PRODUCING VIDEO GAMES THROUGH CROWDSOURCING: LEGAL, ARTISTIC, AND SOCIOECONOMIC LIMITATIONS ON THE POTENTIAL

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I. Introduction

In 2009, video game publisher Roundhouse Interactive (Roundhouse) joined with video game developer Frima Studio to develop The Game Cartel. As in the development of most video games, the publisher is responsible for advertising and building excitement for the video game while the developer is responsible for developing the ideas and concepts for a game and programming those ideas into a playable video game. Uncharacteristically, neither Roundhouse nor Frima Studio knew any details about the video game that the companies would make together. In an unprecedented move, Roundhouse is taking the video game industry into uncharted territory by providing video game consumers with the ability to direct the video game production process from the initial stages. Roundhouse’s plan is to establish a community of 100,000 video game consumers, called “the cartel,” that will decide in democratic fashion everything from the name of the game, to the genera of game, to the storyline, to the controls. Then, the community’s choices will go to Frima Studios to be implemented in the game. Roundhouse plans to provide the community between five and eight choices to vote on, per issue Roundhouse sends to the community, and the majority will rule. Additionally, each member of the community must pay $50 up front for admission into the cartel, which will provide the

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3 Terdiman, supra note 1.
4 Id.
5 Id.
6 Id.
money Roundhouse needs to get the game off the ground.\textsuperscript{7} Roundhouse hoped to deliver a console game by December 2010.\textsuperscript{8}

In this video game production plan, Roundhouse engages video game consumers to direct the production of a video game. This is a classic example of crowdsourcing, in which a company uses the Internet to post a task that is typically done within the company, and requests that Internet users undertake to complete that task and submit their solution. In a risky maneuver, Roundhouse relinquishes an unprecedented degree of control over the development of The Game Cartel.\textsuperscript{9} But if Roundhouse is able to beat the odds, it could cement Roundhouse’s place in the industry and lead to a number of copycats or a new sub-genera within the industry.\textsuperscript{10} Is Roundhouse likely to succeed in its gamble?

Video game design and production through crowdsourcing is not unheard of, but it is in its infancy. Few game production companies are using crowdsourcing to produce their video games, and those production companies that are relinquish little control. Despite the few substantive examples, video games produced through crowdsourcing are not likely to succeed because the growing demand for story in video games is difficult to achieve in a development model that utilizes a substantial amount of crowdsourcing. In order to see why producing video games through crowdsourcing is not a wise endeavor, the paper discusses crowdsourcing and its origins, traditional video game development, the legal protection afforded to video games, and finally the artistic, socioeconomic, and legal considerations of video games produced through crowdsourcing.

\textsuperscript{7} Id.
\textsuperscript{8} Id.
\textsuperscript{9} Id.
\textsuperscript{10} Id.
II. Crowdsourcing

The term “crowdsourcing” first appeared in a June 2006 Wired magazine article penned by Jeff Howe entitled The Rise of Crowdsourcing. In the article, Mr. Howe writes about a number of successful websites that utilize the crowd (a group of people defined by access to the internet) for contributions in ideas, effort, or money. Mr. Howe coins the term “crowdsourcing” as a play off of “outsourcing.” In outsourcing, a business entity sends a task to a foreign country that would ordinarily be done as part of the entity’s business within the United States. Additionally, outsourcing may occur within the United States and is characterized by work that is “contracted out” to a separate business entity. Crowdsourcing, as Mr. Howe sees it, is when a business entity sends a task to the crowd rather than to one or a few contracting firms.

As one example of crowdsourcing, Mr. Howe describes an internet site called InnoCentive. According to Mr. Howe, InnoCentive is a website where companies, including some Fortune 500 companies, post problems that their respective research and development (R&D) departments have been unable to solve. After a quick and painless registration process, anyone can tackle any of the listed problems. The first person that solves a listed problem generally wins a specified amount of money that the company agreed to pay for a solution, anywhere from $10,000 to $100,000. Mr. Howe believes that the strength and efficiency of this kind of business model lies in the diversity of the “information, knowledge, and experience” of

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12 Id.
13 Id.
14 Id.
15 Id.
16 Id.
17 Id.
18 Id.
those flocking to the site.\textsuperscript{19} As a specific example of InnoCentive at work, Mr. Howe reports on Colgate’s problem of “inject[ing] fluoride powder into a toothpaste tube without it dispersing into the surrounding air.”\textsuperscript{20} In this case, the solver was able to solve the problem almost instantly using his background in physics – “impart an electric charge to the powder while grounding the tube.”\textsuperscript{21} The solver postulated that Colgate could not think of a solution because its scientists did not have any substantive training in physics.\textsuperscript{22} All of that effort netted the solver $25,000.\textsuperscript{23} Mr. Howe sees InnoCentive as a solution to a broken R&D model in which costs are rising far too quickly.\textsuperscript{24}

In 2008, Mr. Howe released a book entitled \textit{Crowdsourcing: Why the Power of the Crowd is Driving the Future of Business}, which develops the ideas that he presented in the 2006 \textit{Wired} magazine article.\textsuperscript{25} In the book, Mr. Howe explains the historical roots of crowdsourcing, the requirements for crowdsourcing to be a successful business model, and the benefits and detriments or risks involved in crowdsourcing.\textsuperscript{26}

\textbf{A. Crowdsourcing History}

Mr. Howe traces the historical roots of crowdsourcing to Linux and the open source software movement,\textsuperscript{27} but the intellectual foundation for crowdsourcing goes back further to the development of computer science and subroutines. Early computer programming languages

\textsuperscript{19} Id.
\textsuperscript{20} Id.
\textsuperscript{21} Id.
\textsuperscript{22} Id.
\textsuperscript{23} Id.
\textsuperscript{24} Id.
\textsuperscript{26} Id.
\textsuperscript{27} Id. at 48.
implemented a GOTO command which instructed the computer to jump to another portion of the program. Critics of the GOTO command, like Edsger Dijkstra, called for the abolition of the GOTO command because it resulted in computer code that was very difficult to read once written. The result was structured programming, in which the overall computer program is broken into several functions or subroutines. Structured programming and subroutines provide a number of benefits including: the intellectual benefits of breaking complex tasks into smaller ones, the reduction of code duplication, and the ability to have several programmers working on different subroutines for a single program at one time.

Mr. Howe focuses on the open software movement, in particular the development of Linux, as the historical basis for crowdsourcing. Similar to subroutines, the development of Linux follows the trend of breaking a large task down into smaller sub-tasks. The immediate precursor to Linux was an operating system called Unix and before that an experimental operating system called Multics. Bell Laboratories tasked programmer Ken Thompson with developing Multics which is a time-sharing operating system. A time-sharing operating system is an operating system that is capable of sharing computing power between users or applications. Over time, Bell Laboratories backed out of the project due to its size and complexity. Recognizing the benefits of a time-sharing operating system, Mr. Thompson, along with three of his colleagues from the Multics project, decided to continue with the project on a

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29 Id.
30 Id.
32 Howe, supra note 25, at 8.
33 Id. at 49.
37 Unix, supra note 34.
smaller scale.\textsuperscript{38} Mr. Thompson’s plan was to break up the operating system into four discrete parts and work on each part for one week during a four week vacation.\textsuperscript{39} At the end of the four week period, Mr. Thompson developed the Unix operating system.\textsuperscript{40} Over time, other contributors added to and modified Thompson’s Unix system to arrive at the Linux operating system.\textsuperscript{41}

Both the development of subroutines and Linux share the division of large tasks into smaller sub-tasks and the division of those sub-tasks among multiple workers. This division of tasks and labor is the intellectual basis for crowdsourcing.

\textbf{B. Crowdsourcing Requirements}

Based upon crowdsourcing examples, Mr. Howe identifies various requirements for crowdsourcing to be effective. Mr. Howe identifies requirements on both the crowdsourced work and the crowd members themselves.\textsuperscript{42} First, the crowdsourced work must be broken down into small, discrete sub-tasks, often by the crowdsourcing company.\textsuperscript{43} The crowd members often accomplish the crowdsourced work when they are at home during their leisure hours.\textsuperscript{44} Thus the work must be small and attractive enough, that people are willing to divert time away from family, friends, or other hobbies that usually fill their leisure time.\textsuperscript{45} Further, as exhibited by the InnoCentive example, the work must be distributed over a vast, diverse network with as few

\textsuperscript{38} Id.
\textsuperscript{39} Howe, supra note 25, at 48.
\textsuperscript{40} Id. at 49.
\textsuperscript{41} Id. at 48-53.
\textsuperscript{42} Howe, supra note 25.
\textsuperscript{43} Id. at 11.
\textsuperscript{44} Id. at 13.
\textsuperscript{45} Id.
limitations as possible on potential contributors. This ensures that a maximum number of people have an opportunity to lend their talents to the work.

As for the crowd itself, the first requirement is that the crowd be connected to the internet. A second requirement is affinity. While it is in the best interests of a company to expose their work to as vast an audience as possible, only a small, dedicated, highly passionate sub-set of that audience can be expected to perform the work. This is because people have limited amounts of free time and only sacrifice their leisure time to do work they are truly passionate about. Finally, as technology improves and becomes more inexpensive, people in the crowd have better access to the means of producing things than ever before. As an example, personal computers and video recorders to capture video are household items today, and affordable software to edit the captured video in a professional manner is becoming a reality. This gives people the ability to create, directly from their home computers, the art and movies (for motion capture) necessary in the early stages of video game production. Without accessibility to these technologies, crowd members have an additional barrier to participate in the video game development process.

46 Id. at 132.
47 Id.
48 Id. at 13.
49 Id. at 23.
50 Id. at 29.
51 Id. at 76-7.
52 Id.
C. Crowdsourcing Benefits and Detriments/Risks

Mr. Howe recognizes that embracing crowdsourcing as a business model is a double-edged sword because crowdsourcing brings some detriments and risks along with its benefits. One detriment is that crowdsourcing has the potential to disrupt traditional business models. The InnoCentive example illustrates that crowdsourcing R&D can be much more cost effective which has the potential to destroy the traditional R&D business model which currently drain the financial resources of many corporations. As another example, Mr. Howe presents iStockphoto which is a website that licenses stock photographs for newspapers, magazines, and corporations. Photographers in the crowd upload their photographs onto the website and charge $1-$5 per image. According to Mr. Howe, a traditional stock photograph from a photographer costs around $100-$150 per image. Mr. Howe notes that at such competitive rates, the traditional stock photo industry has had no choice but to begin aligning itself with iStockphoto’s crowdsourced business model. While this example illustrates that crowdsourcing can dramatically reduce costs, which benefits consumers immensely, it may also destroy traditional business models which hurts those that currently rely on those methods.

In a shocking move, Pepsi removed all ads from Super Bowl XLIV, after having an ad in every Super Bowl for 23 consecutive years. Pepsi made the decision because it felt that the

53 Howe, supra note 25.
54 Id. at xix-xxiv.
55 Howe, supra note 11.
56 Id.
57 Id.
58 Id.
59 Id.
60 Sean Gregory, Behind Pepsi’s Choice to Skip This Year’s Super Bowl, http://www.time.com/time/business/article/0,8599,1958400,00.html (last visited Dec. 19, 2010).
mass-market media was not the best method for it to reach its consumers. Instead, Pepsi turned to crowdsourcing. Pepsi’s plan was to provide $20 million in grant money to up to 32 people every month with great ideas, most philanthropic. People generate the ideas and create web pages to promote their ideas on the “Pepsi Refresh” page. Visitors to the web page vote on their favorites which determine the winners. In this case, Pepsi determined that the traditional business model for advertisement no longer suited it and turned to crowdsourcing as an alternative. While Pepsi used crowdsourcing to bring about philanthropic benefits, this is another example where crowdsourcing is changing the way businesses conduct themselves.

IBM told Personnel Today, a sister publication of Computer Weekly, that it could reduce its global workforce of 399,000 people to 100,000 by 2017. The cause of this massive reduction in workforce is crowdsourcing. IBM would re-hire its workers as specific contractors for projects as necessary in an attempt to reduce the “human” costs associated with its business. As IBM sees it, this crowdsourced method of doing business would eliminate its need for building costs, pensions, and healthcare costs. Although an IBM spokesperson subsequently denied the massive reduction in employment, this article identifies some of the economic incentives that are driving the disruptive potential that crowdsourcing is having on traditional

61 Id.  
62 Id.  
63 Id.  
65 Gregory, supra note 62.  
67 Id.  
68 Id.  
69 Id.
business models. This crowdsourced business model will profit IBM and its shareholders, but it causes the company to lose sight of the human beings doing its business.

Wikipedia founder Jimmy Wales has been a vocal critic of crowdsourcing and virulently argues that Wikipedia itself is not a crowdsourced entity. Wikipedia is an online encyclopedia in which users both create the entries and police the entries for accuracy. Thus Wikipedia would seemingly be the quintessential example of crowdsourcing, where the task of creating and policing an encyclopedia are given to those that are passionate and knowledgeable about a specific area. Mr. Wales’ strong dislike for crowdsourcing comes from his belief that crowdsourcing does not develop human communities within the workplace. Mr. Wales believes that a critical byproduct of these communities is a “sense of trust and responsibility both for each other and their work.” Wikipedia accomplishes this by creating a “bureaucracy” or “power structure” where volunteers earn the authority to exert editorial control. Additionally, editors in good standing may rise to the level of “administrator” which provides additional editorial control like the ability to delete pages or lock articles from subsequent change. This “power structure” creates a community around Wikipedia’s editorial process and furnishes the sense of ownership and responsibility for editing that Mr. Wales feels is missing from crowdsourced business models.

70 Id.
73 McNichol, supra note 73.
74 Id.
75 Wikipedia, supra note 74.
76 Id.
77 Id.
If the crowdsourcing requirements mentioned above are not met, then the crowdsourcing business model is susceptible to failure. For example, too few participants or participants that lack passion can devitalize a crowdsourced business model. Additionally, Sturgeon’s Law, named after American science fiction author Theodore Sturgeon\(^{78}\), states that “ninety percent of everything is crud.”\(^{79}\) Thus, of all the responses that a company receives for a particular task that it has requested from the crowd, only 10% is something of value. Weeding out the inferior results has transaction costs, especially in the form of time, even if the crowd is asked to do it. Logistical difficulties in regulating the desired output from the crowd as well as the logistical difficulties in managing the overall project may lead to the failure of the project or unforeseen financial expenditures.

Finally, Mr. Howe also notes that crowdsourcing eliminates pedigree, race, gender, age, and qualification as a means of discrimination in the workplace.\(^{80}\) In virtually all instances, the company knows nothing about the crowd members that try to solve its problems. The only thing that matters to the company in these contexts is solutions.

### III. Video Game Development

The development of video games is similar to the development of movies.\(^{81}\) The development of video games involves pre-production, production, and post-production phases.\(^{82}\) While the pre-production phase is much like that of movies in that it is the idea generation phase, the work done during the production and post-production phases differs considerably between

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\(^{79}\) *Howe*, *supra* note 25, at 226.

\(^{80}\) *Id.* at 13.

\(^{81}\) *Game Development*, http://en.wikipedia.org/wiki/Game_development (last visited Nov. 27, 2010).

\(^{82}\) *Id.*
video games and movies. As an obvious example, there are typically no actors and film recording but programmers and digital artists in video game production. This paper first considers the business structure and personnel in the video game development process and second, the development stages.

**A. Role Players**

The major business entities in video game development are the producer and the development team. The producer may be internal with the development team, meaning the producer and the development team are part of the same business entity, or the producer may be external to the development team. The producer is the entity that provides capital to the development team. As a result of its capital investment, the producer controls the scheduling, budgeting, and may control the hiring and firing of staff on the development team. The producer also owns the intellectual property rights for the video game.

The development team is responsible for developing the game, which includes everything from the artistic elements to the underlying programming. Traditional titles within a development team include designers, artists, programmers, level designers, sound engineers, and testers. Designers are the overall visionaries. Designers develop the rules and structure of the game, referred to as the “gameplay,” and also write the dialogue and commentary. Artists are
responsible for setting the artistic tone of the game, in both two and three dimensions.\(^\text{93}\)

Programmers code the underlying characteristics of a video game, which include the properties of the physics in the game, the artificial intelligence, the graphical detail of the video game, the incorporation of sound, the user-interfaces, and the incorporation of the peripherals that the player uses to interact with the game.\(^\text{94}\) Level designers create individual levels, challenges, or missions that the video game play must solve to advance further within the game.\(^\text{95}\) A level within a video game is similar to a chapter within a book. Sound engineers create the sound effects and record character dialogue used in the game.\(^\text{96}\) Sound engineers also determine where the programmers should place the sound effects.\(^\text{97}\) Finally, testers play the video game to determine where there are errors, or “bugs,” for the development team to fix.\(^\text{98}\)

**B. Development Stages**

The stages of development for a video game are similar to the stages of development for a motion picture. The development stages flow from pre-production to production to post-production.\(^\text{99}\) The pre-production stage starts with an idea or a concept that the development team believes would make an interesting game.\(^\text{100}\) This might come from a particularly compelling story or from a particularly unique gameplay idea. From this idea, the game slowly becomes more detailed as the development team creates a production plan.\(^\text{101}\) The production plan starts with a high concept document, which is nothing more than a written statement of the

\(^{93}\) Id.
\(^{94}\) Id.
\(^{95}\) Id.
\(^{96}\) Id.
\(^{97}\) Id.
\(^{98}\) Id.
\(^{99}\) Id.
\(^{100}\) Id.
\(^{101}\) Id.
idea or concept. Following the high concept document is the pitch, which is a slightly more detailed document that game developers give to producers or publishers to induce them to invest in developing the game. Following the pitch is the concept document which details the game’s genera, gameplay, features, setting, story, target audience, platforms the game will play on, estimated schedule, marketing analysis, and risk assessment. Some pre-production phases include a game design document detailing the major artistic elements of the game and summarizing the artistic feel of the game. Additionally, some pre-production phases include a prototype which provides a proof of concept for some functional aspects of the video game.

During the production phase, the development team assigns its staff and hires the necessary talent. From this point, the role players implement the production plan: programmers code, sound engineers record sounds, and testers test the evolving game. The result of the production stage is the source code of the game. The source code is the computer code that a human being would be able to read and write. The source code is also the computer code representation of the video and music that the video game player ultimately experiences.

As production on the video game progresses, the development team tracks its progress with milestones in the development process. The first is called the “alpha,” which is a playable game with all major features present. The “beta” milestone is the point at which minor bugs remain in the video game, but none of the remaining bugs prevent the game from being
shipped. The “code release” is the milestone at which all bugs are fixed and the video game is ready to be shipped. A “gold master” refers to the final game build from which the producer makes copies for distribution to retailers.

Finally, the post-production phase comprises additional maintenance or marketing after the video game has been fully developed. Historically, post-production did not exist for the developer because once the video game had been developed, there was little opportunity for the developer to modify or change the video game, absent re-release of the game. With the advent of the internet and the addition of network connectivity on most video game consoles, video game developers now have the ability to maintain or modify their video games after release. Developers can maintain their video games through downloadable “patches” or downloadable content supplementing the original video game. This often leads the development team to outsource the additional music, voice acting, or sound effects needed for the downloadable content. Finally, marketing the video game is the major component of the post-production phase. The publisher’s marketing team identifies a specific market, targets a specific demographic, and heavily advertises the video game based upon current market trends.

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112 Id.  
113 Id.  
114 Id.  
115 Id.  
116 Id.  
117 Id.  
118 Id.  
119 Id.
IV. Legal Protection for Video Games

The roots of legal protection for video games can be found in the United States Constitution: “The Congress shall have power to promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.”120 From this Constitutional mandate, Congress enacted the Copyright Act to protect “original works of authorship fixed in any tangible medium of expression.”121 Thus, the Copyright Act establishes three requirements for copyright protection: (1) originality,122 (2) work of authorship,123 and (3) fixation in any tangible medium of expression.124

The threshold requirement for a work to be “original” is low. Originality requires that authors create their works independently and that the works exhibit some minimal level of creativity.125 The Supreme Court noted that the “vast majority” of works will pass this test.126 Therefore, virtually all video games surmount the originality requirement for copyrightability unless a video game is a copy of an existing game. Fixation in a tangible medium of expression is defined in the Copyright Act as “sufficiently permanent or stable to permit it to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration.”127 Courts recognize that computer code stored in computer memory is sufficiently fixed for purposes of the Copyright Act.128 Additionally, courts have held that the audiovisual aspects of video games are

120 U.S. Const. art. I, § 8, cl. 8.
122 Id.
123 Id.
124 Id.
126 Id.
128 MAI Systems Corp. v. Peak Computer, Inc., 991 F.2d 511, 519 (9th Cir. 1993).
appropriately fixed under the Copyright Act.\textsuperscript{129} Thus, the underlying computer code and the audiovisual aspects of video games are sufficiently fixed for purposes of the Copyright Act.

Further, the Copyright Act defines the works of authorship that it protects.\textsuperscript{130} Some of the important categories include: literary works; musical works; dramatic works; pictorial, graphic, or sculptural works; audiovisual works; and architectural works.\textsuperscript{131} First, the audiovisual aspects of a video game are protected under the Copyright Act as an audiovisual work.\textsuperscript{132} The Copyright Act defines audiovisual works as “works that consist of a series of related images which are intrinsically intended to be shown by the use of machines, or devices such as projectors, viewers, or electronic equipment, together with accompanying sounds, if any.”\textsuperscript{133} Courts have routinely found copyright protection for the audiovisual aspects of a video game as audiovisual works.\textsuperscript{134}

Second, the underlying computer code of a video game is protected under the Copyright Act as a literary work.\textsuperscript{135} In 1980, Congress amended the Copyright Act specifically to protect the copyrightability of computer programs.\textsuperscript{136} The Copyright Act defines a computer program as “a set of statements or instructions to be used directly or indirectly in a computer to bring about a certain result.”\textsuperscript{137} It is well established that the Copyright Office and courts classify computer programs as literary works of authorship.\textsuperscript{138} Both the source code and the object code are

\begin{thebibliography}{99}
\bibitem{129} \textit{Williams Electronics, Inc. v. Artic Int‘l.}, 685 F.2d 870, 877 (3d Cir. 1982).
\bibitem{130} 17 U.S.C.A §102
\bibitem{131} \textit{id.}
\bibitem{132} 17 U.S.C.A. § 101
\bibitem{133} \textit{id.}
\bibitem{134} \textit{Midway Mfg. Co. v. Artic Int‘l.}, 704 F.2d 1009, 1012 (7th Cir. 1983).
\bibitem{135} \textit{Williams}, 685 F.2d at 875.
\bibitem{136} \textit{id.}
\bibitem{137} 17 U.S.C.A. § 101
\bibitem{138} \textit{Action Tapes, Inc. v. Mattson}, 462 F.3d 1010, 1013 (8th Cir. 2006); \textit{see also Atari Games Corp. v. Nintendo of America, Inc.}, 975 F.2d 832, 838 (Fed. Cir. 1992); \textit{Apple Computer, Inc. v. Franklin Computer Corp.}, 714 F.2d 1240, 1247-50 (3d Cir. 1983).
\end{thebibliography}
protected as literary works. The source code is the computer code that a human being would be able to write and read. The object code is the machine code (binary) that a compiler or interpreter generates from the source code. The object code is the level at which the computer calculates or executes the coded operations. Thus, both the object code and the source code underlying a video game are protected under copyright law as literary works.

Subject to exceptions, for those works that meet the requirement of an “original work of authorship fixed in any tangible medium of expression,” the author is given the following rights: reproduce the copyrighted work, prepare derivative works based on the copyrighted work, distribute copies of the copyrighted work, publicly perform the copyrighted work, and publicly display the copyrighted work. Similar to other property rights, the author of a copyrighted work may transfer the rights in that work to others. Authors may transfer all of the rights, or they may specify the rights they wish to convey while retaining the remaining rights.

Often, authors convey rights in a copyrighted work through a license. A license may be an express license which must be in writing and signed by the owner of the rights. Alternatively, a court may imply a license based upon the intent or conduct of the parties. Licensing is a common phenomenon in video games. For example, video game publishers grant licenses to the end-user (purchaser) to play the game with virtually every sale of a video game.

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139 Id.
142 Id.
143 17 U.S.C.A. § 204 (West 2010).
V. Crowdsourcing As Applied to Video Game Production

Crowdsourcing is a new phenomenon. As a result, few video games have been crowdsourced. Thus an inquiry into the considerations of crowdsourcing a video game is a worthwhile endeavor. Before looking at the major considerations of crowdsourcing a video game, there is a threshold question - what counts as a crowdsourced video game? Certainly, allowing the crowd to do everything, from idea development to playable game, would be the perfect instance of a crowdsourced game. But few game development companies have relinquished anywhere near that level of control. On the other end of the spectrum, would a poll on a developer’s web site to determine the color of the main character’s shirt be sufficient to classify the video game as crowdsourced? This paper leaves it to others to tackle this question, and takes a flexible definition of a crowdsourced video game to include as many real world examples as possible.

This paper considers the following hypothetical the most likely steps in crowdsourcing a video game: first, the video game developer requests over the internet the work it wants from the crowd given a set of limitations (which may range from very specific to very general); second, crowd members undertake the work at their own discretion and submit their work when completed to the video game developer; third, the video game developer sorts through the submissions and selects the “best.” The video game developer selects the “best” solution based upon a variety of factors including: most efficient code, subjectively aesthetically pleasing art, or simply that the submitted code works. It should be noted that instead of requesting work, the video game developer may request that the crowd make decisions, such as whether the main character should be male or female, how many levels there should be, or what artistic style

146 Terdiman, supra note 1.
should be implemented. Where the crowd makes decisions, it is appropriately termed “crowdvoting.” Additionally, the video game developer implements the crowd’s decisions after it determines a winner.

This paper first looks at the artistic implications of crowdsourcing a video game. The paper then considers the socioeconomic considerations of crowdsourcing a video game. The paper concludes by considering potential legal protection for the various components of crowdsourced video games.

A. Artistic Considerations

Certainly, the art generated in the pre-production stage of video game development is protected under copyright law as artistic works. Under the Copyright Act, the art would be protected as pictorial, graphic, or sculptural works, depending upon the underlying art form. But is the video game itself art? This paper assumes that video games are art, although some critics think otherwise.147

Regardless of whether video games are, or are not art, because the initial stages of video game development depend on artistic creativity, the ways in which crowdsourcing affects art in

147 Roger Ebert, the famous movie critic, recently wrote an article defending his statement that “video games can never be art.” Overall, Mr. Ebert argues that video games are not art currently, but leaves open the possibility that video games might evolve into art in the distant future. To support his assertion that video games are not currently art, Mr. Ebert makes two points: first, that no one in or out of the video game field has ever been able to compare a video game to one of the great literary, artistic, sculptural, poetic, or motion picture works; and second, that games, like chess or monopoly, have rules, objectives, and an outcome while art has no objective - it can only be experienced. Mr. Ebert spends a great deal of time toying with differing definitions of “art,” but ultimately decides that art is something you “just know.” On that definition however, video games might just as well be art. In addition, consider that the line between motion pictures and video games is blurring. Also, video games have as much potential to stir emotion in their audience as motion pictures or pictorial art. Ultimately, Mr. Ebert is correct that video games will not be art until well into the future, but not because video games are not art. Rather, video games will not be art until well into the future because we as a culture are not ready to call them art. See Roger Ebert, Why video games can never be art, http://blogs.suntimes.com/ebert/2010/04/video_games_can_never_be_art.html (last visited Dec. 19, 2010).
general, translates to how crowdsourcing affects the artistic aspects of video game development. The greatest challenge is that crowdsourcing results in many collaborators on a single work. Thus it is difficult for the end product to be coherent in the absence of greater levels of direction from the company. And with greater levels of direction, does that eliminate the crowd’s potential for artistic expression or undermine the purpose of crowdsourcing the work in the first place?

The likelihood for cacophony in the end product is a significant impediment in the use of crowdsourcing in art design overall. Nevertheless, crowdsourcing techniques have been implemented in art. In Ten Thousand Cents for example, 10,000 people were told what to draw and were paid 1 cent to do it. The artist combined all the images so that as a whole, they depicted a $100 bill. Most of the drawings were extremely simplistic depictions of a human-or animal-like form. This example illustrates an application of Mr. Howe’s requirements for crowdsourcing. As in other contexts, crowdsourcing in art requires small, quick tasks, but in this case the crowdsourcing entity provided a great deal of direction. The large degree of direction is necessary in order to avoid the cacophony that would otherwise result.

Many examples of crowdsourced art follow Ten Thousand Cents’ paradigm. The Sheep Market collates 10,000 crowd member drawn images of sheep. Similarly, The One Million Masterpiece comprises 1 million squares, each square drawn by a single artist. Artists were

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149 Id.
150 Id.
152 Id.
from all over the world. The goal of the project was to create a “snapshot of our global society.”

The limitations of crowdsourced art are prevalent in *The Johnny Cash Project*. The goal of *The Johnny Cash Project* was to create a Johnny Cash tribute music video. User drawn and submitted images comprise the frames of the video. To create the images, the project directors provided a reference image to each artist. The image included in the music video was a drawing, or in some instances a trace, of the reference image. The project directors likely realized that the creation of a coherent and entertaining music video would not be possible if they allowed the artists in the crowd to draw freely. As a result, the project directors directed the crowd through the reference images. This example illustrates the tension in crowdsourced art between artistic freedom and a coherent end product.

At its purest, crowdsourcing art provides the company with a variety of options for varying aesthetic tastes. This increases the likelihood that at least one result has an aesthetic feel that the company is looking for. Additionally, crowdsourcing art gives some contributors the potential for recognition that they might not otherwise be able to achieve.

Unfortunately, there are few, if any, video games in which the video game developer relinquished any aspects of game’s aesthetic design to the crowd. In a rare exception, a video
game called “Betaville” allowed players to influence art.159 In “Betaville” players designed a city landscape.160 The results were sent to urban planners, city officials, and architects while they designed the same space.161 This gave players the ability to collaborate with architects and urban planners in designing a city.162 While “Betaville” does not involve video game development, it does illustrate the expanding influence of video games and crowdsourcing into artistic endeavors.

Ultimately, crowdsourcing the early artistic aspects of the video game development process is a great way to generate ideas. This provides the video game developer with a broader range of ideas than the development team might create on its own. As an artistic end in itself, however, crowdsourcing is not the best method for creating a coherent artistic creation, especially in the context of a story.

B. Socioeconomic Considerations

Crowdsourcing has its greatest impact on video games in the socioeconomic arena. From an economic perspective, crowdsourcing in video game production allows video game developers to reduce their costs in development, which provides greater income. Development costs are reduced to the extent that the crowd can be tapped to do the work of the video game developer. To the extent that crowdsourcing can lower the costs of production, crowdsourcing also has the potential to lower the ultimate costs to consumers. On the other hand, if the project is

160 Id.
161 Id.
162 Id.
not well directed, the logistical difficulties of coordinating and piecing together the submissions from the crowd may run the project over budget.

One example is Counter-Strike, a video game in which terrorists attempt to plant and detonate a bomb and counter-terrorists attempt to stop the terrorists. In June 1999, college students Minh Le and Jess Cliffe released the game. In developing Counter-Strike, the students converted an already existing game, called Half-Life. In a conversion, the underlying engine of the game remains the same, in other words the physics and the peripheral controls. A conversion changes the gameplay and the artistic aspects of the characters and the levels. Valve, the maker of Half-Life, actually encouraged the conversion of its games. Valve did so because players needed a copy of Half-Life (containing the underlying engine) in order to play Counter-Strike. The immense popularity of Counter-Strike sold more copies of Half-Life than the actual Half-Life game. The conversion of Half-Life into Counter-Strike illustrates the profitability of crowdsourcing, namely by allowing consumers to decide what they want.

Another example is LittleBigPlanet. LittleBigPlanet involves an anthropomorphic puppet that runs, jumps, and climbs his way through obstacle courses. Each obstacle course is a level and the game consists of multiple levels. Interestingly, the game comes with a level editor that allows players to make their own levels. Players can post their homemade levels onto the Internet and fellow players can download and play the levels. The level editor in LittleBigPlanet is an incentive for people to purchase the video game and gives the players of the game a sense of

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163 Howe, supra note 25, at 262-3.
164 Id.
165 Id.
166 Id.
167 Id.
168 Id.
169 Id.

community with their fellow players. This example illustrates the interaction between the social and economic aspects of crowdsourced video game production. As video games become a social tool and establish a community of increasingly interconnected people through crowdsourcing, this incentivizes the purchase of these video games so that people can be part of this community.

From a social perspective, video game crowdsourcing brings together a highly passionate group of individuals which provides a sense of community. Additionally, video game crowdsourcing gives ordinary people another outlet to express themselves and their views on important topics of their time. Most importantly, video games that are played in a crowdsourced manner allow players to have an impact on modern day social issues.

Unfortunately, crowdsourcing in video game development is rare. As a result, the social implications of crowdsourcing on video game development are unknown. Nevertheless, video games which implement crowdsourcing in gameplay are impacting social issues. In *Halo: Reach*, the latest installment in Microsoft’s *Halo* series, players can talk to each other using a communication system built into the online multiplayer component of the game. Unique to *Halo: Reach* is a program that tracks the number of times players are muted by others while playing the game, usually due to profane or derogatory language. Over a period of time, the game defaults these players to mute when they enter games so that the other players do not have to listen to their comments. This application of crowdsourcing keeps this type of language out of this social environment and maintains a friendly and appropriate environment for video game players.

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171 *Id.*
Another example is a simulation-game called “FoldIt.”172 The simulation-game has players fold proteins in three dimensional space during protein synthesis.173 According to the developers, the determination how a protein folds in three dimensional space is a computationally demanding task that humans can accomplish quite easily.174 Thus the human beings that play the simulation-game help advance scientific understanding.175 Protein folding is responsible for certain neurodegenerative diseases and allergies.176

Another simulation-game called “Superstruct” had players collaborate together to find ways to survive after global cataclysms like climate change, food shortage, cyber attack, respiratory distress syndrome, and internal tensions over renewable energy.177 The simulation-game developer described the starting conditions and players discussed amongst themselves the best ways to survive.178 There was no “winner,” but the simulation-game provided scientists with invaluable research into how human beings are likely to tackle these societal catastrophes.179 Although these simulation-games were not developed by the crowd, they were designed to give the crowd an impact on matters of social concern.

172 The game is referred to as a simulation-game to distinguish it from games that only aim to entertain.
173 Foldit, http://fold.it/portal/ (last visited Nov. 29, 2010).
174 Id.
175 Id.
178 Id.
179 Id.
C. Potential Legal Protection

It should be clear that the contributions to a video game from members of the crowd are protected by copyright law. As discussed above, originality is not a substantial legal impediment to copyright protection for members of the crowd because of the “low” standard for originality. An exception would be a poll requesting the crowd to select the color of the main character’s shirt. Under a more realistic definition of crowdsourcing, however, a poll, without more, is unlikely to be considered crowdsourcing.

Further, as discussed above, both the underlying art and computer code are fixed under the Copyright Act. And finally, the Copyright Act protects artistic contributions to a crowdsourced video game as artistic works, and portions of computer code as literary works. Thus copyright protection vests in the crowd members for any contributions they add to a crowdsourced video game. But the incorporation of those contributions into the video game gives potentially thousands of people the ability to derail the production of the video game through the assertion of their intellectual property rights in their respective contributions. The likely legal solution is a license or assignment entered into at the submission of each crowd member’s contribution. Other potential means for allocating property rights include joint authorship, collective work, or work made for hire classification.

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180 Feist Publications, 111 S. Ct. at 1294.
181 MAI Systems, 991 F.2d at 519.
182 17 U.S.C.A. § 101
1. Licenses

In general, a video game producer/developer starts with its own intellectual property. This intellectual property is licensed to the crowd members when the video game developer requests completion of work over the internet. The members of the crowd then use this intellectual property in generating intellectual property of their own. Because the crowd member’s intellectual property is copyrightable, the video game developer needs a license when it wants to incorporate this crowd member intellectual property into its project.

A license transfers specific rights in the contributions from the crowd members to the video game developer for a limited period of time.\textsuperscript{183} An assignment irrevocably transfers some or all rights in the contribution to the video game developer. A developer may elect any number of licenses to protect itself: express license or assignment in the contract, GNU general public license, creative commons license, an implied license.

In an express license, the video game developer drafts its own license, specifying the rights that it wishes to have. The crowd member must sign the license.\textsuperscript{184} The license agreement would likely be presented at the submission of the crowd member’s contribution because crowd members typically do not agree in advance to do work. Rather, crowd members do work as they can, if they can.

A GNU general public license allows everyone to use, incorporate, copy, or modify the software or “covered work” it is attached to.\textsuperscript{185} The license defines “covered work” as “either the

\begin{footnotesize}
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\item 184 17 U.S.C.A. § 204
\item 185 GNU General Public License, http://www.gnu.org/licenses/gpl.html (last visited Nov. 28, 2010).
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unmodified Program or a work based on the Program.” The license states “you may not impose any further restrictions on the exercise of the rights granted or affirmed under this License.” Thus the purpose of the license is to grant the same freedoms, and not fewer, to subsequent owners of the software. The terms of the GNU general public license are such that copies or derivations of the original work “must carry prominent notices stating that it is released under this License.” Additionally, the license states that “[e]ach time you convey a . . . work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License.” The effect of the license is that all software containing a contribution copyrighted with a GNU general public license must be protected under a GNU general public license as well. Otherwise, the copyright in the software containing the GNU protected contribution would limit the freedom of the GNU contributed portion. As a result, the GNU general public license would not be favorable to the video game production companies because they would be unable to control the subsequent use of their code. A benefit to this license is that it allows a copier to charge a fee for each copy conveyed. Thus unlike other licenses, the GNU general public license permits compensation on the sale of copies.

A creative commons license would allow contributors from the crowd to select the kind of protection they want for their works. The video game producer would then look to the attached license as one factor in determining whether to accept a particular contribution from a

Creative Commons, http://creativecommons.org/ (last visited Nov. 28, 2010).
particular crowd member. The six types of creative commons licenses are: attribution, attribution share alike, attribution no derivatives, attribution non-commercial, attribution non-commercial share alike, and attribution non-commercial no derivatives. Attribution requires attribution to the original author. Share alike allows derivative works under the same or a similar license. Non-commercial requires that the work is not used for commercial purposes. No derivatives permits only the original work, without any derivatives. Video game producers are unlikely to take many contributions that incorporate a non-commercial license due to the inability to make profit, so the viable creative commons licenses for crowdsourced video game contributions are: attribution, attribution share-alike, and attribution no derivatives.

Finally, in the absence of an express license, it is likely that a court would imply a license so that the game developer could use a crowd member’s contribution. Courts typically imply a license where the intent or conduct of the parties suggests a license. The quintessential case is *Effects Associates, Inc. v. Cohen*, 908 F.2d 555 (9th Cir. 1990), in which the producer, Cohen, orally contracted with a special effects company, Effects Associates, Inc., to do certain special effects for a horror movie. In the absence of a contract or express license agreement for the special effects to appear in the horror movie, the court held that the producer could use the special effects in the movie on the theory of an implied license. The court found an implied license because the special effects company created the special effects with the intent that they

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194 *Id.*
195 *Id.*
196 *Id.*
197 *Id.*
198 *Id.*
199 *Effects Associates*, 908 F.2d at 558.
200 *Id.*
201 *Id.*
be used and distributed in the movie.\textsuperscript{202} Similarly, a court would likely find that it was the crowd member’s intent when she created and submitted a contribution to a video game developer that the contribution be used and distributed in the video game. Thus, a court would likely find an implied license between the crowd member and the video game developer.

2. Other Potential Legal Protection

The law may provide the video game developer, in addition to the crowd member, with some legal protection. Thus, both the crowd member and the video game developer would have a copyright in the work produced by the crowd member. The developer might obtain legal protection under joint authorship, collective work, or work made for hire status. The developer might desire some copyright ownership in the crowd member’s work because it would eliminate the need to obtain a license.

In a joint authorship, all authors must intend that their works be combined at the time the contributions are created.\textsuperscript{203} In addition, each component must be inseparable and interdependent.\textsuperscript{204} Finally, the common law requires that each contribution be independently copyrightable.\textsuperscript{205} In most instances, the video game developer and the crowd member understand that their works be combined at the time they create them. The crowd member begins work in response to the request from the video game developer, and the video game developer does not request work unless it desires contributions from the crowd. Only in the rare circumstance where the crowd member begins the work for personal gratification and later decides to submit it will the authors not intend that their works be combined. The inseparable and interdependent element

\textsuperscript{202} Id.
\textsuperscript{203} 17 U.S.C.A. § 101
\textsuperscript{204} Id.
\textsuperscript{205} Childress v. Taylor, 945 F.2d 500, 507 (2d 1991).
is problematic. Is an artistic contribution an inseparable component of the video game? Is a portion of source code that does nothing outside of the overall crowdsourced project an interdependent component? These are uncertain questions that would require extensive litigation to clarify. In virtually all instances the video game developer’s and the crowd member’s contributions will be independently copyrightable. Any contributed art is protectable as a pictorial, graphic, or sculptural work, and any source code contributions are protectable as literary works. Unfortunately, this type of protection would be unfavorable to video game developers because each joint author is a co-owner in an undivided interest in the entire work. This means that if each crowd member is a joint author, she is legally able to sell the entire work on her own.

Collective works are typically encyclopedias or periodicals.\textsuperscript{206} They are collections of separately copyrightable works in themselves.\textsuperscript{207} Authors receive copyright protection for their individual contributions to the overall collective work.\textsuperscript{208} Further, copyright protection is limited to that specific collective work, or later revisions of that collective work, or other works of the same series.\textsuperscript{209} As applied to crowdsourced video games, collective work status would provide copyright protection to both the video game developer and the crowd member in their respective contributions. Once classified as a collective work, both the video game developer and the crowd member would be able to prevent copies of the collective work unilaterally. Unfortunately, classifying the video game as a collective work is not beneficial to the video game developer because it would not be able to make decisions regarding copies and distribution unilaterally.

\textsuperscript{206} 17 U.S.C.A. § 101  
\textsuperscript{207} Id.  
\textsuperscript{209} Id.
The work made for hire doctrine is the best option for video game developers to obtain rights in a crowdsourced contribution because the doctrine transfers all rights to the employee. The Copyright Act defines a work made for hire as either “(1) a work prepared by an employee within the scope of his or her employment” or “(2) a work specially ordered or commissioned for use as a contribution to a collective work [or] as part of a motion picture or other audiovisual work.”\(^\text{210}\) The Copyright Act further requires that the parties expressly agree that the work is a work made for hire in a written document.\(^\text{211}\) While unlikely to fit within part (1) of the definition, a video game developer may use part (2) and argue that a crowdsourced component of a video game is a work that was “specially ordered or commissioned” (through crowdsourcing) as a “contribution to an audiovisual work” (the video game). Because members of the crowd rarely, if ever, sign a contract before doing their work, the video game developer would have a difficult time arguing that the crowd member understood their work to be a work made for hire when they undertook to do the work. Fortunately, courts have left the door open for the classification of works as works made for hire after the creation of the work.\(^\text{212}\) Additionally, the work made for hire doctrine favors video game developers because the doctrine transfers all rights to the employee.\(^\text{213}\) Thus, the work made for hire doctrine is best option for the video game developer to obtain rights in contributions obtained from crowdsourcing without a need for licensing.

\(^{210}\) 17 U.S.C.A. § 101
\(^{211}\) Id.
\(^{212}\) Playboy Enterprises, Inc. v. Dumas, 53 F.3d 549, 559 (2d Cir. 1995).
\(^{213}\) Id.
VI. Conclusion

The concept of crowdsourcing has just been discovered. As a result, few if any video game developers have affirmatively implemented crowdsourcing in video game development. Ultimately, this paper focuses on the artistic, socioeconomic, and legal considerations of crowdsourcing video game production. This paper shows that the contributions from crowd members and the interests of the video game developer can be protected under the law of copyright via a license. Additionally, this paper shows that crowdsourcing video game production has the potential to enhance profits for the video game developer and provides a means for passionate video game players to form a community. Developing a video game from the ground up is largely an artistic endeavor. As this paper shows, crowdsourcing is not the best business model for a cohesive artistic work of art. Crowdsourcing can be useful to generate ideas and stimulate creativity, but it has not proven itself as a successful business model for artistic works that require a cohesive unity, especially those involving a story.

While Roundhouse hoped to release The Game Cartel in December 2010, Roundhouse sold The Game Cartel on February 12, 2010. No further information about The Game Cartel has been released since its sale.  

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214 Terdiman, supra note 1.
216 Id.
217 It is the hope of this author that those in the video game industry will attempt to produce a video game through crowdsourcing where virtually all of the control is given to the crowd. It will be a challenge for game developers/producers to surmount the artistic limitations and the economic risks inherent in such a crowdsourced business model. Despite the risks, it is the opinion of the author that the endeavor is an intellectually stimulating experiment that could revolutionize the video game industry if successful.