a third party. Large and growing numbers of individuals make part or all of their income from selling their 3D printed objects

or virtual design files on online marketplaces, such as Shapeways and Etsy.

The types of objects created by 3D printing are incredibly diverse, and users can work with a wide variety of materials, including precious metals, ceramic, or plastic. Objects that have been fabricated using 3D printing technology include everyday objects including jewelry, tools, lawn mowers, shower heads, cookie cutters, and myriad others. In the medical field, 3D printers have been used to create medical drugs, fabricated human skin, and a titanium pelvis. Ben Farmer, *Surgeon creates pelvis using 3D printer*, The Telegraph (Feb. 10, 2014), available at <http://www.telegraph.co.uk/news/health/10627556/Surgeon-creates-pelvis-using-3D-printer.html>. Users can create objects that were previously prohibitively expensive or unobtainable, including customized guitars and precise replicas of Egyptian artifacts made available by the British Museum. James Vincent, *British Museum releases scans of artefacts to let you 3D print your own museum at home*, The Independent (Nov. 4, 2014), available at <http://www.independent.co.uk/life-style/gadgets-and-tech/british-museum-releases-scans-of-artefacts-to-let-you-3d-print-your-own-museum-at-home-9837654.html>.

Ultimately, using digital technologies to make physical objects greatly increases the types of physical objects that people can create, while vastly increasing the number of people who can create them. The increasing accessibility of 3D printing encourages more people to share, distribute, and sell their physical creations to the global audience of the Internet.

## **B. Prevailing Uncertainty About the Application of Copyright Law to 3D Printing Disrupts the Balance of Copyright Law.**

The application of copyright law to 3D printing is sometimes clear. 3D printed objects that are purely ornamental and nonfunctional, such as an exact replica of a sculpture or a complex jewelry design, are protectable by copyright; designs that are purely functional useful articles, such as a basic wrench or a replacement gear, are not. In intermediate cases, however, the application is uncertain. A significant percentage of 3D printed objects combine utilitarian and artistic elements in complex ways. These mixed-use objects engage copyright in a more involved manner and require distinguishing between the copyrightable subject matter and the non-copyrightable utilitarian elements.

Mixed-use objects are not new: bike racks, mannequins, belt buckles, and beauty school heads have all been considered by the courts. What is new is that 3D printing allows millions of people to produce mixed-use objects at a volume and speed that is revolutionary. Just as technology made it easy to create and share works clearly protected by copyright such as words, photographs, movies, and sounds online, 3D printing enriches the experiences that everyday people have with physical objects that combine both copyrightable and non-copyrightable elements. Individuals now have the ability to physically create their imagined objects “on demand,” for their own use or to sell globally with the click of a button.

As the 3D printing industry expands, so will the number of copyright claims and disputes connected to physical objects that incorporate both creative and functional parts. Since Congress enacted the Copyright Act of 1976, the law has recognized that the creative parts of useful articles are copyrightable to the extent that they are either physically or conceptually separable from the object itself. Today, there are numerous inconsistent, conflicting tests for conceptual separability that create a great deal of uncertainty and confusion for determining which parts of these objects qualify for copyright protection. The result is that both practitioners steeped in the law and legally unsophisticated users engaged in 3D printing cannot reliably identify which parts of a mixed object might be protected by copyright. This uncertainty burdens the growing 3D printing industry and its users with a lack of clarity that ultimately disrupts the balance of copyright law.

In the face of this uncertainty, creators of objects often make the understandable choice to over-assume copyright protections for those objects and assert overbroad copyright claims against individuals or companies that are 3D printing similar objects. Objects and elements that should, under a proper reading of copyright law, be beyond protection are clouded by uncertainty, and subsequent creativity and innovation are chilled or thwarted. This tendency to muddle the distinction between copyrightable and non-copyrightable objects and elements will only be exacerbated as more and more startups, artists, innovators and everyday people begin to use 3D printing.

The aggregate impact of such choices is to undermine the carefully calibrated scope of copyright protection created by Congress. Ambiguity pushes the scope of copyright protection outward, unjustifiably stifling expression by bringing objects and elements ineligible for copyright protection within its reach. The public ultimately is deprived of access to creativity and objects that should rightfully be in the public domain or be, at the most, be protected only by patent.

## **II. The Current Circuit Split Surrounding Conceptual Separability Is Significant and Chills Innovation and Creativity.**

In the forty years since the enactment of the Copyright Act of 1976, courts have applied several conflicting tests for conceptual separability and generated irreconcilable differences in their interpretations of the statute. The current fractured state of circuit law regarding the separability of functional and artistic elements prevents individuals and companies engaged in the 3D printing industry from being able to accurately analyze the landscape of copyright protection. It also prevents responsible rights holders from properly exercising their rights and responsible designers from creating and innovating without interference from baseless but difficult-to-assess claims. Uncertainty inhibits the natural exchange of ideas as 3D printing becomes cramped by overreaching copyright protection. As this industry expands, trying to navigate multiple, conflicting rules for conceptual separability will chill innovation and creativity, increase litigation over copyrightability, disrupt the nationwide marketplace



for mixed-use objects, and impose the costs of these inefficiencies on consumers.

**A. Nearly Forty Years After the Copyright Act of 1976, Lower Courts Have Still Failed to Provide a Single, Coherent Test for Conceptual Separability.**

The Copyright Act of 1976 introduced a new definition establishing the extent to which components of the designs of useful articles can be protected by copyright:

The design of a useful article, as defined in this section, shall be considered a pictorial, graphic, or sculptural work only if, and only to the extent that, such design incorporates pictorial, graphic, or sculptural features that can be identified separately from, and are capable of existing independently of, the utilitarian aspects of the article.

17 U.S.C. § 101.

The House Judiciary Committee report explained that, under this definition, “[u]nless the shape of an automobile, airplane, ladies' dress, food processor, television set, or any other industrial product contains some element that, *physically or conceptually*, can be identified as separable from the utilitarian aspects of that article, the design would not be copyrighted under the bill.” H.R. Rep. No. 94-1476 at 55 (1976), *reprinted in* 1976 U.S.C.C.A.N. 5659 (emphasis added). Notably, this suggested “the possibility of copyright protection for an element that can be identified as separable from the useful article not physically but only conceptually . . . open[ing]

new vistas of protection, blurring the dividing line between art and non-art, and set[ting] the stage for subsequent analysis.” Shira Perlmutter, *Conceptual Separability and Copyright in the Designs of Useful Articles*, 37 J. Copyright Soc'y U.S.A. 339, 351 (1990).

The dividing line has certainly been blurred. Today, nearly forty years after the Copyright Act was passed, there is no clear rule for determining which parts of many physical objects that mix decorative and useful elements qualify for copyright protection. The Sixth Circuit’s opinion below correctly describes the highly fractured state of the law, enumerating no fewer than nine distinct tests for conceptual separability, at least four of which have been established as law in various circuit court opinions. See Pet. App. 30a-33a. The Sixth Circuit then declines to apply any of these established tests, instead developing its own “hybrid approach” which “ask[s] a series of questions that are grounded in the text of the Copyright Act.” *Id.* at 37a. Judge McKeague’s dissent rightly describes the state of the law as “a mess” and warns that “until we get much-needed clarification, courts will continue to struggle and the business world will continue to be handicapped by the uncertainty of the law.” *Id.* at 57a (McKeague, J., dissenting).

### **B. The Circuits Also Disagree on How to Resolve Questions Common to Their Conflicting Tests.**

As noted by the Sixth Circuit, the Second and Fourth Circuits have also used their own versions of “hybrid” approaches that combine multiple tests in order to assess conceptual separability. See *id.* at 36a. These circuits disagree not only about how to

structure their hybrid tests but also about how to answer questions of law central to all of these tests.

The opinion below asserts that “[p]ortray[ing] the appearance of the [useful] article’ and ‘convey[ing] information’ are two utilitarian aspects that courts may not use to determine whether pictorial, graphic, or sculptural features are separable,” citing the statutory definition of a “useful article.” *Id.* at 38a. The statute provides: “A ‘useful article’ is an article having an intrinsic utilitarian function that is not merely to portray the appearance of the article or to convey information.” 17 U.S.C. § 101. Yet the court below attempts to make a logical leap from the statutory requirement that a useful article must have a use that goes *beyond* portraying an appearance or conveying information to a *prohibition* on considering these utilitarian aspects in the separability analysis.

The court further claims that “this approach is consistent with the holdings of [its] sibling circuits,” Pet. App. 38a, and cites to cases in the Second and Fourth Circuits, including *Hart v. Dan Chase Taxidermy Supply Co.*, where the Second Circuit ruled “that fish mannequins, even if considered ‘useful articles,’ are useful insofar as they ‘portray the[ir] appearance,’” making them copyrightable. 86 F.3d 320, 323 (2d Cir. 1996). In a later case, however, the Second Circuit explicitly explains that it has construed the statutory phrase “‘portrays the appearance’ . . . narrowly to identify only a small category of *items whose sole usefulness* resides in their appearance.” *Jovani Fashion, Inc. v. Fiesta Fashions*, 500 F App’x 42, 45 (2d Cir. 2012) (emphasis added).

In their conflicting interpretations of Section 101's separability requirement, the Second and Sixth Circuits disagree, fundamentally, on how to define the breadth of the utilitarian aspects of useful articles. In the present case, the Sixth Circuit suggests that "[c]heerleading uniforms have 'an intrinsic utilitarian function,' namely to 'cover the body, wick away moisture, and withstand the rigors of athletic movements.'" Pet. App. 43a. The court rejects any utilitarian aspects that may convey information. *Id.*

The Second Circuit, however, takes a somewhat more nuanced approach to clothing as a useful article. In *Jovani*, it rejects the idea that a prom dress's utilitarian function is limited to "simply 'covering the body.'" 500 F App'x at 45. Rather, it asserts that such a "narrow statement of a garment's function is not supported by our precedent, which recognizes that clothing, in addition to covering the body, serves a 'decorative function,' so that the decorative elements of clothing are generally 'intrinsic' to the overall function, rather than separable from it." *Id.*

The fractured state of the law surrounding conceptual separability is fundamentally at odds with congressional intent in passing the Copyright Act of 1976 to create a "single system of Federal statutory copyright." H.R. Rep. No. 94-1476 at 129 (1976), *reprinted in* 1976 U.S.C.C.A.N. 5659. The House Judiciary Committee's explanation of the need to replace an "anachronistic, uncertain, impractical, and highly complicated" dual system of state common law and federal statutory law with a single federal system of copyright law applies equally to the need

for uniform, predictable rules determining separability:

One of the fundamental purposes behind the copyright clause of the Constitution, as shown in Madison's comments in *The Federalist*, was to promote national uniformity and to avoid the practical difficulties of determining and enforcing an author's rights under the differing laws and in the separate courts of the various States. Today, when the methods for dissemination of an author's work are incomparably broader and faster than they were in 1789, national uniformity in copyright protection is even more essential than it was then to carry out the constitutional intent.

*Id.* What was becoming apparent in 1976—that advancements in technology had significantly increased the need for national uniformity in copyright law—is certain today. With the advent of the Internet and the continuing development of the 3D printing industry, the type of ambiguity and conflict present in the current state of conceptual separability law increasingly frustrates both the purpose of the copyright clause of the Constitution and the intent of the Copyright Act of 1976.

**C. The Present Circuit Split Will Hinder Innovation and Market Engagement Among a Diverse Group of Participants in the 3D Printing Industry, from Service Providers to Individual Users.**

The present high degree of uncertainty around the copyrightability of objects with mixed functional

and artistic aspects, if not resolved, will harm various innovative technologies, including the burgeoning 3D printing industry, in a number of ways. Generally, uncertainty about what is and is not copyrightable material will lead to over-claiming and over-categorization of material as protected, in turn limiting the breadth and depth of the public domain and stifling innovation. *See supra* Section I.B.

The challenge of attempting to understand and navigate a confused and conflicting set of tests for conceptual separability, particularly for businesses that operate on a nationwide or global basis, imposes substantial barriers to entry and operation, especially in a nascent industry where many of the market participants are individual artists and entrepreneurs, not large corporations with in-house legal departments. Faced with the daunting task of determining whether or not they are at risk of violating copyright law, many potential creators of 3D printable content may stay out of the market entirely or may curtail the scope of their creativity.

Even for users and businesses that are legally sophisticated, the lack of a single, clear test will lead not only to constrained activity and innovation, but to increased levels of litigation, the costs of which will ultimately be a serious drag on the industry and on consumers. Litigation costs aside, differences in the substantive copyright law from circuit to circuit, even if understood, will have negative impacts on 3D printing and other innovative industries. Potential creators of what might be copyrightable material in one circuit may have less incentive to develop their works if they fear that their works may be found to be not copyrightable in other circuits. Users of

material that is in the public domain in one circuit may be restricted to selling their goods in smaller markets if their use could be considered an infringement in other circuits.

The impact of copyright law and, in particular, of the test for conceptual separability, on the 3D printing industry is a significant and long-standing concern. As early as 2013, a white paper for lay users on 3D printing and copyright law from Public Knowledge identified the difficulties posed by different, shifting tests in different circuits. It concluded that “[w]hile some cases are straightforward, the outcome of others will depend on the circuit, judge, and even individual lawyering.” Michael Weinberg, Public Knowledge, *What’s the Deal with Copyright and 3D Printing*, 13 (Jan. 2013), available at [https://www.publicknowledge.org/files/What's%20the%20Deal%20with%20Copyright\\_%20Final%20version2.pdf](https://www.publicknowledge.org/files/What's%20the%20Deal%20with%20Copyright_%20Final%20version2.pdf). Three years later, the Sixth Circuit’s decision below only muddies the waters further. The impact of this doctrinal confusion and legal uncertainty on growth of and innovation in 3D printing will become increasingly pronounced as the technology and the industry continue to expand.

The present case presents a critical opportunity to resolve this uncertainty and remove the chill it creates on innovation. Whether or not the Sixth Circuit’s approach below is inferior to the approaches of other circuits and contrary to congressional intent, *see* Pet. App. 27-33, even the uniform nationwide application of its relatively convoluted hybrid approach would be significantly better for innovation and for the 3D printing and other technology

industries than the conflicting array of tests that market participants must now navigate.

The ability of users, innovators, 3D printing companies, and copyright owners to rely on a single, predictable test for conceptual separability is of great importance. This case is the ideal vehicle for the Court to resolve the damaging circuit split and provide that consistency and predictability.

### CONCLUSION

This Court should grant certiorari to resolve the present circuit split and ensure that the development of innovative technologies and industries such as 3D printing is not hampered by the ongoing conflicts and confusion in conceptual separability doctrine.

Respectfully submitted,

Phillip R. Malone  
*Counsel of Record*  
Jeffrey T. Pearlman  
Juelsgaard IP and  
Innovation Clinic  
Mills Legal Clinic at  
Stanford Law School  
559 Nathan Abbott Way  
Stanford, CA 94305  
(650) 497-9443  
jipic@law.stanford.edu

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