

# COPYRIGHT AND COMPUTER-GENERATED MATERIALS – IS IT TIME TO REBOOT THE DISCUSSION ABOUT AUTHORSHIP?

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*Computer generated materials are ubiquitous and we encounter them on a daily basis, even though most people are unaware that this is the case. Blockbuster movies, television weather reports and telephone directories all include material that is produced by utilising computer technologies. Copyright protection for materials generated by a programmed computer was considered by the Federal Court and Full Court of the Federal Court in Telstra Corporation Limited v Phone Directories Company Pty Ltd.<sup>1</sup> The court held that the White and Yellow pages telephone directories produced by Telstra and its subsidiary, Sensis, were not protected by copyright because they were computer-generated works which lacked the requisite human authorship.*

*The Copyright Act 1968 (Cth) does not contain specific provisions on the subsistence of copyright in computer-generated materials. Although the issue of copyright protection for computer-generated materials has been examined in Australia on two separate occasions by independently-constituted Copyright Law Review Committees over a period of 10 years (1988 to 1998), the Committees' recommendations for legislative clarification by the enactment of specific amendments to the Copyright Act have not yet been implemented and the legal position remains unclear. In the light of the decision of the Full Federal Court in Telstra v Phone Directories it is timely to consider whether specific provisions should be enacted to clarify the position of computer-generated works under copyright law and, in particular, whether the requirement of human authorship for original works protected under Part III of the Copyright Act should now be reconceptualised to align with the realities of how copyright materials are created in the digital era.*

## I: INTRODUCTION

Much of the content we encounter on a daily basis is produced by computerised processes and there is little or no human input into the completed work. For these computer-generated materials, the programmed computer is not merely a tool used by the author to assist in producing the work but, rather, the work is created by the computer, without any significant expenditure of human skill or effort. Familiar examples of computer-generated materials include animated images created by movie studios for cartoons and special effects; computer software produced by generator software; crosswords produced by a computer using a random generator; weather maps generated with data obtained from weather balloons, satellites and monitoring stations; share price lists produced from automatic data

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<sup>1</sup> *Telstra Corporation Limited v Phone Directories Company Pty Ltd* [2010] FCA 44, Gordon J; [2010] FCAFC 149, Keane CJ, Perram and Yates JJ.

transmissions from stock markets; 3D landscapes and environments used for simulations; and synthesised music.

The issue of copyright protection for computer-generated materials has arisen in recent cases<sup>2</sup> and was directly at issue in *Telstra Corporation Limited v Phone Directories Company Pty Ltd*<sup>3</sup> (*Telstra v Phone Directories*) which dealt with the subsistence of copyright in the White and Yellow pages telephone directories published by Telstra and its subsidiary, Sensis. At first instance<sup>4</sup> and on appeal to the Full Court of the Federal Court,<sup>5</sup> it was held that the directories, consisting of telephone subscriber listings produced by ‘an automated computerised process’,<sup>6</sup> were not protected by copyright because they were computer-generated works lacking the requisite human authorship.

During the last 20 years, as computer technologies have become increasingly sophisticated and widely used, so too has the economic significance of the materials produced with computers grown.<sup>7</sup> Computer-generated compilations of the kind considered in *Telstra v Phone Directories* are increasingly commonplace, examples being ‘internet compilations such as car sale sites, real estate sites, job search sites, and so forth’.<sup>8</sup> However, the reasoning in the *Telstra v Phone Directories* decisions would see not only such compilations but also a much more extensive range of creative and informational content relegated outside the scope of copyright. The increasing prevalence and economic importance of computer-generated materials means that the question of how copyright applies to such materials, the concept of authorship in relation to materials whose production involves a programmed computer and the appropriate scope of copyright are issues that need to be re-addressed in light of the realities of the forms and modes of production of content in the digital age.

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<sup>2</sup> The requirement of human authorship was also considered in *IceTV Pty Ltd v Nine Network Australia Pty Ltd* [2009] HCA 14 and *Acohs Pty Ltd v Ucorp Pty Ltd* [2010] FCA 577; [2012] FCAFC 16.

<sup>3</sup> [2010] FCA 44; [2010] FCAFC 149; [2011] HCATrans 248.

<sup>4</sup> *Telstra Corporation Limited v Phone Directories Company Pty Ltd* [2010] FCA 44, Gordon J.

<sup>5</sup> *Telstra Corporation Limited v Phone Directories Company Pty Ltd* [2010] FCAFC 149, Keane CJ, Perram and Yates JJ.

<sup>6</sup> [2010] FCAFC 149, at [3] per Keane CJ.

<sup>7</sup> When the first computer software enabling a computer to create works independently or with minimal human contribution became available in the 1970s, the works produced were of little or no economic value. Computer music was the earliest form of computer-generated material, but it was of a much lower quality than the technically advanced electronic music now available. Likewise, the works produced by the generator computer programs that became available in the 1980s – fractal art pictures, anagrams and poems – were not regarded as being of economic value and were largely ignored. The breakthrough which saw computer-generated works become commercially significant was the movie ‘Toy Story’, produced by Pixar Animation Studios and released by Walt Disney Pictures in 1995, the first feature length computer-animated film. It was a huge success, grossing nearly \$362 million worldwide, and was followed by two even more successful sequels, ‘Toy Story 2’ (1999) and ‘Toy Story 3’ (2010). Since ‘Toy Story’ was released, there have been many blockbuster films that contain or consist entirely of computer generated images, including, ‘Titanic’ (1997) and ‘Star Wars Episode I: The Phantom Menace’ (1999).

<sup>8</sup> Counsel for Telstra and Sensis, Mr N J Young, QC, in the hearing of the application for special leave to appeal to the High Court: [2011] HCATrans 248.

## II: ORIGINALITY AND AUTHORSHIP AS CORRELATES

For copyright to subsist in a work that falls within the categories described in Part III of the *Copyright Act 1968* (Cth) (the Act) – literary, dramatic, musical and artistic works – the work must be *original*.<sup>9</sup> The concept of originality has long been regarded as closely correlated with the notion of authorship,<sup>10</sup> which is central to the statutory protection conferred under the *Copyright Act*.<sup>11</sup> However, as neither ‘original’ nor ‘author’<sup>12</sup> is defined in the Act, the meaning of the terms is found in judicial decisions.

Classic explanations of originality make it clear that an original work is one that has originated from or been brought into existence by an author or authors and has not been copied from a previously existing work.<sup>13</sup> ‘Author’ is used in the sense of ‘the person who brings the copyright work into existence in its material form’.<sup>14</sup> Or, simply stated, ‘original works emanate from authors’.<sup>15</sup> To attract copyright, the work need not express original or inventive ideas, as explained in *Computer Edge Pty Ltd v Apple Computer Inc* (1986) 161 CLR 171 at 182; [1986] HCA 19 at [11] by Gibbs CJ who quoted with approval Peterson J’s statement in *University of London Press Ltd v University Tutorial Press Ltd* [1916] 2 Ch 601 at 608–9:

The originality which is required relates to the expression of thought. But the [*Copyright Act*] does not require that the expression must be in an original or novel form, but that the work must not be copied from another work – that it should originate from the author.

The centrality of authorship is supported by provisions in Part III of the *Copyright Act 1968* that connect the subsistence of copyright in original literary, dramatic, musical and artistic works to an author who is a natural (human) person.<sup>16</sup> Section 32 provides that copyright subsists in an original Part III work if the author was a ‘qualified person’ at the time the work was made (in the case of unpublished works)<sup>17</sup> or first published (in the case of published

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<sup>9</sup> *Copyright Act 1968* (Cth) ss 32(1), (2).

<sup>10</sup> *IceTV Pty Ltd v Nine Network Australia Pty Ltd* (2009) 239 CLR 458; [2009] HCA 14 at [34] per French CJ, Crennan and Kiefel JJ, citing *Sands & McDougall Pty Ltd v Robinson* [1917] HCA 14; (1917) 23 CLR 49 at 55 per Isaacs J.

<sup>11</sup> *IceTV Pty Ltd v Nine Network Australia Pty Ltd* (2009) 239 CLR 458; [2009] HCA 14 at [22] per French CJ, Crennan and Kiefel JJ.

<sup>12</sup> The *Copyright Act 1968* (Cth), s 10(1) provides an explanation of ‘author’ only in relation to cinematograph films, meaning ‘the maker of the film’; ‘maker’, in turn, means ‘the director of the film, the producer of the film and the screenwriter of the film’. The Act recognises that a copyright work may be produced by joint authors, defining a ‘work of joint authorship’ as ‘a work produced by the collaboration of two or more authors and in which the contribution of each author is not separate from the contribution of the other author or the contributions of the other authors’: *Copyright Act 1968* (Cth), s 10. A reference to ‘an author of a work’, in relation to a work of joint authorship, is a reference to all authors of the work: *Copyright Act 1968* (Cth) s 78.

<sup>13</sup> *Sands & McDougall v Robinson* (1917) 23 CLR 49; [1917] HCA 14; *Data Access Corporation v Powerflex Services Pty Ltd* (1999) 202 CLR 1; [1999] HCA 49.

<sup>14</sup> *Victoria Park Racing and Recreation Grounds Co Ltd v Taylor* (1937) 58 CLR 479 at 511 per Dixon J; *IceTV Pty Ltd v Nine Network Australia Pty Ltd* (2009) 239 CLR 458; [2009] HCA 14 at [33] per French CJ, Crennan and Kiefel JJ; at [98] per Gummow, Hayne and Heydon JJ.

<sup>15</sup> *IceTV Pty Ltd v Nine Network Australia Pty Ltd* (2009) 239 CLR 458; [2009] HCA 14 at [96] per Gummow, Hayne and Heydon JJ.

<sup>16</sup> *Telstra Corporation Limited v Phone Directories Company Pty Ltd* [2010] FCAFC 149, at [134] per Yates J.

<sup>17</sup> *Copyright Act 1968* (Cth) s 32(1). In the case of an unpublished Part III work, the author must have been a qualified person at the time when or during a substantial part of the period in which the work was made.

works).<sup>18</sup> For the purposes of Part III, a ‘qualified person’ is an Australian citizen or a person resident in Australia.<sup>19</sup> Further, duration of copyright in Part III works is calculated by reference to the year in which the author of the work dies.<sup>20</sup>

However, the existence of a human author is not a requirement for copyright protection of ‘other subject matter’ under Part IV of the *Copyright Act*.<sup>21</sup> In the case of a sound recording or cinematograph film, reference is made to the ‘maker’, which must be a qualified person at the time the recording or film is made.<sup>22</sup> For Part IV subject matter, ‘qualified person’ is given a broader meaning than for Part III works,<sup>23</sup> encompassing Australian corporations as well as Australian citizens and other legal persons<sup>24</sup> resident in Australia.<sup>25</sup> In the case of sound and television broadcasts, the originality requirement does not apply as copyright subsists by reference to the broadcaster’s output rather than by reference to originality; copyright subsists as soon as the broadcast is made in Australia by a licensed broadcaster.<sup>26</sup>

## II: USE OF COMPUTERS TO CREATE MATERIALS

Traditional notions of authorship are premised on the creation of works by an individual author or by two or more persons who collaboratively produce a jointly authored work in which the contribution of each author is not separable from that of the others.<sup>27</sup> However, long-standing concepts of authorship are challenged by advances in computer technology which mean that many works are now produced as a result of separate contributions by numerous individuals and their creation involves the use of computers, computer programs and equipment such as scanners and digital cameras.<sup>28</sup> In conceptualising authorship of works produced with computers much of the discussion has centred around the difference between works created *with the use of* a computer (‘computer-aided’ or ‘computer-assisted’ works) and works created *by* a computer (‘computer-generated’ works). Although some

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<sup>18</sup> Where a Pt III work has been published, copyright subsists in the work if the first publication of the work takes place in Australia or if the author is a qualified person at the time it is first published: s 32(2)(c)-(d). If the work is first published posthumously, copyright subsists in the work if the author was a qualified person immediately before his or her death: s 32(2)(e).

<sup>19</sup> *Copyright Act 1968* (Cth) s 32(4).

<sup>20</sup> *Copyright Act 1968* (Cth) s 33.

<sup>21</sup> The subject matter protected under Part IV of the *Copyright Act 1968* (Cth) is: sound recordings (s 89), cinematograph films (s 90), television broadcasts and sound broadcasts (s 91) and published editions of works (s 92). See *Telstra Corporation Limited v Phone Directories Company Pty Ltd* [2010] FCAFC 149, at [135] per Yates J.

<sup>22</sup> *Copyright Act 1968* (Cth) s 89(1) (sound recordings) and s 90(1) (cinematograph films). ‘Maker’ is defined in relation to cinematograph films only, as the director, producer and the screenwriter of the film: *Copyright Act 1968* (Cth) s 10(1).

<sup>23</sup> *Copyright Act 1968* (Cth) s 32(4).

<sup>24</sup> That is, other than corporations.

<sup>25</sup> *Copyright Act 1968* (Cth) s 84.

<sup>26</sup> *TCN Channel Nine Pty Ltd v Network Ten Ltd* (2002) 55 IPR 112 at [34] per Hely J. The connecting factors for television and sound broadcasts are that they are made from a location in Australia by the Australian Broadcasting Authority (ABC), the Special Broadcasting Service (SBS) or the holder of a licence under the *Broadcasting Services Act 1992* (Cth): *Copyright Act 1968* (Cth) s 91.

<sup>27</sup> *Copyright Act 1968* (Cth) s 10(1) defines ‘work of joint authorship’ as meaning ‘a work that has been produced by the collaboration of two or more authors and in which the contribution of each author is not separate from the contribution of the other author or the contributions of the other authors’.

<sup>28</sup> Note the comments in *IceTV Pty Ltd v Nine Network Australia Pty Ltd* (2009) 239 CLR 458; [2009] HCA 14 at [22]–[23] per French CJ, Crennan and Kiefel JJ. See also *Acobs Pty Ltd v Ucorp Pty Ltd* [2010] FCA 577 at [54]–[60], per Jessup J.

works will be readily able to be categorised as either works of human authorship or as having 'no human author',<sup>29</sup> often the demarcation will not be so easily drawn.

In the case of computer-aided works, the work is produced by a human author using a programmed computer as a tool that facilitates or assists the creation of the work. An example is a literary work (such as a letter or a book) which is created by an author with the use of a computer running word processor software such as Microsoft Word or Open Office. In this instance, it is clear that the text originates from the human author who creates the written document by entering it into the word processing program on the computer. Here, the computer is a convenient tool used by the author to create the digital or hard copy expression of the literary work, analogous to the use of a pen or a typewriter to write a letter, a brush to paint a portrait and a camera to take a photograph.<sup>30</sup> A familiar example is the use of computer-aided design (CAD) programs by architects to draft and draw building plans. Although CAD computer programs contain predesigned elements (squares, rectangles, etc.), the building plan is created by the human author who selects and arranges the standardised elements to give expression to his ideas. Here, the computer is simply a tool that aids, assists and supports the draftsman in creating the plan.

In the case of computer-generated works, the work is produced by a computer in circumstances such that it cannot be said that there is a human author of the work. Such works may be produced in circumstances where there is no, or minimal, human contribution or where 'the human contribution was merged with the contribution by the computer into a whole work in a way that it is impossible to determine the authorship in relation to those contributions'.<sup>31</sup> The Copyright Law Review Committee has explained the creation of computer-generated works by reference to satellite images of weather patterns, vegetation and geological formations:

In many cases the data that makes up these images is collected automatically by remote sensors on satellites. The information is automatically processed by specialised computer programs and the final image down loaded or printed out in hard copy form either automatically or at the press of a button.<sup>32</sup>

An intermediate category has also been identified, consisting of works created as a result of the contributions of the person using the programmed computer, the developer of the computer program and the person who created any database that the program uses. Works

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<sup>29</sup> See, for example, *Payen Components South Africa Ltd. v Bovic Gaskets CC* (448/93) [1995] ZASCA 57; 1995 (4) SA 441 (AD); [1995] 2 All SA 600.

<sup>30</sup> *Express Newspapers plc v Liverpool Daily Post and Echo plc* (1985) 5 IPR 193 at 196 per Whitford J.

<sup>31</sup> R Hart, 'Author's own intellectual creation – computer-generated works' (1993) Vol. 9(4) *CLSR* 164. An illustration of a computer-generated work is provided by the movie, 'The Mummy', which includes a battle scene featuring an army of mummies running across the desert. To create the scene, the movie studio first produced a single model of a mummy (including its limb movements) and used a computer program to generate many different types of mummies and their corresponding limb movements. A computer program was then utilised to create all the frames in the scene. The only parameter specified by a person was the period of time within which all the mummies had to cross the desert, between 8 and 21 seconds. As the specification of a timeframe is akin to setting a word limit in an essay writing task, it cannot be regarded as a human contribution to the creation of the scene. In this example, the variations of the mummy, the individual frames and the film sequence are all computer-generated works.

<sup>32</sup> Copyright Law Review Committee, *Computer Software Protection: Final Report*, Attorney-General's Department, Canberra (April 1995) at [13.11] and [13.12] (reports generated by expert systems); available at <http://www.austlii.edu.au/au/other/clrc/6.html#Heading2222>.

in this category include specialist, professional software and music produced with a music synthesiser. The human contribution may be relatively insignificant when compared to the contribution by the computer, such as where a person sets the note parameters for a musical composition computer which then independently composes an opus of several hours duration.

### III: COPYRIGHT AND COMPUTER-GENERATED WORKS

The issue of authorship of works produced with computers was raised by the United States Register of Copyrights as long ago as 1965, after the first applications for copyright registration were received for a computer-generated musical composition and for an abstract drawing and various compilations that were ‘at least partly [the] “work” of computers’.<sup>33</sup> Observing that both the number of works produced by computer and the difficulties relating to authorship would increase as computer technology developed and became more sophisticated, the Register commented:

The crucial question appears to be whether the ‘work’ is basically one of human authorship, with the computer merely being an assisting instrument, or whether the traditional elements of authorship in the work (literary, artistic, or musical expression or elements of selection, arrangement, etc.) were actually conceived and executed not by man but by a machine.<sup>34</sup>

The issue arose again in copyright law reviews in the United Kingdom<sup>35</sup> and the United States<sup>36</sup> in the 1970s and was later considered by the European Commission<sup>37</sup> and the World Intellectual Property Organisation (WIPO).<sup>38</sup>

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<sup>33</sup>The Register of Copyrights at the time was Abraham Kaminstein. United States Copyright Office, *Sixty-eighth Annual Report of the Register of Copyrights for the Fiscal Year Ending June 30, 1965*, Library of Congress (1966); available at <http://www.copyright.gov/reports/annual/archive/ar-1965.pdf>.

<sup>34</sup> *Ibid*, 5.

<sup>35</sup> United Kingdom Government, *Report of the Whitford Committee to consider the law on Copyright and Designs*, Cmd 6732 (1977).

<sup>36</sup> United States Government, *Final Report of the National Commission on New Technological Uses of Copyrighted Works (31 July 1978)*, (CONTU), Library of Congress, Washington DC (1979), at pp 1, 43-46. CONTU recommended that ‘[w]orks created by the use of computers should be afforded copyright protection if they are original works of authorship’ and ‘that existing statute and case law adequately cover any questions involved’, so no amendment of the *Copyright Act* of 1976 (17 U.S.C. ) was required. The issue was considered again by the United States Congress’s Office of Technology Assessment in 1986. See United States Congress, Office of Technology Assessment, *Intellectual Property Rights in an Age of Electronics and Information* (1986) at pp 70-73. For comment, see: Pamela Samuelson, ‘Allocating Ownership Rights in Computer-Generated Works’, (1985) 47 *U. Pitt. L. Rev* 1185; Arthur R Miller, ‘Protection for Computer Programs, Databases, and Computer-Generated Works: Is Anything New Since CONTU?’ (1993) 106 *Harvard Law Review* 977 at pp 1068-1070.

<sup>37</sup> Commission of the European Communities, *Green Paper on Copyright and the Challenge of Technology – Copyright Issues Requiring Immediate Action* COM (88) 172 final (1988).

<sup>38</sup> See WIPO, *Model Provisions on the Protection of Computer Software*, WIPO Document No. 814(E), WIPO, Geneva (1978); Committee of governmental experts on copyright problems arising from the use of computers for access to or the creation of works, *Report adopted by the Committee of governmental experts on copyright problems arising from the use of computers for access to or the creation of works*, UNESCO/WIPO/CEGO/1/7, UNESCO, Paris (1981); Working Group on Copyright Problems arising from the use of computers, *Report of the Working Group on Copyright Problems arising from the use of computers*, UNESCO/WIPO/GTO/8, WIPO, Geneva (1979); Second committee of governmental experts on copyright problems arising from the use of computers for access to or the creation of works, *Report (7-11 June 1982)*, UNESCO/WIPO/CEGO/II/7, UNESCO, Paris (1982); Committee of experts on model provisions for legislation in the field of copyright, *Draft Model Law on Copyright (Memorandum prepared by the International Bureau of WIPO)*, WIPO Document No. CE/MPC/III/2, WIPO, Geneva (30 March 1990); Committee of experts on a possible protocol to the Berne Convention for the protection of literary and artistic works, *Questions Concerning a Possible Protocol to the Berne Convention, Part 1, Memorandum prepared by the International Bureau*, WIPO Document No. BCP/CE/I/2, WIPO, Geneva (18 July 1991). The

The *Copyright Act 1968* does not contain any specific provisions addressing the effect of the use of computerised or digital technologies in creating materials that fall within the scope of protected works and other subject matter described in Parts III and IV of the Act. In particular, the *Copyright Act* is silent on whether Part III works produced by such means can be considered to satisfy the requirement that copyright works must be original works emanating from an author.

In practice, the absence of specific legislative provisions has not prevented the courts from finding that copyright subsists in Part III works and Part IV subject matter produced with computer technologies.<sup>39</sup> In *Sega Enterprises Ltd v Galaxy Electronics Pty Ltd*,<sup>40</sup> the arcade video games ‘Virtua Cop’ and ‘Daytona USA’, which displayed computer-generated images, were held to be cinematograph films protected by copyright. The images displayed on the screen when the game was played were not pre-existing images but were produced by real-time computer graphics, being synthesised ‘on the fly’ by the controlling computer program. The images were generated through the interaction of a game player’s responses and the computer program which used the mathematical coordinates of models of objects, together with animation and texture mapping data to create images on the screen.

In *Data Access Corporation v Powerflex Services Pty Ltd*<sup>41</sup> the High Court held that a compression table in the plaintiff’s Dataflex computer program, which had been produced with another computer program written by the plaintiff, was an original literary work protected by copyright. To create the Dataflex Huffman compression table, the plaintiff had first written a program that applied the Huffman algorithm<sup>42</sup> to a database file (SERIAL.DAT) which provided a representative sample of data for standard compressions. The High Court had little hesitation in holding that the Dataflex Huffman compression table was an original literary work produced by an author, observing:

The skill and judgment employed by Dataflex was perhaps more directed to writing the program setting out the Huffman algorithm and applying this program to a representative sample of data than to composing the bit strings in the Huffman table. Nevertheless, the standard Dataflex Huffman table emanates from Dataflex as a result of substantial skill and judgment. That being so ... the standard Dataflex Huffman table constituted an original literary work.<sup>43</sup>

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issue was discussed by WIPO members in relation to the modernisation of the Berne Convention: Committee of Experts on a Possible Protocol to the Berne Convention for the Protection of Literary and Artistic Works in 1991. However, the issue of copyright in computer-generated works was ‘seen as premature for express treatment in the Protocol’: Ralph Oman and Lewis Flacks, ‘Berne Revision: The Continuing Drama’ (1993) 4:1 *Fordham Intellectual Property, Media and Entertainment Law Journal* 139 at p 146; see also Arthur Miller, ‘Copyright Protection for Computer Programs, Databases, and Computer-Generated Works: Is Anything New since CONTU?’ (1993) 106 *Harr. L. Rev.* 977 at p 1052.

<sup>39</sup>See for example, *Nominet UK v Diverse Internet Pty Ltd* [2004] FCA 1244, at [25]-[35].

<sup>40</sup> *Sega Enterprises Ltd v Galaxy Electronics Pty Ltd* [1996] FCA 761, Burchett J; *Galaxy Electronics Pty Ltd v Sega Enterprises Ltd* [1997] FCA 403, Lockhart, Wilcox and Lindgren JJ. See also *Nintendo Co Ltd v Golden China TV-Game Centre* (1993) 28 IPR 313.

<sup>41</sup> [1999] HCA 49.

<sup>42</sup>In *Data Access Corporation v Powerflex Services Pty Ltd* [1999] HCA 49 at [115], the High Court explained the Huffman algorithm as follows: ‘The Huffman algorithm, when expressed in source code, analyses a data file to determine the relative frequency of the occurrence of characters, and then assigns a bit string of appropriate length to each character, depending on its frequency of occurrence.’

<sup>43</sup> *Data Access Corporation v Powerflex Services Pty Ltd* [1999] HCA 49 at [122].

#### IV: THE UNITED KINGDOM'S LEGISLATIVE SOLUTION – DEFINING THE 'AUTHOR' OF COMPUTER-GENERATED WORKS

The United Kingdom was the first jurisdiction to introduce provisions addressing authorship and the subsistence of copyright in computer-generated works, which were included in the *Copyright, Designs and Patents Act 1988* (UK) (CDPA).<sup>44</sup> Various reasons for enacting specific provisions emerge from the consultations and reviews that preceded the CDPA.<sup>45</sup> These include an acknowledgement of the reality that computer technology was being used to create materials of the kind protected by copyright<sup>46</sup> and that the law should provide flexibility for future technological developments,<sup>47</sup> the objective of future-proofing copyright law in the face of rapid changes in technology, and the need to make the law easier to understand and apply.<sup>48</sup>

The CDPA makes it clear that computer programs may be used to generate literary, dramatic, musical and artistic works that will attract copyright protection and establishes the principle that the person who creates the work will be regarded as its author. A 'computer-generated' work is defined as one 'generated by computer in circumstances such that there is no human author of the work'.<sup>49</sup> Section 9(3) of the CDPA provides that '[i]n the case of a literary, dramatic, musical or artistic work which is computer-generated, the author shall be taken to be the person by whom the arrangements necessary for the creation of the work are undertaken'. Copyright in computer-generated works expires after 50 years from the end of the calendar year in which the work was made.<sup>50</sup>

The effect of the CDPA provisions is that where a literary, dramatic, musical or artistic work is computer-generated, it may attract copyright protection because authorship is attributed to the person who undertook the arrangements necessary for the creation of the work.<sup>51</sup> As s 9(3) of the CDPA only applies to works generated by a computer in circumstances where there is no human author, if a work is created by a human author with the use of a computer (a computer-assisted work), it would qualify for copyright protection under the general principles of copyright law provided it is sufficiently original and meets the

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<sup>44</sup> Similar provisions, based on those in the *Copyright, Designs and Patents Act 1988* (UK), have been introduced into the copyright legislation in New Zealand, Ireland, Hong Kong, India and South Africa. See, for example, *Copyright Act 1994* (New Zealand), ss 2, 5(1)-(2), 22(2); *Copyright Act 1957* (India), s2(a)(vi); *Copyright Ordinance 2007* (Hong Kong), ss 11(3), 17(6); *Copyright Act 1978* (South Africa), s 1(1); *Copyright and Related Rights Act 2000* (Ireland), ss 2, 22, 30.

<sup>45</sup> United Kingdom Government, *Report of the Whitford Committee to consider the law on Copyright and Designs*, Cmd 6732 (1977); *Green Paper (Reform of the Law relating to Copyright, Designs, and Performers Protection)* Cmd 8302 (1981); *Green Paper (Intellectual Property Rights and Innovation)* Cmd 9117 (1983); *White Paper (Intellectual Property and Innovation)* Cmd 9712 (1986).

<sup>46</sup> Official Report Fifth Series, Parliamentary Debates, Lords, Vol. 489, 1987-1988, Oct. 20 1987-Nov. 20 1987, column 1476.

<sup>47</sup> Official Report Fifth Series, Parliamentary Debates, Lords, Vol. 489, 1987-1988, Oct. 20 1987-Nov. 12 1987, column 1476.

<sup>48</sup> United Kingdom Government, *Report of the Whitford Committee to consider the law on Copyright and Designs*, Cmd 6732 (1977) at p 4: 'a principal objective in any future legislation must be that copyright law should be 'placed on a plain and uniform basis'.

<sup>49</sup> *Copyright, Designs and Patents Act 1988* (UK) s 178.

<sup>50</sup> *Copyright, Designs and Patents Act 1988* (UK) s 12(7).

<sup>51</sup> This approach is found in legislation in other countries that have followed the approach taken in the CDPA. For example, the South African *Copyright Act 1978* (South Africa), was amended in 1992 to insert a new paragraph (h) in the definition of 'author' in s 1(1) of the Act, to provide that 'author', in relation to 'a literary, dramatic, musical or artistic work or computer program which is computer-generated, means the person by whom the arrangements necessary for the creation of the work were undertaken'.



other statutory requirements. The CDPA does not demarcate the boundary between works which have ‘no human author’ and those which do.

The operation of s 9(3) of the CDPA was considered in *Nova Productions Ltd v Mazooma Games Ltd*,<sup>52</sup> a case involving electronic pool games. Individual frames displayed on screen when the game was played were held to be computer-generated artistic works authored by the person who had ‘devised the appearance of the various elements of the game and the rules and logic by which each frame is generated and [who] wrote the relevant computer program’. Having undertaken the arrangements necessary for the creation of the computer-generated images, he was deemed to be their author by virtue of s 9(3) of the CDPA.<sup>53</sup>

Twenty-five years after the enactment of the CDPA provisions, they can be seen to have been drafted with foresight and an appreciation of the potential impact that emerging technologies would have on copyright. Although they were introduced at the dawn of the era of mass market personal computers and software and pre-date the World Wide Web, they foreshadowed the ensuing digital revolution and the vast increase in ‘born digital’ copyright materials. To retain the traditional concept of authorship, which required the observable input of a human author, would have restricted the scope of copyright in digital materials by excluding a vast range of imaginative, creative and valuable computer-generated materials from its scope. By re-casting originality to focus on the efforts of the person who made the arrangements for the creation of a computer-generated work, the CDPA provisions adapted the framework of copyright in the United Kingdom to the digital era.

## V: THE AUSTRALIAN SOLUTION – TOWARDS A RECONCEPTUALISATION OF AUTHORSHIP FOR ALL COPYRIGHT MATERIALS

The question of copyright protection for computer-generated works has been considered in Australia by the Copyright Law Review Committee (CLRC) twice, with each inquiry resulting in recommendations for statutory clarification of the issue.<sup>54</sup> The copyright status of works produced with computers was first considered by the CLRC in the Computer Software Protection inquiry,<sup>55</sup> from 1988 to 1994, and was again examined during the Simplification of the Copyright Act inquiry (Simplification reference) from 1995 to 1999.<sup>56</sup> In these inquiries

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<sup>52</sup> [2006] EWHC 24 (Ch.) (20 January 2006); available at <<http://www.bailii.org/ew/cases/EWHC/Ch/2006/24.html>>.

<sup>53</sup> [2006] EWHC 24 (Ch.), Kitchin J at [104], [105].

<sup>54</sup> The question also arose in 1991 in the context of the WIPO-convened Committee of Experts on a Possible Protocol to the Berne Convention for the Protection of Literary and Artistic Works, with the Australian delegation agreeing on the need for legislative clarification of copyright protection for ‘computer-produced’ works. See: WIPO, Committee of Experts on a Possible Protocol to the Berne Convention for the Protection of Literary and Artistic Works, *Report Adopted by the Committee P88* (First Session, Geneva, November 4-8, 1991), WIPO Document No. BCP/CE/I/4, WIPO, Geneva (1991).

<sup>55</sup> The inquiry by the Copyright Law Review Committee (chaired by Justice I F Sheppard AO) into copyright protection for computer programs was announced by the Acting Attorney-General, Senator Michael Tate, on 19 October 1988. The Committee’s terms of reference were: ‘Whether the *Copyright Act 1968*, as amended by the *Copyright Amendment Act 1984*, adequately and appropriately protects computer programs in human and machine readable forms, works created by or with the assistance of computer programs, and works stored in computer memory’.

<sup>56</sup> In 1995, the Minister for Justice, the Hon Duncan Kerr MP, requested the Copyright Law Review Committee to conduct an inquiry into the simplification of the *Copyright Act 1968*. The CLRC’s report on the inquiry was published in two parts: *Simplification of the Copyright Act 1968: Part 1 – Exceptions to the Exclusive Rights of Copyright Owners* (September 2008), available at <<http://www.austlii.edu.au/au/other/clrc/4.html>>; and *Simplification of the Copyright Act 1968: Part 2 – Categorisation of Subject Matter and Exclusive Rights, and Other Issues* (February 1999), available at: <<http://www.austlii.edu.au/au/other/clrc/5.html>>.

the CLRC considered the CDPA provisions several years after they were introduced into the United Kingdom legislation<sup>57</sup> and made recommendations for the treatment of computer-generated materials under the *Copyright Act*.

### A: *Computer Software Protection Inquiry (1988-1994)*

In the *Computer Software Protection* report (1995),<sup>58</sup> the CLRC proposed that a distinction should be drawn between ‘materials created with the assistance of computer programs and those created by computer programs in circumstances where there is no identifiable human author (so called “computer-generated works”)’.<sup>59</sup> Taking into account views expressed in the UK’s Whitford Committee Report (1977)<sup>60</sup> and the European Community’s *Green Paper on Copyright and the Challenge of Technology – Copyright Issues Requiring Immediate Action* (1988),<sup>61</sup> the CLRC concluded that copyright protection for works created with the assistance of a computer should be determined on the basis of the same principles as applied to works created by traditional means. When a computer is used to assist the creation of a work, it is merely a tool used by a human author and the usual rules of copyright law apply.<sup>62</sup> The author of such a work must be a natural person.<sup>63</sup>

The Committee then turned to the issue of computer-generated works. In its *Draft Report on Computer Software Protection*,<sup>64</sup> the CLRC had considered ss 9(3) and 178 of the CDPA. The Committee formed the view that these provisions ‘adequately meet the need to define the subject matter for protection and the author of that subject matter’ and recommended in its Draft Report that provisions in similar terms should be inserted into the *Copyright Act*.<sup>65</sup> However, this proposal was not supported by a number of the submissions received in response to the CLRC’s draft recommendations. Notably, the Australian Copyright Council (ACC) opposed the view that there need not be a human author and rejected the CLRC’s draft recommendation that computer-generated works with no identifiable human author could be protected as works under the *Copyright Act*. Instead, the ACC proposed that the scope of copyright protection available under Part III of the Act should be restricted to works created by human authors and that computer-generated materials should be afforded

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<sup>57</sup> At the time the CLRC’s *Computer Software Protection Report* was finalised in 1994, the CDPA provisions on computer-generated works had been in force for 5 years. At the time the CLRC’s *Simplification of the Copyright Act Report (Part 2)* was finalised in 1999, the CDPA provisions had been in force for 10 years.

<sup>58</sup> Copyright Law Review Committee, *Computer Software Protection: Final Report*, Attorney-General’s Department, Canberra, April 1995, available at <http://www.austlii.edu.au/au/other/clrc/6.html#Heading2222>.

<sup>59</sup> Ibid, at [13.03].

<sup>60</sup> United Kingdom Government, *Report of the Whitford Committee to consider the law on Copyright and Designs*, Cmd 6732 (1977).

<sup>61</sup> Commission of the European Communities, *Green Paper on Copyright and the Challenge of Technology – Copyright Issues Requiring Immediate Action* COM (88) 172 final (1988).

<sup>62</sup> *Computer Software Protection Report*, at [13.07]: ‘In other words, if the materials produced with the assistance of a computer program amount to an original form of expression of an idea, and that expression comes within one of the recognised categories of works protected under the *Copyright Act 1968* (Cth) (the Act), the materials should also be protected as such, protection being granted regardless of how much easier the author’s task may have been made by the use of the computer program’; available at <http://www.austlii.edu.au/au/other/clrc/6.html>.

<sup>63</sup> *Computer Software Protection Report*, at [13.09].

<sup>64</sup> Copyright Law Review Committee, *Draft Report on Computer Software Protection*, Attorney-General’s Department, Canberra (1993) at [13.08], pp 244-245.

<sup>65</sup> Ibid.

protection only as subject matter under Part IV of the Act, and subject to a lesser bundle of exclusive rights (akin to neighbouring rights) than those granted to Part III works.

The CLRC accepted the ACC's reasoning, regarding this approach as being consistent with the *Berne Convention for the Protection of Literary and Artistic Works*.<sup>66</sup> Consequently, the CLRC revised its draft recommendations and, in its Final Report, recommended that the *Copyright Act* should be amended to provide that computer-generated material should be protected as a new class of Part IV subject matter, with lesser rights than those accorded to Part III works<sup>67</sup> and a 25-year term of protection.<sup>68</sup> It recommended that 'computer-generated material' would be defined as material that 'is generated by computer in circumstances such that there is no human author of the material'.<sup>69</sup> In line with s 9(3) of the CDPA, the author of computer-generated material would be taken to be the person who undertook the arrangements necessary for the creation of the material.<sup>70</sup>

### B: *Simplification of the Copyright Act Inquiry (1995-1999)*

The CLRC's recommendations in the Computer Software Protection inquiry were not implemented and the question of copyright in computer-generated materials was considered again by the reconstituted CLRC which embarked on the Simplification reference in 1995.<sup>71</sup> Submissions received by the CLRC during the Simplification reference supported the CLRC's conclusions in the *Computer Software Protection* report,<sup>72</sup> arguing that, as it is difficult to identify a human author of computer-generated materials, they lack the originality required for Part III works and should be protected as a separate category of Part IV subject matter. Other submissions argued that computer-generated material should not be protected by copyright at all, but should be afforded *sui generis* rights similar to those granted for databases under the European Community's Database Directive.<sup>73</sup>

In *Simplification of the Copyright Act 1968: Part 2 – Categorisation of Subject Matter and Exclusive Rights, and Other Issues* (1999) (Simplification of the Copyright Act Report (Part 2)), the CLRC observed that, in practice, the courts have had little hesitation in drawing an analogy between the use of computers to create copyright materials and the less sophisticated tools (for example, a pen or brush) historically used by creators in order to hold that copyright subsists in computer-generated or computer-assisted materials.<sup>74</sup> However, the CLRC was concerned that continued use of the analogy might not be sensible or feasible in the future and that, if

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<sup>66</sup> *Computer Software Protection Report*, at [13.14].

<sup>67</sup> *Computer Software Protection Report*, at [13.17].

<sup>68</sup> *Computer Software Protection Report*, at [13.23].

<sup>69</sup> *Computer Software Protection Report*, at [13.18].

<sup>70</sup> *Computer Software Protection Report*, at [13.21].

<sup>71</sup> Copyright Law Review Committee, *Simplification of the Copyright Act 1968: Part 2 – Categorisation of Subject Matter and Exclusive Rights, and Other Issues*, Attorney-General's Department, Canberra (February 1999); available at <http://www.austlii.edu.au/au/other/clrc/5.html> (as viewed on 29 May 2013).

<sup>72</sup> Copyright Law Review Committee, *Computer Software Protection: Final Report*, Attorney-General's Department, Canberra (April 1995); available at <http://www.austlii.edu.au/au/other/clrc/6.html#Heading2222>.

<sup>73</sup> Copyright Law Review Committee, *Simplification of the Copyright Act 1968: Part 2 – Categorisation of Subject Matter and Exclusive Rights, and Other Issues*, Attorney-General's Department, Canberra (February 1999) at [3.40]; available at <http://www.austlii.edu.au/au/other/clrc/5.html>. (Simplification of the Copyright Act Report (Part 2)).

<sup>74</sup> *Simplification of the Copyright Act Report (Part 2)*, at [5.44].

the analogy broke down, materials created by computer would receive a lesser level of protection than works created by human authors.<sup>75</sup> While accepting that it will continue to be necessary to connect copyright material to a human, the CLRC was of the view that the level of protection should not depend on the ‘tool technology’ used to create the material. Acknowledging that computers would play an evolving – albeit unpredictable – role in the creation of certain types of copyright material, the majority of the Committee expressed its concern:

that in the future it might not be sensible or even possible to continue the courts’ current approach of analogising computers with the historical tools of authors. If the analogy were to break down, computer-created material will not receive the higher level of protection even though that material reflects significant intellectual effort by the person who undertakes its creation. That is an outcome that differentiates between creators on the basis of the tools used by them, and discriminates against those using the most advanced (i.e. computer-based) tools. It would result, for example, in a lower level of protection being given to a ‘techno-artist’ using computer media compared with a traditional artist using traditional media.<sup>76</sup>

The CLRC favoured reconceptualising the connection between a human and the copyright material as one of ‘undertaking the creation or production of the copyright material’ instead of one of ‘authoring’ the work. Under this approach, the focus would shift from the issue of whether use of the computer can be analogised with the use of a traditional tool, to the ‘more germane issue of which human should be the one identified as sufficiently associated with the creation or production of the material for the purpose of the innovation threshold’.<sup>77</sup> The CLRC considered that it would be desirable to extend the concept of undertaking the creation or production of material to *all* copyright materials<sup>78</sup> with the result that the innovation threshold for all protected materials would be related to the efforts of the (human) person who undertook the creation or production of the material.<sup>79</sup> The CLRC’s recommendation has some similarity to s 9(3) of the CDPA<sup>80</sup> but differs in that the identification of the person ‘who undertakes the creation or production of’ copyright material would apply to all copyright materials, not only to computer-generated works.

Whereas in the earlier *Computer Software Protection* report<sup>81</sup> the CLRC continued to emphasise the connection between a copyright work and a human author, such that computer generated materials would be afforded a lesser level of protection as a new category of subject matter in Part IV of the Act, in the *Simplification of the Copyright Act Report (Part 2)*, the CLRC took the view that there should be no distinction between computer-assisted and computer-generated materials. The widespread use of computers in the creation of copyright materials and the diverse ways they are used to create materials means that an

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<sup>75</sup> *Simplification of the Copyright Act Report (Part 2)*, at [5.44].

<sup>76</sup> *Simplification of the Copyright Act Report (Part 2)*, at [5.44].

<sup>77</sup> *Simplification of the Copyright Act Report (Part 2)*, at [5.45].

<sup>78</sup> *Simplification of the Copyright Act Report (Part 2)*, at [5.47].

<sup>79</sup> *Simplification of the Copyright Act Report (Part 2)*, at [5.47].

<sup>80</sup> CDPA, s 9(3) provides: ‘In the case of a literary, dramatic, musical or artistic work which is computer-generated, the author shall be taken to be the person by whom the arrangements necessary for the creation of the work are undertaken’.

<sup>81</sup> Copyright Law Review Committee, *Computer Software Protection: Final Report*, Attorney-General’s Department, Canberra (April 1995); available at <http://www.austlii.edu.au/au/other/clrc/6.html#Heading2222>.

approach based on distinguishing between computer-assisted and computer-generated materials would be difficult to understand and to apply in practice. In any case, the CLRC's recommendation that the concept of authorship should be replaced by reference to the person who undertook the creation or production of the material makes such a distinction superfluous as both categories would be treated equally.<sup>82</sup> Adoption of the CLRC's recommendations in the *Simplification of the Copyright Act Report (Part 2)* would see computer-generated literary, dramatic, musical and artistic works protected under Part III of the *Copyright Act* in the same way as human-authored works, and afforded the same bundle of exclusive rights and term of protection.

## VI: TELSTRA CORPORATION LIMITED V PHONE DIRECTORIES PTY LTD

In *Telstra v Phone Directories*,<sup>83</sup> the question was whether copyright subsisted in the white pages directories (WPDs) and yellow pages directories (YDSs) for 11 regional areas published by Telstra and its subsidiary, Sensis, during the period 2000 to 2009. Each WPD and YPD listed the names, addresses, telephone numbers and other information relating to residential and business telephone subscribers for a particular geographic area. The information was collected and maintained by Telstra and the directories were published by Sensis.

In an earlier case also involving Telstra's WPDs and YPDs, *Desktop Marketing Systems Pty Ltd v Telstra Corporation Ltd*<sup>84</sup> (*Desktop Marketing*), the Full Court of the Federal Court had held that the directories were protected by copyright as original literary works. However, *Desktop Marketing* did not directly raise the issue of authorship and subsequent comments by the High Court in *IceTV Pty Ltd v Nine Network Australia Pty Ltd*<sup>85</sup> warned that the decision needed to be treated with caution.<sup>86</sup> The facts on which *Telstra v Phone Directories* was based differed in some important respects from those in *Desktop Marketing*: the WPDs and YPDs differed from those in the previous case and they had been produced by a different process.

Preparatory work on compilation of the WPDs and YPDs considered in *Telstra v Phone Directories* had been carried out by numerous individuals in Sensis's Directory Solutions Group, some of whom were identified and others whose identity was unknown. The directories were compiled by an automated computerised process, utilising the Genesis Computer System (Genesis), which stored a relational database. Subscribers' listing information was obtained from a variety of sources and, for the most part, was entered automatically into the Genesis database, although in about 15% of cases it was entered manually. In producing WPDs and YPDs from late 2003, after the listing information was entered into the database, the Genesis program checked the information for completeness and accuracy and applied the Rules (relating to fonts, colour schemes, spacing of words and

<sup>82</sup> *Simplification of the Copyright Act Report (Part 2)*, at [5.47].

<sup>83</sup> [2010] FCA 44; [2010] FCFCA 149.

<sup>84</sup> [2002] FCAFC 112.

<sup>85</sup> [2009] HCA 14.

<sup>86</sup> *IceTV Pty Ltd v Nine Network Australia Pty Ltd* [2009] HCA 14, at [52], [134], [157] and [188].

entries, prohibited words or phrases) to generate the directories. Apart from the input of data, the directories were essentially produced by the Genesis program.<sup>87</sup>

Telstra claimed that each of its WPDs and YPDs were original literary works which were protected under the *Copyright Act* as compilations of the expression of information in individual listings, the enhancement of listings and the overall arrangement of individual listings to form the whole.<sup>88</sup>

#### A: *Telstra v Phone Directories* [2010] FCA 44

At first instance, Gordon J emphasised the ‘centrality of authorship’ to the subsistence of copyright,<sup>89</sup> rejecting Telstra’s submission that to establish that copyright subsists, all that is necessary is to identify the work and show that some intellectual effort has been expended in producing it.<sup>90</sup> In Gordon J’s view, Telstra’s suggested approach ‘puts the cart before the horse ... [and] ignores the fact that it is the original work of an author or authors who contribute to the particular form of expression of the work and reduce the work to a material form that is the act giving rise to the statutory protection of copyright’.<sup>91</sup>

Gordon J held that copyright did not subsist in Telstra’s WPDs and YPDs because they could not be regarded as original literary works. Much of the contribution to the directories did not amount to ‘independent intellectual effort’, nor did it constitute ‘sufficient effort of a literary nature’ for those making the contribution to be considered as authors of the work; it was computer-generated rather than the result of human authorship.<sup>92</sup> The process of creating the directories was heavily automated, such that there was only minor human involvement in producing substantial parts of them. Human intervention was regulated and controlled by the various computer systems in place, including the Rules.<sup>93</sup>

Having concluded that Telstra’s directories were not protected by copyright, Gordon J drew attention to the existence of *sui generis* protection in Europe for databases that do not meet the originality requirements under copyright law.<sup>94</sup> Her Honour observed that the lack of protection for such works in Australia ‘is a matter for Parliament and, in my view, a matter which they should address without delay’.<sup>95</sup>

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<sup>87</sup> For a detailed explanation of the process for producing the directories, see [2010] FCA 44 from [72] onwards; [2010] FCAFC 149 at [22].

<sup>88</sup> [2010] FCA 44 at [2].

<sup>89</sup> [2010] FCA 44 at [20], [35].

<sup>90</sup> [2010] FCA 44 at [31], [34].

<sup>91</sup> [2010] FCA 44 at [35].

<sup>92</sup> [2010] FCA 44 at [5], [334]–[338].

<sup>93</sup> [2010] FCA 44 at [338].

<sup>94</sup> [2010] FCA at [29], referring to *IceTV Pty Ltd v Nine Network Australia Pty Ltd* [2009] HCA 14 at [135]–[138] per Gummow, Hayne and Heydon JJ.

<sup>95</sup> [2010] FCA 44 at [30].

In *Telstra Corporation Ltd v Phone Directories Company Pty Ltd*,<sup>96</sup> the Full Court of the Federal Court dismissed the appeal and upheld Gordon J's decision.<sup>97</sup> The Full Court generally agreed with Gordon J's reasoning that authorship is central to originality, but clarified that identification of each and every author by name is not necessary. Nevertheless, it must be shown that the work in question originated from an individual author or authors who actually existed.<sup>98</sup>

Keane CJ reiterated that the focus of attention when considering the subsistence of copyright is not to prevent misappropriation of skill and labour but the protection of literary works which originate from individuals,<sup>99</sup> observing that:

the focus of consideration is not upon creativity or novelty, but upon the origin of the work in some intellectual effort of the author.<sup>100</sup>

Information about the name and address of a particular telephone subscriber is merely factual in nature and is not created by the person who takes a note of these details from the subscriber.<sup>101</sup> The form of the directories did not originate with the individuals who engaged the mechanical processes to produce the compilation.<sup>102</sup> As the WPDs and YPDs were 'not compiled by individuals but by the automated processes of the Genesis Computer System', they could not be considered as originating from an individual or group of individuals.<sup>103</sup> Keane CJ concluded that copyright could not subsist in the directories because they were produced by a 'computerised process of storing, selecting, ordering and arranging the data to produce the directories in the form in which they were published'.<sup>104</sup>

In separate judgments, and based on similar reasoning, Perram and Yates JJ reached the same conclusion as Keane CJ.<sup>105</sup> Yates J explained that the selection, ordering and arrangement of the information to produce each compilation in the WPDs and YPDs 'was computer-generated by the Genesis Computer System' and the Genesis system was not a 'mere tool utilised by [Sensis's] employees for this purpose'.<sup>106</sup> The activities carried out by the computer were transformative steps that were fundamental to the making of the compilation and caused each compilation to take the form it did. Though they would have

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<sup>96</sup> [2010] FCAFC 149.

<sup>97</sup> *Telstra Corporation Ltd v Phone Directories Co Pty Ltd* [2010] FCA 44 at [5], [168]–[173], [333]–[338] per Gordon J.

<sup>98</sup> *Telstra Corporation Ltd v Phone Directories Co Pty Ltd* [2010] FCAFC 149 at [96] per Keane CJ, at [2], [143], [169] per Perram and Yates JJ. Keane CJ (at [57]) and Perram (at [127]) did not consider that it was necessary to identify each and every author by name, but that it needed to be shown that the work originated from an individual author or authors. Perram J (at [127]) stated that it was not necessary to 'literally name the authors but only [to] demonstrate that the authors existed'.

<sup>99</sup> [2010] FCAFC 149 at [96].

<sup>100</sup> [2010] FCAFC 149 at [58] citing *Walter v Lane* [1900] AC 539 at 554 and *Sands & McDougall Proprietary Limited v Robinson* [1917] HCA 14; (1917) 23 CLR 49 at 54–55.

<sup>101</sup> [2010] FCAFC 149, Keane CJ at [59].

<sup>102</sup> [2010] FCAFC 149, Keane CJ at [59].

<sup>103</sup> [2010] FCAFC 149, Keane CJ at [89], [90].

<sup>104</sup> [2010] FCAFC 149, Keane CJ at [7], [[96].

<sup>105</sup> [2010] FCAFC 149, Perram J at [103]–[106], [111]–[112], [117]–[118], [127]; Yates J at [166]–[169].

<sup>106</sup> [2010] FCAFC 149, Yates J at [166]–[167].

amounted to authorship if carried out by individuals, in this case they were not the activities of an author for copyright purposes.<sup>107</sup>

All three judges in the Full Court referred to the specific provisions on computer-generated works in s 9(3) of the CDPA<sup>108</sup> but, other than observing that no corresponding provisions exist in the *Copyright Act*, the court refrained from any further discussion of the CDPA. Surprisingly, the court made no reference to the Computer Software Protection and Simplification inquiries. Focusing on protection for factual compilations, Keane CJ drew attention to the *sui generis* rights introduced in the European Union pursuant to the Directive of the European Parliament and Council on the Legal Protection of Databases, commenting that whether any similar legislative reform was warranted in Australia was a matter for Parliament to consider.<sup>109</sup>

In an application for leave to appeal to the High Court of Australia in September 2011, Counsel for Telstra and Sensis<sup>110</sup> submitted that the Full Court, in applying the test to identify an original literary work, had narrowed the concept of origination from its accepted meaning. Rather than asking whether the directories were original literary works, the question asked by the Full Court was whether selection and arrangement of the listings was done by individuals or was the product of a computer program. The special leave application was refused,<sup>111</sup> no error having been found in the Full Court's decision. During the hearing of the special leave application, Gummow J repeated the suggestion made by Gordon J at first instance and Keane CJ in the Full Federal Court that factual compilations of the kind being considered may need to be protected by 'something like a database directive'.<sup>112</sup>

## VII: REBOOTING THE DISCUSSION ON COPYRIGHT AND COMPUTER-GENERATED WORKS

The decision of the Full Federal Court in *Telstra v Phone Directories*<sup>113</sup> vindicates the concerns expressed by the CLRC that to seek to preserve a rigid adherence to traditional notions of authorship in the face of developments in digital technology and the ever-increasing involvement of computers in the creation of copyright materials would impose 'an unnecessary technological restriction'<sup>114</sup> on the copyright system. This concern was clearly aired in the Simplification of the Copyright Act Report (Part 2), where the CLRC stated that:

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<sup>107</sup> Ibid.

<sup>108</sup> [2010] FCAFC 149 at [70] per Keane CJ; at [118] per Perram J; at [136] per Yates J.

<sup>109</sup> [2010] FCAFC 149 at [97] per Keane CJ.

<sup>110</sup> Mr N J Young, QC, with Mr S M Rebikoff. Mr C D Golvan, SC appeared with Mr S Ricketson for the respondents.

<sup>111</sup> *Telstra Corporation Ltd v Phone Directories Co Pty Ltd* [2011] HCATrans 248.

<sup>112</sup> [2011] HCATrans 248.

<sup>113</sup> [2010] FCAFC 149.

<sup>114</sup> Copyright Law Review Committee, *Simplification of the Copyright Act 1968: Part 2 – Categorisation of Subject Matter and Exclusive Rights, and Other Issues*, Attorney-General's Department, Canberra (February 1999) at [5.125]; available at <<http://www.austlii.edu.au/au/other/clrc/5.html>>.



the current requirement of ‘authorship’ may preclude the grant of protection to material that is deserving of protection, simply because of the extent to which a computer was utilised in its creation exceeds a particular (currently uncertain) level.<sup>115</sup>

Strictly speaking, *Telstra v Phone Directories* may be authoritative only in relation to the requirements for copyright subsistence in factual compilations created by an automated, computerised process. However, in the absence of any specific provisions in the *Copyright Act* relating to copyright in computer-generated works, the decision has much wider-ranging implications as it brings into question the subsistence of copyright not only in computer-generated factual compilations, but in all materials within the categories of works described in Part III of the Act<sup>116</sup> where the work has been created with a computer.

In light of the *Telstra v Phone Directories* decision, it is timely to reboot the discussion about copyright in computer-generated works, which has largely been in abeyance since the CLRC’s *Simplification of the Copyright Act Report (Part 2)* was released in 1999. The need to address the role of computer technologies in the creation of copyright works and their implications for the concept of authorship in an era in which an increasing amount of content is ‘born digital’ has long been recognised, as evidenced by the inquiries by lawmakers in the United States and the United Kingdom in the 1970s, the European Commission in the 1980s and WIPO at the beginning of the 1990s. Although the issue of copyright protection for computer-generated materials has been examined in Australia twice, by consecutive, independently-constituted Copyright Law Review Committees over a period of 10 years (1988 to 1998), the Committees’ recommendations for the enactment of specific legislative provisions in the *Copyright Act* have not yet been implemented and the legal position remains unclear.<sup>117</sup>

Taking into account the predominant economic rights focus of the Anglo-Australian copyright tradition<sup>118</sup> and copyright’s primary role of incentivising the production and dissemination of creative and informational works, it must be questioned whether new materials produced using the most advanced and innovative computer technologies should be outside the reach of the copyright system. If copyright law is to continue to play a role in fostering the production of new creative and informational works, it must align with the realities of how materials are created and used in the digital environment.<sup>119</sup> From this perspective, the exclusion of computer-generated materials from copyright protection appears arbitrary and is difficult to justify. Not only does it deprive Australian creators of

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<sup>115</sup> Ibid.

<sup>116</sup> Under Part III of the *Copyright Act 1968* (Cth), copyright subsists in original literary, dramatic, musical and artistic works: *Copyright Act 1968* (Cth) s 32.

<sup>117</sup> See Leif Gamertsfelder, *Corporate Information and the Law*, LexisNexis Butterworths, Australia (2013) at pp 44-47; Jani McCutcheon, ‘The Vanishing Author in Computer-Generated Works: A Critical Analysis of Recent Australian Case Law’, 2013 (36) *Melbourne University Law Review* 917; Jani McCutcheon, ‘Curing the Authorless Void: Protecting Computer-Generated Works Following *IceTV* and *Phone Directories*’ 2013 (47) *Melbourne University Law Review* 46; Mark Perry and Thomas Margoni, ‘From music tracks to Google maps: Who owns computer-generated works?’ (2010) 26 *Computer Law & Security Review* 621. This issue is not within the terms of reference of the Australian Law Reform Commission’s inquiry into copyright and the digital economy and has not been raised in the Issues Paper (20 August 2012) or Discussion Paper (5 June 2013) released by the Committee.

<sup>118</sup> On this point, see Arthur Miller, ‘Copyright Protection for Computer Programs, Databases, and Computer-generated Works: Is there anything new since CONTU?’ (1993) 106 *Harv. L. Rev.* 977 at pp 1049-1053, 1066.

<sup>119</sup> See Pamela Samuelson, ‘Allocating Ownership Rights in Computer-Generated Works’ (1985) 47 *U. Pitt. L. Rev.* 1185 at pp 1192, 1225-1228.

copyright protection for works that attract copyright protection under the copyright laws of Australia's trading partners, but it discriminates against materials on the basis of their form of expression and the means used to produce them. As the law currently stands, a Part III work produced laboriously (and inefficiently) by a human author will be protected by copyright whereas the identical work created with computer input that exceeds an undefined threshold level will not be considered to have a human author and will not attract copyright. Moreover, anomalies arise as a result of the discrepancy between authorship requirements for Part III and Part IV materials;<sup>120</sup> for example, computer-generated still images would be denied copyright protection as artistic works under Part III of the Act, whereas an entire sequence of computer-generated images would attract copyright as Part IV subject matter, within the cinematograph film category.<sup>121</sup>

To maintain that the materials in the categories described in Part III of the *Copyright Act* will only be original works that attract copyright protection if they are created by a human author runs counter to the principle of technology neutrality which has been fundamental to the shaping of copyright law for the digital era. The need to apply legal principles consistently, irrespective of the particular technology involved, has been acknowledged throughout the reviews and revisions of Australian copyright law since the beginning of the 21<sup>st</sup> century.<sup>122</sup> Amendment of the *Copyright Act* along the lines recommended by the CLRC in 1999 in the *Simplification of the Copyright Act Report (Part 2)* would implement a technologically neutral approach in the delineation of the range of materials in which copyright may subsist. Replacing the focus on authorship of Part III works – which has been interpreted restrictively as requiring a human author – with a focus on the identification of a human ‘as sufficiently associated with the creation or production of the material for the purpose of the innovation threshold’<sup>123</sup> would bring all literary, dramatic, musical and artistic creations within the scope of the *Copyright Act*, irrespective of the technologies used to produce them.

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<sup>120</sup> This discrepancy was noted in *Telstra Corporation Limited v Phone Directories Company Pty Ltd* [2010] FCAFC 149, at [134]-[136] per Yates J.

<sup>121</sup> *Sega Enterprises Ltd v Galaxy Electronics Pty Ltd* [1996] FCA 761; *Galaxy Electronics Pty Ltd v Sega Enterprises Ltd* [1997] FCA 403.

<sup>122</sup> *Simplification of the Copyright Act Report (Part 2)*, at [5.52]: ‘The majority of the Committee recognises that the approach of the court in *Galaxy v Sega* is along the lines of the technologically neutral approach the majority of the Committee recommends be implemented generally into Australian copyright law’. This technologically neutral approach is found throughout the *Copyright Act 1968*; for example, ‘material form’ is defined in s 10(1) in relation to a work or an adaptation of a work as including ‘any form (whether visible or not) of storage of the work or adaptation, or a substantial part of the work or adaptation (whether or not the work or adaptation, or a substantial part of the work or adaptation, can be reproduced)’.

<sup>123</sup> *Simplification of the Copyright Act Report (Part 2)*, at [5.45].