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Game is not over yet: software patents and their impact on video game industry in Europe

**This is Working Paper
No 43 (April 2008)**

Game Is Not Over Yet: Software Patents and Their Impact on Video Game Industry in Europe

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Abstract: The paper conducts a review of patent protection of video game software, such as computer game engine, game methods and game concept. The paper compares the software patent protection schemes between the US and the EU, and points out that strong software patent protection for video games may intrude virtual world and stifle innovation. The paper believes that property rights in virtual worlds are really about social relations. Only when Europe has recognized the missions of patent protection and the features of the video game business, can it make its own satisfied legal arrangements of the social relations in the real-world, and achieve the goals set by itself in the political and cultural strategies.

I. Introduction

A video game is usually defined as "an electronic or computerized game played by manipulating images on a video display or television screen."[1] The term "video games" includes console games, PC offline games, online games, and wireless games. There is a traditional perception that compared to other sectors of economy video games are a matter of enlightenment, which is very marginal in terms of economic contribution. However, the Study on the Economy of Culture in Europe suggests

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[1] European Commission, Study on the Economy of Culture in Europe, October 2006
http://ec.europa.eu/culture/eac/sources_info/studies/economy_en.html (Last visited Mar 12th, 2008)

otherwise. According to the study carried out by the European Commission in October 2006, the revenues of the video game industry as a whole on a global level are reported to have doubled between 1997 and 2003, reaching € 15.3 billion in 2003; at European level, the turnover of the video game sector increased from €2.6 billion in 1997 to €5.25 billion in 2003. The industry's revenues are expected to grow by 16.5% a year until 2009.[2] Nowadays video game industry plays a pivotal role in the international and regional economic arena.

The three largest producers of and markets for computer and video games are North America (US and Canada), Japan and the United Kingdom. As the Study on the Economy of Culture in Europe shows, although the video game industry is currently dominated by the US and Japanese companies, European companies possess some significant market shares. Four European companies are listed on the top-20 video game publishing companies in 2004, including Ubi Soft Entertainment S.A., Infogrames Entertainment, Vivendi Universal Publishing and Eidos PLC.[3] In May, 2007, the European Commission proposed the First-Ever European Strategy for Culture, which highlights the pressing needs for the creative industries. In January, 2008, the Commission adopted Creative Content Online in Europe's Single Market to strengthen the competitiveness of Europe's music, film and games industry and to support a truly single market for creative online content, while at the same time ensuring a robust protection of intellectual property rights.[4]

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[2] Id.
[3] Id.
[4] Commission Seeks Stronger Single Market for Online Creative Content, EU Focus 2008, 225, 23-24

Evolved from the early human-computer interaction like the "Tennis for two" and the "Spacewar", today's video games see a rapid boom in online communities which require highly sophisticated computer programs. While the video game developers and publishers are often aware of the patent protection of hardware devices, most of them have not yet realized the effects brought by the patent protection of software. Such ignorance of intellectual property rights increases the potential for litigation, which may result in financial loss and even significant business disruption. Although there is a fear that the patentability of software will stifle the innovation in video game development, the European Patent Office (EPO) and national patent offices continue to reward video game developers a limited monopoly for the time and energy they have devoted. Hence, the video game developers and publishers must not only learn the competitive challenges within the industry, but also be fully aware of the changing legal environment.

This paper first conducts a brief review of intellectual property rights in video games, noting that there is a global trend towards patent protection of game software. The paper further cites several contents of software patent protection in video games, such as computer game engine, game methods and processes as well as game concepts. The paper then goes on to study the software patent protection approaches in Europe and also makes a comparison with the approaches in the United States. It is pointed out that strong software patent protection in video game industry may intrude virtual spaces and stifle innovation, resulting in unnecessary costs in analyzing, litigating and licensing patents. This paper believes that property rights in virtual worlds are really

about social relations. For Europe to encourage the prosperity of creative industries, it is of foremost importance to realize the missions of the patent system and the features of the video game business, only then can Europe make its own satisfied legal arrangements of the social and economic relations in the real-world, and only then can Europe achieve the goals set by itself in the political and cultural strategies.

II. A review of video game patents

1. From copyright to patent protection

Video games are among the most complex forms of application of computer technology. A contemporary computer game may include advanced physics, artificial intelligence, 3D graphics, digitized sound, an original musical score, complex strategy and may use several input devices (such as mice, keyboards, gamepads and joysticks). Video games are a relatively new type of software product and as such the manner in which they are designed and developed is still evolving.[5] Programming is required throughout all phases of development except the early stage of game design. Most games are written with custom code based on the C programming language. Code is the set of computer language instructions that controls every aspect of the game. Popular game development language are C++, Java , C#, Ada and Python.

Computer programs are defined by the World Intellectual Property Organization (WIPO) as being: as: "a set of instructions capable, when incorporated in a machine readable medium, of causing a machine having information processing capabilities to

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[5] M.J. Taylor, M. Baskett and S.J. G.D. Wade Hughes, Using soft systems methodology for computer game design, Systems Research and Behavioral Science 24.3 (May-June 2007), P359

indicate, perform or achieve a particular function, task or result."[6] Considered as "literal expressions", computer programs fit comfortably into the copyright system. A computer program will be accorded copyright protection where the form of expression is original in the sense of being the author's own intellectual creation.[7] However, copyright does not protect "ideas" behind the computer programs, which often are a core part of their commercial value. Moreover, computer software can perform technical functions through creative expression. Patent can just be used to prevent competitors from making commercial use of the underlying functionality of the programs.

For example, in the *Atari Games Corp. v. Nintendo of America, Inc.* case, Atari copied the source code of Nintendo's 10NES program and successfully created its own "Rabbit" program to mimic the interactions of the Nintendo games / console. In this lawsuit, Nintendo filed for copyright infringement of the 10NES security program and infringement of U.S. Patent No. 4,799,635 ("the '635 patent"). The Court noted that while data notes and variable silences might be copyrightable within a musical composition, they are not copyrightable as a means to enable data communication. Nintendo, largely unable to avail itself of copyright protection for its 10NES data stream sequences, also relied on a traditional patent infringement claim. Nintendo's '635 patent covers the 10NES program:"[R]esetting said main data processor unit unless the execution of said first authenticating program by said first processor device

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[6] S.1 (i), WIPO Model provisions on the protection of computer software, Geneva (1978).

[7] Fernando Piera, IPR Protection of Computer Programs and Computer Software in the Global Market, 12 Currents Int'l Trade L.J. 15, Summer, 2003

exhibits a predetermined relationship to the execution of said second authenticating program by said second processor device." The Court found that Atari's liability may be based on contributory infringement. Accordingly, the Court granted Nintendo's summary judgment motion for patent infringement on this claim.

"Patents are inter-industry mechanisms for creating value. Copyright is creating protection between the industry and the channel or end customers."[8] In addition, the penalties for patent infringement are generally much harsher than for copyright infringement. Hence, patents are increasingly used as potent weapons against competitors in software industry.

2. Current contents for software patent protection in video games

(1) A game engine is the core software component of a computer video game or other interactive application with real-time graphics integrated rendering, collision detection, AI, visibility, networking and file system management into one complete engine. The popular game engines include Torque Game Engine, Truevision3D, C4 Engine, 3D Game Studio, and Unreal Engine, *etc*. In modern days, there are even entire game engines that handle most of the tasks of game programming and only require coding game logic. Developers seek patent protection on game engines, such as **"**Multi-protocol game engine" (US Patent 20070050838) and "Universal game engine for a game network and method therefor" (US Patent 6428413).

(2) A method or process performed by a game can also be patented, as instructed by

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[8] David S. Evans & Anne Layne-Farrar, Software Patents and Open source: The Battle over Intellectual Property Rights, 9 Va. J.L. & Tech. 10, § B(1)(a) ,2004

the object code executing on a computer or game console.[9] For example, the software patent "Game system, puzzle game program, and storage medium having program stored therein" (EP1291047) relates to a puzzle game apparatus, a puzzle game program, and a storage medium having the puzzle game program stored therein. Another software patent "Game bgm generating method and game apparatus" (EP1473705) relates to a storing medium that stores a game BGM generating program, a game BGM generating method, and a game apparatus.

(3) Game concepts are responsible for the fun of game playing and the sense of involvement. Novel game concepts may also be patentable. For instance, the concept of player sanity is patented by Nintendo. In the "Sanity system for video game" (US Patent 6935954), the game is programmed such that the sanity of the player or character is effected during game play as a result of occurrences in the game and/or by the decisions made by the player during game play. In addition, the level of sanity of the player is used to affect game play. In other words, the more insane the player becomes (i.e., the lower a player's sanity level becomes), the more the player will experience changes in the game that may affect the storyline for the game and/or hinder the player's ability to progress through the game.

III. Patent protection of software in Europe

1. Patentability of software in EPO

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[9] Ross Dannenberg, Esq. and Steve Chang, Esq, It's Just a Game, Right? Top Mythconceptions on Patent Protection of Video Games, May 31, 2005
http://www.gamasutra.com/features/20050531/dannenberg_01.shtml

Article 52 of the 1973 European Patent Convention (EPC) defines when the inventions are patentable. Article 52(1) states that: "European patents shall be granted for any inventions which are susceptible of industrial application, which are new and which involve an inventive step." Article 52(2) provides a list of things that in particular shall not be regarded as inventions, including: discoveries, scientific theories and mathematical methods; aesthetic creations; schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers; presentations of information. Article 52(3) states that: "The provisions of paragraph 2 shall exclude patentability of the subject-matter or activities referred to in that provision only to the extent to which a European patent application or European patent relates to such subject-matter or activities *as such*". It can be concluded that the EPC specifically excludes computer programs "as such" from being patentable subject matter. However, in practice the EPO and member states have found different policy reasons to get around the statutory proscriptions on the patenting of computer programs and business methods so that many software patents can be issued. It is observed that the EPO has granted more than 30,000 software-related patents since 1978 and it is alleged that many of these relate to business method type inventions and algorithms by viewing the invention as a process.[10]

In *Vicom Systems Inc.'s Application*, the Technical Board of Appeal reversed the rejection of the Examining Division of the EPO, noting that a claim directed to technical process which is carried out under the control of a program (whether the

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[10] Robert Bray, The European Union "Software Patents" Directive: What is It? Why is It? Where are We Now?, 2005 Duke L. & Tech. Rev. 11

implementation is in hardware or in software) should be allowable under Article 52(2)(c) and (3) EPC. The Board of Appeal held that the method for improved digital image processing cannot be regarded as relating to a computer program *as such*: "even if the idea underlying an invention may be considered to reside in a mathematical method, a claim directed to a technical process in which the method is used does not seek protection for the mathematical method as such."[11]

The Technical Board of Appeal further held in *Siemens A.G. v. Koch & Sterzel GmbH & Co.* that an invention must be assessed as a whole, and it is unnecessary to weigh up the technical and non-technical features. The Board of Appeal reasoned that "the European Patent Convention does not ask that a patentable invention be exclusively or largely of a technical nature; in other words, it does not prohibit the patenting of inventions consisting of a mix of technical and non-technical elements."[12]

In *In re Dai Nippon Insatsu*[13], the Board of Appeal held that "the units of the claimed apparatus are to be regarded as differing from conventional ones" and that "such programs are…to be regarded as tools." It follows that computer programs are patentable because they limit a general purpose computer to a specific purpose.

In the *Computer Program Product I and II* cases[14], the Board of Appeals added that if a program on a data carrier has the potential to produce a technical effect when run on a computer, the program itself should not be excluded from patentability. Moreover,

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[11] VICOM Systems Inc.'s Application [1987] O.J.E.P.O. at 19.

[12] Siemens A.G. et al. v. Koch & Sterzel GmbH & Co., 1988 O.J.E.P.O. 19, 24 (Tech. Bd. App. 1987)

[13] In re Dai Nippon Insatsu Kabushiki Kaisha, T 0605/93 (Tech. Bd. App. Jan. 20,1995)

[14] IBM/Computer Program Product T1173/97 [1999] OJ EPO 609; IBM/Computer Program Product II [1999] T0935/97

the requisite "technical effect" can be a potential technical effect. A computer program can be said to have a "further technical effect" if, when run on a computer, it provides a further technical effect which goes beyond the normal physical interactions between program code and the computer executing it, such as increased speed, or more rapid display of information, or a new type of display of information.

The 2004 *Auction Method/Hitachi* case is also a landmark decision interpreting Article 52 of the EPC. It made clear that the term "invention" is to be construed as "subject-matter having technical character." [15] The Board of Appeal also confirmed that a mixture a technical and non-technical feature may be patentable. The Board of Appeal stated that what matters having regard to the concept of "invention" within the meaning of Article 52(1) EPC is "the presence of technical character which may be implied by the physical features of an entity or the nature of an activity, or may be conferred to a non-technical activity by the use of technical means." Therefore, activities falling within the notion of "as such" would typically represent purely abstract concepts devoid of any technical implications.

Though hostile toward the patent protection of software exists, tens of thousands of software patents have been issued and the schemes of software patent are gradually established in EPO. Through a series of decisions, the Board of appeal has maintained that software patents must contain some form of technical element to be valid patentable subject matter. [16] However, controversies over the patentability tests

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[15] Auction method/HITACHI, T 258/03,OJ EPO, 2004

[16] Jack George Abid, Software patents on both sides of the Atlantic, 23 J. Marshall J. Computer & Info. L. 815, Summer, 2005

remain. There is still vagueness in identifying clearly the boundary line between what is and what is not a technical problem. As the German Federal Court of Justice commented, "I am not claiming that it is wrong to decide cases with reference to the word 'technical'. It happens all the time. What I am saying is that it is not a panacea. It is a useful servant but a dangerous master."[17]

2. Patentability of software in the UK

Harmonization and unification of patent laws has always been a primary issue of European patent system. National political blocks and industrial self-interest have largely constrained the movement of the integrated system. After a long and fierce debate, the Directive on the Patentability of Computer-Implemented Inventions (CII Directive) was rejected on 6 July 2005 by the European Parliament, which means the termination of the legislative procedure; therefore, individual member states will still decide the matter internally. The CII Directive intended to clarify the software patent situation within Europe and allow the patenting of certain types of computer-implemented inventions; however, the directive was strongly opposed for it would widen the extent to which software could be patented. However, even without the directive, patents on computer related inventions continue being granted by national offices and the European Patent Office.

Article 52(2) EPC is implemented in the UK by Section 1(2) of the Patents Act 1977. The United Kingdom Intellectual Property Office (UKIPO) has been taking an

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[17] The German Federal Court of Justice in XZB 15/98, "Sprachanalyseeinrichtung", 11 May 2000.

increasingly tough line on the patentability of computer-related inventions. In the 2006 Macrossan's Patent Application and *Aerotel v Telco* case, the UK court summarize various approaches which have been adopted by the EPO Board of Appeal, including: the contribution approach, the technical effect approach and the "any hardware approach". In the case, the court not only questioned the broader approach taken in the U.S. but also lamented the contradictory decisions of the EPO. The UK court pointed out that "the decisions of the EPO Boards of Appeal are mutually contradictory" and declined to follow the approach of the recent EPO cases (e.g. Microsoft), considering itself bound by its previous decision in *Merrill Lynch.* The UK court applied a new four-step test for evaluating business method patents[18], that is: (1) contribution to what; (2) what is the contribution; (3) whether these contributions are considered to fall solely within excluded subject-matter; (4) whether any technical contribution is found. Moreover, the UK court requested that the EPO clarify the questions regarding the exclusions to patentability set out in Article 52(2) EPC: "European patent judges ought, so far as they can, try to be consistent with one another, particularly in relation to the interpretation of national laws implementing provisions of the EPC."[19] This request was rejected by President of the EPO Alain Pompidou for "there is an insufficient legal basis for a referral"[20].

Since the *Aerotel/Macrossan* findings, the UK-IPO interpreted the Article 52(2) EPC

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[18] William Cook, Geoff Lees, Test clarified for UK software and business method patents: but what about the EPO, E.I.P.R. 2007, 29(3), 115-118

[19]   Aerotel v Telco, [2006] EWCA Civ. 1371

[20] Re: Court of Appeal Judgement [2006] EWCA Civ 1371, Alain Pompidou, 3 May, 2007, http://www.ipo.gov.uk/patent/p-decisionmaking/p-law/p-law-notice/p-law-notice-subjectmatter/p-law-notice-subjectmatter-letter.htm(Last visited Mar 12th, 2008)

more narrowly and rejected all software patents. Things did not change until Mr Justice Kitchin in the High Court decided in the *Astron Clinica's Application* case that, as a result of applying the test formulated in *Aerotel/Macrossan*, claims to a method performed by running a suitably programmed computer or to a computer programmed to carry out the method are allowable then, in principle, a claim to the program itself should also be allowable. In February 2008, based on the *Astron Clinica's Application* judgment, the UK-IPO issued a Practice Notice setting out a change in its approach to patents for computer programs in certain circumstances. The Practice Notice confirmed that where conditions are met, examiners will no longer object to claims to a computer program or a program on a carrier.[21] This decision is regarded as moving the UK's position on software claims into line with the EPO.

IV. The impact of patent protection of software in video game industry

1. European patent granted for a video football game

On 2 June, 2006, the Board of Appeal overturned a decision made by the EPO Examining Division and finally granted Konami Co. a patent for a video football game which marked the player in control of the ball and indicated the best direction to pass the ball. Game developer Konami made a European patent application related to a video game system in which two teams with several players compete with each other on a single game medium with an item such as a ball. The application was

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[21] Patents Act 1977: Patentable subject matter, UK Intellectual Property Office,7 February 2008
http://www.ipo.gov.uk/patent/p-decisionmaking/p-law/p-law-notice/p-law-notice-subjectmatter-20080207.htm(Last visited Mar 12th, 2008)

initially denied by the EPO Examining Division. The Examining Division ruled that the implementation of the remaining features is driven by the game rules and thus does not provide any non-obvious technical effect or non-obvious solution to a technical problem. [22] Konami appealed to the Board of Appeal.

The Board of Appeal was not convinced that the precise ring-shape of the guide mark achieved any effect other than an aesthetic impression. Though the Board admitted that it is true that the general desire to pass the ball from the active player character to a team mate is driven by the (non-technical) rules of the game, it stressed that this rule constraint has to be distinguished carefully from its technical implementation by which such locations are indicated to the user of the video game. In other words, while the fact that the team mates' locations should be known by the user may be regarded as a direct consequence of the game rules, the technical realization of how such locations are made known is not related to the game rules. The Board clarified the technical problem relates to conflicting technical requirements: "On the one hand, a portion of an image is desired to be displayed on a relatively large scale (e.g. zoom in); on the other hand, the display area of the screen may then be too small to show a complete zone of interest. Resolving that conflict by technical means implies a technical contribution which has to be considered in the inventive step discussion."[23]

In the light of the prior art available to it, the Board judged that the technical contribution addresses the conflicting technical requirements of displaying an

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[22] KONAMI / Video Game System and Storage Medium, T 0928/03, 2006
[23] Id.

enlarged portion of an image (into which the user may have zoomed) and keeping an overview of a zone of interest which is larger than the display area, therefore, the display device and method involve an inventive step.

From the sanity level of the characters to the game rules of passing the ball, patent claims have been allowed even though they seem to fit within the list of unpatentable subject matters. It is commented that in this case, the EPO has set another example of the broad approach it takes towards software applications in relation to patentability and technical contributions.[24] The EPO decision may gradually open the door for video game-related patent applications in Europe.

2. Europe and the US approaches compared

Compared to Europe, the US adopts a more liberal stance on patenting software in video game industry, "partly because they are the dominant market, and partly because this is the home of much of the technology involved."[25] The 1998 *State Street Bank and Trust Company v. Signature Financial* decision allowed patent protection for a computer with software that produces any useful, concrete, and tangible result.[26] The Court of Appeals for the Federal Circuit (CAFC) further confirmed this principle with *AT&T Corp v. Excel Communications* by ruling that patent claims containing mathematical algorithms need not involve physical transformations or conversion of subject matter from one state into another to be

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[24] Ting Low. European Union: Patents - Sport - Patentability of Video Football Game, Case Comment, Ent. L.R. 2007, 18(2), N20-21

[25] Andrew Sharples, The IT Patent Rush - The Stampede for Media Technology, Ent. L.R. 2001, 12(6), 195-197, 2001

[26] State Street Bank & Trust v. Signature Financial Group, 149 F.3d 1368 (Fed.Cir.1998)

deemed patentable subject mater. [27] This decision opens the door wide for the patentability of pure software claims. [28] As a result, the potential vagueness and suspect validity of many patents are called in to question. The heavy reliance on software patents to curb competition in video game industry also leads to vast cases and exorbitant business negotiations in the US. While procedures exist for challenging the validity of low-quality patents, they usually result in unnecessary and often exorbitant litigation, licensing and review costs.

The U.S. experience with software patents for video games serves as a warning: innovation can be stifled by the threat of litigation. Over the past two decades, the video game industry has consistently been at the center of litigation that has pushed and redefined copyright, trademark, trade secret, and patent laws, which is a trend that is likely to continue for the foreseeable future.[29] Since the EU has to compete with the US for the market share in the video game industry, it is important to clarify the issues of patent protection for software. The EPO's general reading of this Article by way of a restatement of the law by reference to an overarching principle which relies on a high degree of abstraction is considered as an attempt to reframe the law in more "civilian form".[30] Currently, difference still remains between the ostensible meaning of Article 52 EPC and how it is construed in practice. As the Lord Justice Jacob commented in the Aerotel/Macrossan, the exclusions stated in Article 52 EPC do not

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[27] AT&T Corporation v. Excel Communications, Inc., 50 USPQ 2d 1447 (Fed. Cir. 1999)

[28] John T. Soma, Kurt Leyendecker, Steven L. Webb, Software Patents: A U.S. and E.U. Comparison, 8 U. Balt. Intell. Prop. L.J. 1, Fall, 1999 / Summer, 2000

[29] John W. Branch, John LaBarre, and Nicholas Szabo, Gaming the System: Intellectual Property Protection for the Video Game Industry, Intellectual Property & Technology Law Journal, Volume 18, No.4, April 2006

[30] David Booton. The Patentability of Computer-Implemented Inventions in Europe, I.P.Q. 2007, 1, 92-116

share any common denominator—they are not all abstract or non-technical in character. "(The exclusions) are a disparate group--no common, overarching concept, for example, links rules for playing games with computer programs or with either of these methods for doing business or aesthetic creations." "What was done was to formulate the language of each of the categories independently of one another, add the 'as such' rider to all of them and leave it to the EPO and European patent judges to work out the detail."[31]

3. The effects of software patents on video game industry

The patentability of game software not only affects the operation of large video game firms, but also the freedom of creation for every freelance and commercial programmer. To access whether patent protection could enhance the innovation in the video game development in European market, and how far the scope of protection should extend, it is of first and foremost importance to understand the features of the video game industry.

First, a game is a hit for aesthetic and emotional reasons. According to Jesper Juul's classic game definition, games are rule-based and have variable and quantifiable outcomes. The different potential outcomes of the game are assigned different values, some positive and some negative. In the games, the players exert effort in order to influence the outcome and are emotionally attached to it. Games can be played with

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[31] Aerotel Ltd v Telco Holdings Ltd, and Patent Application by Neal William Macrossan [2006] EWCA Civ. 1371 (October 27, 2006)

or without real-life consequences.[32] The difference between computer games and non-computer games is that in the former classification, the rules of the games are a given—computer games just does not work any other way. In other words, video game developers program new and better rules on a computer for more intrigue and excitement. For example, the sanity system for video game actually sets a game rule on a computer that a player's sanity level would be affected by occurrences in the game such as encountering a gruesome situation, and this rule affects the potential outcomes of the game and the feelings of the players. However, it should be noted that pure game rules are not machines or processes for solving real-world problems. Thus, the abstract game rules, no matter how innovated they are, should never been deemed as a technical contribution, otherwise they will stifle creation and there would be no more fun and no more games.

Second, the creation of a game requires liberty and the collaborative spirit. Long gone are the days when a single programmer created an entire game. With the development of the global accepted internet platform, completing a successful large video game program means combining hundreds or thousands of ideas and constant interaction with the art staff. Revolutionary ideas and technologies would be rapidly incorporated in video games every minute, so it is both undesirable and unrealistic to apply serious encumbrances to the foundational building blocks of computer programming. What's worse, most patents are written as broadly as possible software patents are widely felt to violate. Excessive patent protection will create a horrible minefield in video game

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[32] Jesper Juul, Half-real: Video Games between Real Rules and Fictional Worlds, 2005, P36

industry. Because patents can cover various parts of a single program, they not only makes it very challenging to determine whether a technology has infringed existing patents, but also makes it very difficult for hobbyists and entrepreneurs to promote interoperability and emulation. To encourage the prosperity of video game industry in the long term, it is critical to preserve and promote the collaborative spirit of games, as well as the freedom to design and to play, which can finally tap the creative talents of technology designers and programmers in the video game community.

Third, games are half-real. Jesper Juul has fully discussed in his book the constantly evolving tension between real rules and fictions from the perspectives such as literary and film theory, computer science, psychology, economic game theory. In fact, this tension also reveals itself in the field of law. To protect the intangible assets of video games in a practical world, it is always necessary to separate the real from the virtual. It is true that "the line between real life and fantasy is easily blurred,"[33] however, to invite real-world laws into the virtual world, it must clarify where the boundaries of legal protection are in order to effectively regulate industry rather than intrude into the virtual space. "Strong intellectual property rights in real space are a burden on freedom of expression, although in many cases an acceptable burden. Strong intellectual property rights in virtual worlds, however, are a positive nuisance, and they may greatly inhibit the freedom to play as well as the freedom of players to design parts of the virtual world."[34] Patents should not be awarded for game software

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[33] Tracy Spaight, Who Killed Miss Norway?, *in* The State of Play: Law, Games, and Virtual Worlds (Jack Balkin and Beth Simone Noveck eds., 2006), P189

[34] Jack M. Balkin, Virtual Liberty: Freedom to Design and Freedom to play in Virtual Worlds, Virginia Law Review, Vol. 90, No. 8, December 2004

merely manipulating abstract logic ideas and solves a purely mathematical problem, but only for technologies that have a specific contribution over all prior art. The definition of technology is the "application of science and engineering to the development of machines and procedures in order to enhance or improve human conditions, or at least improve human efficiency in some respect."[35] Therefore, a new and non-obvious technology is an activity that enhances human culture, not a bingo idea that escalates complexity and difficulty of the game design.

Yochai Benkler proposes in his article that property rights in virtual worlds are really about social relations. The question of "who should own this spoon?" in the virtual world should be understood as a question about what we want the social relations using the platform to be like.[36] This is also a serious question that the Europe should consider: to gain a competitive edge in the global video game market and to encourage the creative online content, what kind of social relations are expected in the video game industry? The patent policies and laws of software protection actually reflect a normative belief about how these relations should go— whether to enlarge monopoly power of the giant game companies or to nurture the potential of a collaborative network. The software patent regime has a profound impact on the video game industry. No matter what polices are taken into consideration, efforts should be focused on a better system and higher standards of examination to assure that only

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[35] Computer Dictionary 384, Microsoft Press, 2d ed. 1994

[36] Yochai Benkler, There is No Spoon, *in* The State of Play: Law, Games, and Virtual Worlds, (Jack Balkin and Beth Simone Noveck eds., 2006), P180

truly novel patents are being granted.[37]

V. Conclusion

In the European Interactive Games—the 2005 State of the Industry Report, it is concluded that compared with the dynamic North American game market, "European launches are fraught with difficulties - from adherence to local laws and customs, to catering for language and currency diversity."[38]

It is true that today's video games require higher investment costs, longer development time and larger production teams. Most modern games take from one to three years to complete. There is also little doubt that commercial game distribution is largely controlled by giant publishers, who often base their strategies on exclusivity. However, this is not the end of the story. Developers are becoming increasingly reliant upon outsourcing and third party tools and technologies. There are many independent small companies and groups assembling with shareware, freeware and open source software. Most of these "indie developers" spin out from local universities or local companies, and they are generally motivated by strong personal interest in the title they are working on. As analyzed in the preceding sections, successful games depend on the efforts of a creative and liberal network. Europe is advantageous at higher population level, PC homes and Internet users, and this is the key to the maintenance of the long-term growth.[39] If the European video game industry hopes to continue

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[37] David S. Evans et al., Software Patents and Open Source, 9 Va. J.L. & Tech. 10, 55 , 2004

[38] Nick Gibson& Ben Keen, European Interactive Games: The 2005 state of the industry report, Published March 2005 by Screen Digest Limited, P13

[39] Id.

growing, what it needs are not high entry barriers, such as strict patent polices, but highly effective and sustainable models of creative collaboration.

Facing various legislative options, it is important for Europe to fully realize the particular features of each business. In the real-life game of the software patent protection, multiple players are ready and the goal has been set to promote economic welfare, but the rules and standards of this game are still ambiguous and controversial. Will the European player gain maximum momentum from this interactive virtual world? The game is not yet over.