

## Digital Technologies and Emerging Copyright Scenario

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Technological progress, which ushered in new modes of exploitation of copyright works brought in challenges to the copyright regime which had to be periodically modified to ensure adequate return to the authors and access to the public of these works. Most significant of the challenges hitherto has been from digital technologies. In order to update the copyright system the international community drew up two treaties, the WIPO Copyright Treaty (WCT) and the WIPO Performances and Phonograms Treaty (WPPT). In addition to enhancing the rights of the authors the treaties provided legal protection to the technological measures used by the authors in digital transmission. Accession to the Treaties has been rather slow and implementation of technological protection measures has been a hotly debated issue. The US was the first major country to implement the Treaty provisions through its Digital Millennium Copyright Act (DMCA) and the protection of technological measures, particularly anti-circumvention measures has been a matter of intense debate ever since. The paper looks at some of the consequences of the DMCA, the impact on fair use and on the market place in general. The article also explores the concerns of the developing countries in securing access to information and the suggestions of the Commission on Intellectual Property Rights. Noting the importance of copyright as a public policy tool, the author pleads for calibration of the copyright balance to suit India's national interests. The author also exhorts the academic community to take active interests in copyright policy matters.

Copyright system mutated to its current state through continuous interaction with technological developments. Originally developed as a legal regime in the context of print media it slowly expanded its fold to cover other forms of creative expressions like engravings, paintings, drawings, sculptural and architectural works. Later photography and cinematograph films were brought under its protective umbrella. Adapting some of them would not have been easy as the copyright system had to grapple with new concepts; for

example, photography was the result of interaction of light on a chemical medium or for that matter cinematograph films involved multiple right holders. The reproduction right gives us typical example of the challenges that technological developments posed to the legal system. The framers of Berne Convention, 1886, considered reproduction right so fundamental to copyright system that it was not considered necessary to spell out this right in the Convention<sup>1</sup>. The progress in technology necessitated spelling out of

this right by the time of Stockholm Convention, 1967. The duplicating machines and tape recordings had brought in a situation where individual copy may be a 'fair use' but free availability of such machines resulted in large number of such copies thereby potentially affecting the economic exploitation of works.

Technological developments in its interaction with cultural products facilitated new forms of creative expressions. Whenever technology provided a new method of use of cultural goods in the society, copyright system brought in rules and regulations to enable its effective distribution in the market place and ensured adequate returns to the creator. The Berne Convention was periodically updated to incorporate new works and to fine-tune the system of protection. It was revised with almost a regular periodicity of once in every twenty years. In 1896 it dealt with mechanical reproduction, in 1908 cinematography, in 1928 radio broadcasting, in 1948 new issues in radio broadcasting, cinematography and mechanical reproduction and in 1968 television. Since the 1968 Stockholm Convention and the following Paris Convention (1971) many technological developments took place. Most significant was the advent of digital technologies, which posed peculiar challenges.

Copyright law grants right to authors over certain uses of works. These rights are negative in nature whereby the author could prevent others from doing certain acts with reference to the work. In order to exercise these rights, ideally the author should have adequate control over the uses to which the work is put to. With

technologies of reproduction that existed before the advent of digitisation, in the analogue era, such controls were possible. Books were delivered either in hardback or paperback. Sound recording came on a vinyl medium or magnetic tape. Motion pictures were delivered on film. Broadcast was through analogue signals within limited geographical regions simultaneously. Copies made out of such analogue products were of inferior quality, which deteriorated with further copies. Advent of digital technology changed this landscape. Digital technologies facilitate conversion of any data or information into binary form, which could then be easily stored or replicated. Each digital copy came close to the original and each such copy could act as seeds for further copies.

The copyright system, which traditionally dealt with tangible goods, had now to come to terms with 'de-materialized' works in digital form. Digitisation makes near perfect reproduction of works easy and affordable. It also enables adaptation of works with relative ease. Computers upon which digitisation thrived required by virtue of its architecture creation of temporary, transient or ephemeral copies in the process of communicating to the user. Copyright law, which granted authors rights over each reproduction had to deal with this new situation. Emergence of the Internet communication complicated this scenario. Once digitised and placed on a network like Internet the author loses control over the work. In the analogue era, distribution involved physical transfer of copies and ownership over them. Right of reproduction, the core copyright right remained under firm con-

trol of the author. In digital transmission, distribution involved reproduction at many stages though transient or ephemeral at times, the author having no control over the issue of copies. The physical controls possible in the analogue era were no longer available in the digital era.

Moreover, Internet revolutionized communication process. Compressibility of digitised works made transmission of files containing huge data (like audio-visual works) easier and faster. Thus, an individual with home equipment could with a few keystrokes deliver perfect copies of digitized works to scores of other individuals virtually anywhere in the world<sup>2</sup>. This broke the isolation of the individual user from the rest of the world bringing in issues like definition of private use and the extent of it, thus blurring the public-private use dichotomy central to the 'fair use' doctrine in copyright law. The traditional rights of public performance and broadcasting covered transmission of performance or broadcast simultaneously to a broad group of public. In Internet transmission, the communication to public or public performance need not be simultaneous with the performance or the communication. A user can access a work stored in a server at a place and time chosen by him and a multitude of works can be stored in a server, so that users can access them according to their convenience and enjoy at the time of their choice. This was an essentially different form of transmission of works as compared to public performance rights, which used to be enjoyed simultaneously in real time.

Traditional copyright law arranged the rights granted to authors a set of independent rights separately exercisable, each on its own footing. Transmission of works over the Internet resulted in merging of these rights. Each action of viewing or listening to digital content involve making of temporary or ephemeral copies involving reproduction right and public performance right. As copies are necessarily made in digital transmission, it also involved distribution right. Thus communication of an audio or audio-visual works involved reproduction, distribution and public performance simultaneously. The digital technologies scrambled the beautifully arranged, dogmatically duly classified rights central to the approach hitherto followed by the copyright system<sup>3</sup>.

If technology took away some control by one hand it provided some additional means of control through the other. Digital technologies facilitated putting in place technological protection measures that could prevent unauthorized use. A range of methods are available that restricts access to works. *Password protection* is one of the common types. Then there are software *firewalls* that restrict unauthorized users from accessing content. *Encryption* is a process of encoding the content in an unreadable form so that only authorized users who hold the key to decode the information can access it. Thus a range of options, in fact are provided by digital technologies. In addition to such technological protection devices, the technologies enabled right holders embed rights management information systems on digital works, which contain

information that identifies the work, the author of the work, the owner of any right in the work, or information about the terms and conditions of use of the work. It was perceived by some that 'answer to the machine was machine'<sup>4</sup> itself. However, these technological measures could be circumvented by the use of technologies meant for circumventing these access control measures. Hence, right holders argued that legal protections should be provided against circumvention of technological measures used by authors to protect their rights. Such a step would enable them to enforce their rights in the digital world.

Even before the Internet had made the difficult digital issues complex the recognition of the importance of intellectual property rights in the Uruguay round of GATT negotiations had led to the conclusion of the agreement on Trade- Related Aspects of Intellectual Property Rights (TRIPS) which, *inter alia*, dealt with some of the copyright issues, including digital issues which were not a part of the Berne Convention like protection of computer programs, original databases and so on. The Berne Convention had to brace itself up to these developments.

In order to update Berne Convention provisions to the digital era, the World Intellectual Property Organization (WIPO) initiated discussions on the challenges of digital technologies to copyright system from the early 90's of the last century onwards. The discussions finally led to the WIPO Diplomatic Conference on Certain Copyright and Related Rights questions in December 1996. This Diplomatic Conference drew up two treaties

to address the digital issues, the WIPO Copyright Treaty<sup>5</sup> (WCT) and WIPO Performances and Phonograms Treaty<sup>7</sup> (WPPT)<sup>6</sup>. Together known as 'Internet treaties', the Treaties updated the Berne Convention by incorporating the existing TRIPS provisions into its fold and granted additional rights to authors in the context of Internet. Protection of computer programs<sup>7</sup> and original databases<sup>8</sup> were incorporated. Rental rights were granted to computer programs, cinematographic works and sound recordings<sup>9</sup>. A new right referred to as the right of communication to the public<sup>10</sup> was incorporated and right of distribution<sup>11</sup> was specifically spelt out. It also provided for legal remedies against circumvention of technological measures<sup>12</sup> used by authors to protect their works. Legal protection was also granted to rights management information systems<sup>13</sup> used by authors while transmitting works in digital environment. The Treaties also provide for limitations and exceptions to the rights in Article 10<sup>14</sup> of WCT. An agreed statement concerning this article clarify that not only the limitations and exceptions in the national laws considered acceptable under Berne Convention may be carried forward but also that new exceptions and limitations appropriate for the digital environment maybe devised to suit the digital environment. Thus national copyright systems are given the freedom to modify and carry forward these limitations and exceptions to the digital environment.

### **Protection of Technological Measures**

One of the key provisions relating to enforcement of rights in the digital me-

dium is the provision relating to protection of technological measures used by authors to protect their rights in the digital environment, which is the subject of this paper. It turns out that this new addition to the copyrightable measures happens to be the most debated one.

Article 11 of the WCT, which deals with obligations concerning technological measures, is reproduced below:

Contracting parties shall provide adequate legal protection and effective legal remedies against the circumvention of effective technological measures that are used by the authors in connection with the exercise of their rights under this Treaty or the Berne Convention and that restrict acts, in respect of their works, which are not authorized by authors concerned or permitted by law.

The WPPT uses almost identical language in its article 18, which deals with obligations concerning technological measures. Thus the treaties obligate member states to prevent circumvention of technological measures used to protect the copyright works. These obligations serve as technological adjuncts<sup>15</sup> to the exclusive rights granted by the copyright law. They provide legal protection that the international copyright community deemed critical to the safe and efficient exploitation of works on the digital networks.

The original draft proposal placed for discussion regarding article 11 had an obligation to make unlawful the importation, manufacture and distribution of protection defeating devices. There was severe criticism to this proposal as it may bring in within its purview many popular

devices with multiple uses such as computers and introduce legal uncertainty, thereby freezing design and development of a broad range of products, and consequently curtailing consumer welfare<sup>16</sup>. Eventually the proposal was amended and the treaties include only a broad general obligation to protect effective technologies against the act of circumvention. The focus has thereby shifted to the act of circumvention rather than the preparatory activities that lead to circumvention.

Though the treaties were concluded in 1996 it entered into force only in 2002 as the required number of thirty countries joined only by then<sup>17</sup>. India has not yet joined the treaties, as it is required to amend its Act to give effect to the treaty provisions<sup>18</sup>. As of March 2003 about 41 countries<sup>19</sup> have acceded to WCT and WPPT.

The WIPO actively promotes these treaties as it believes the 'implementation of the Internet Treaties assists in promoting the development of e-commerce, both domestically and internationally, and encourages direct foreign investment, by providing greater assurance to businesses that their property can be safely disseminated<sup>20</sup>. It devotes substantial resources to governments that are in the process of adhering to the treaties by providing legal advice' arranging meetings and seminars and providing speakers for other meetings arranged by WIPO<sup>21</sup>. These treaties are part of WIPO's digital agenda<sup>22</sup>.

### **Implementation—US Leads the Way**

One of the first countries to legislate on the treaty provisions was the United States through its Digital Millennium

Copyright Act<sup>23</sup> (DMCA) that came into force in 1998. The European Union (EU) has issued a Copyright Directive<sup>24</sup> spelling out how the treaties should be implemented by the member states. Though the initial deadline was set for the end of 2002, many EU countries have not yet implemented them probably because of the complexity of the issues involved.

It would be appropriate to examine the current state of play of the DMCA to develop an understanding of the issues involved in enforcement of digital copyright. A study of DMCA and its impact is particularly relevant because US is the leader of the digital revolution and its court system is probably one of the fastest and so judicial pronouncements are available even on emerging areas. The most discussed provision of the DMCA is the protection of technological measures. DMCA divides technological measures into two categories: measures that prevent unauthorized access to a copyright work and measures that prevent unauthorized copying or use or performance of a copyrighted work as discussed below.

The first limb of DMCA prohibits circumvention of technological measures controlling access. Sec 1201(a) of DMCA states, "No person shall circumvent a technological measure that effectively controls access to a work protected under this title". The "access control" measures used in digital transmission are thus protected. So, for example, this provision makes it unlawful to defeat the encryption system used on a DVD containing a movie. This ban on acts of circumvention applies even where the purpose for decrypting the movie would otherwise be

legitimate under the copyright law. This enactment further prohibits the manufacture or import or distribution of devices primarily produced for circumventing a technological measure if such devices have limited commercial purpose or use other than to circumvent. The devices and technologies that enable circumvention are hence banned.

The second limb of the DMCA deals with the technological measures used by authors to protect their copyrights [Sec 1201 (b) of DMCA]. It prohibits manufacture, distribution or import of devices that are primarily designed for the purpose of circumvention of technological measures that effectively protect the right of a copyright holder. There is no specific prohibition against circumvention in this case, admittedly because copyright law itself permits circumvention in some instances like fair use exceptions.

As to the act of circumvention DMCA prohibits only the circumventing of technological measures that control access. Circumvention is not prohibited in the second instance but devices that enable circumvention are banned. DMCA bans only those devices: (i) which are primarily designed or produced to circumvent, (ii) which have only limited commercially significant purpose other than to circumvent, or (iii) which are marketed for use in circumventing. DMCA contains provisions for exemptions from liability for certain limited classes of activities, including security testing, reverse engineering of software, encryption research, and law enforcement. A violation of any of the prohibition is subject to significant

civil and, in some circumstances, criminal penalties.

Some copyright scholars<sup>25</sup> argue that DMCA went far beyond the requirements of the WIPO Copyright Treaty and that by banning all acts of circumvention and all technologies and tools that can be used for circumvention. However we need to note that this legislation<sup>26</sup> was framed after extensive consultations with industry and public and hardly any case law precedents were available when the legislation was put to law. The copyright industry strongly favours this legislation. The International Intellectual Property Alliance advocates DMCA as the best solution to protect the rights of creators in digital environment. Same is the advice of Business Software Alliance (BSA), an international association of software majors.

The BSA has welcomed a recent trade agreement between US and Singapore echoing the anti-circumvention provisions of the DMCA<sup>27</sup>. This trade agreement makes it unlawful circumvention without authority of any effective technological measure or distribution of a hardware device or software utility that performs a circumvention function. The complex trade agreement, which deals with many other areas, also deems it a criminal offence to wilfully receive or further distribute an encrypted program-carrying satellite signal that has been decoded without the authorization of the lawful distributor of the signal. The US president said that the agreement would help generate well paying jobs and opportunities for people in Singapore and the United States. The Singapore Prime Min-

ister hailed this agreement as establishing high standards in intellectual property<sup>28</sup>. Clearly, the US sees intellectual property issues as vital to its economic interests and would like other legal systems to follow the legislation it has put in place.

### Some Consequences

Though the DMCA was enacted to prevent piracy of copyright works in the online environment, critics argue that it in effect prevents a number of otherwise legitimate activities. Some incidents narrated below describe what some call as the chilling consequences of an overarching legislation in the field of copyright<sup>29</sup>.

In September 2000, a multi-industry group in US known as the Secure Digital Music Initiative (SDMI) issued a public challenge encouraging skilled technologists to try to defeat certain watermarking technologies it had developed intended to protect digital music. A Princeton University professor Edward Felten and a team of researchers took up the challenge and succeeded in removing the watermarks. When the team tried to present their results at an academic conference, however, SDMI representatives threatened the researchers with liability under the DMCA. The threat letter was also delivered to the researchers' employers, as well as the conference organizers. The researchers had to withdraw their paper from the conference. The threat was ultimately withdrawn and a portion of the research published at a subsequent conference, but only after the researchers filed a lawsuit in a federal court.

Following the legal threat against Pro-

fessor Felten's research team a number of prominent computer security experts have curtailed their legitimate research activities out of fear of potential DMCA liability<sup>30</sup>. For example, prominent Dutch cryptographer and security systems analyst Niels Ferguson discovered a major security flaw in an Intel video encryption system known as High Bandwidth Digital Content Protection (HDCP). He declined to publish his results on his website relating to flaws in HDCP, on the grounds that he travels frequently to the US and is fearful of "prosecution and/or liability under the U.S. DMCA law."

More shocking is the experience of a Russian programmer who lived and worked in Moscow. When he came to attend a conference in the United States, the US authorities arrested him. What was Skylarov's alleged crime? Skylarov had worked on a software program known as the Advanced e-Book Processor, which allowed owners of Adobe<sup>TM</sup> electronic books ("e-books") to convert them from Adobe's e-book format into Adobe Portable Document Format ("pdf") files, thereby removing restrictions embedded into the files by e-Book publishers. Writing this program was legal in Russia, and so in most of the world. This process removes the various restrictions (against copying, printing, text-to-speech processing, etc.) that publishers can impose on e-books. The program is designed to work only with e-books that have been lawfully purchased from sales outlets. ElcomSoft, Skylarov's employer produced and distributed this software over the Internet.

The Advanced e-Book Processor al-

lowed those who have legitimately purchased e-books to make fair uses of their e-books, which would otherwise not be possible with the current Adobe e-book format. For instance, the program allows people to engage in the following activities, all of which are fair uses:

- read it on a laptop or computer other than the one on which the e-book was first downloaded;
- continue to access a work in the future, if the particular technological device for which the e-book was purchased becomes obsolete;
- print an e-book on paper;
- read an e-book on an alternative operating system such as Linux<sup>TM</sup> (Adobe's format works only on Macs and Windows PCs);
- have a computer read an e-book out loud using text-to-speech software, which is particularly important for visually-impaired individuals

From Adobe's perspective this program helped to remove the restrictions placed on e-book thus enabling others to copy them. Thus, this software could enable a pirate to copy an electronic book otherwise readable only with Adobe's reader technology and then sell that copy to others without the publisher's permission. That would be a copyright violation<sup>31</sup>. In short they claimed that it helped to circumvent the technological measures put in place by them circumvention of which is prohibited by the DMCA. They invoked the provisions of DMCA and requested the federal agencies in US to act consequent upon which the FBI arrested Skylarov when he came to US to deliver a lecture at a conference<sup>32</sup>. The



arrest led to extensive protests over the Internet and at the offices of Adobe. The non-profit Electronic Frontier Foundation, which works to keep the digital space free, defended Sklyarov and ultimately the Department of Justice permitted Sklyarov to return home, but elected to proceed against his employer, ElcomSoft, under the criminal provisions of the DMCA. In December 2002, a jury acquitted ElcomSoft of all charges, completing an 18-month ordeal for the wrongly accused Russian software company. Some analysts feel that thus 'when the DMCA protects technology that in turn protects copyrighted material, it often protects much more broadly than copyright law does. It makes criminal what copyright law would forgive'<sup>33</sup>.

Following this incident, Russia issued a travel advisory to Russian programmers travelling to US. Many foreign scientists expressed concern over travelling to US and some have withdrawn results of their scientific research from their websites<sup>34</sup>.

### **The DeCSS Case**

It was the counsel of the publishing industry Charles Clark, who famously observed in the run up to the WIPO Diplomatic Conferences that 'answer to machine is machine'<sup>35</sup>. The industry did take this advice seriously. With DMCA in place movie and music companies and even book publishers are increasingly bringing out works that are "copy-protected" or otherwise restricted by technological means. Thus you may not be in a position to copy the CD you bought to the hard disc of your computer or take a printout of the e-book to read at

your leisure. Nor can a music thus protected be converted into another format like MP3.

In 1996, the industry developed an encryption scheme that employs an algorithm configured by a set of keys to encrypt a DVD's content called the Content Scrambling System (CSS). This technology is protected as a trade secret. The industry then developed a licensing scheme for distributing the technology to manufacturers of DVD players. The manufacturers were obliged to keep the CSS algorithm confidential. They were also required to prevent the transmission of the CSS data (e.g., the movie) from a DVD drive to any internal recording device, including presumably a computer and the hard drive.

In September 1999, Jon Johansson, a Norwegian teenager, collaborating with two unidentified teenagers whom he met on the Internet, reverse engineered a licensed DVD player designed to operate on the Microsoft operating system, and culled out from it the information necessary to decrypt the CSS. Johansson was trying to develop a DVD player operable on Linux, an alternative operating system that did not support any licensed DVD players at that time, for use in his own computer. Johansson's programme was appropriately called DeCSS and he posted this on the Internet.

Eric Corley, the publisher of the magazine '2600: The Hacker Quarterly' and the website known as '2600.com', published an article in his website about how the content descrambling system of Johansson worked. If a user runs a DeCSS program with a DVD on the hard disk,

the DeCSS will decrypt DVD's CSS protection allowing the user to copy the DVD's file. Corley's article about the DeCSS described how CSS was cracked and explained how it could be used to copy DVDs. The article had links to where DeCSS could be found. Eight major motion picture companies brought DMCA suit against 2600 magazine seeking to block it from publishing the DeCSS software program, which defeats the encryption used on DVD movies.

Relying on the provisions of DMCA, which prohibited circumvention of technological measures such as the CSS and trafficking in such circumvention technology the court enjoined Corley from providing hyperlinks to DeCSS sites<sup>36</sup>. The magazine was not involved in the development of software, nor was it accused of having used the software for any copyright infringement. It was served this injunction as it did what a magazine was supposed to - report current events.

The story does not end here. The powerful Motion Picture Association of America (MPAA) contacted the Norwegian Economic Crime Unit and charged Jon Johansson for unscrambling DVDs using DeCSS in 1999 (when he was 15 years old) in a Norway court. Johansson was charged with violating the Norwegian Criminal Code section 145(2), which outlaws breaking into another person's locked property to gain access to data that no one is entitled to access. Johansson's prosecution marks the first time the Norwegian government had attempted to punish individuals for accessing their own property<sup>37</sup>. Previously, the government used this law to prosecute only in-

dividuals who violated someone else's secure system, like a bank or telephone company system, in order to obtain another person's records. The powerful industry groups protecting their IP rights do have wide reach and their economic interests to protect. Even his father, Per Johansson who owned the equipment was charged though the charge was later dropped. However, on 7 January 2003, the Norwegian Criminal Court consisting of three judges, of which two were computer experts, acquitted Johansson recognizing that he had the right to take the steps necessary to view his own DVDs on his own computers. The court observed that no one could be punished for breaking into his own property<sup>38</sup>.

#### **Effect on Scientific Research**

Critics also argue that the legislation implementing the technological measures as adopted by the US (DMCA) and the EU (EU Copyright Directive 2001) stifle scientific research and academic and scholarly communication<sup>39</sup>. Legislative prohibition on access controls put restrictions on what researchers could do with the data they study. There are a large number of computer security and encryption researchers who deal with the issues relating to circumvention of technological measures during their work. Research on high security computer firewalls and network security needs constant analysis, study and sometimes breaking anti-circumvention technologies in order to develop more effective technologies. Those who work on encryption research or computer security related research face legal consequences due to these legisla-

tive enactments<sup>40</sup>. It is not merely computer security and encryption researchers who may be targeted by the legislation. Any data in digital form can be protected by encryption and other technological measures and those who distribute digital data in this form may restrict what scientists and other researchers do with the data. For example, a pharmaceutical company, which puts the results of tests conducted on a drug claiming it is safe might want to restrict the use of this data permitting only certain tests to be conducted by means of a click wrap<sup>41</sup>. Such provisions result in provision of monopolistic control to copyright owners of such database, which is not within the scope of traditional copyright law.

There are certain exceptions to liability due to encryption research built into the DMCA. In the four years since the DMCA's enactment, critics argue that it has become increasingly clear that these exceptions are simply too narrow to be of any real use to the researchers. Computer science professors have found themselves entangled in litigation because of their academic activities, and universities and software companies have had to include attorneys in the research and development process to ensure compliance with the DMCA's terms<sup>42</sup>. It is hence argued that the DMCA has hindered the development of technologies that can protect computer networks from cyber-attacks<sup>43</sup>. The effect of conflict between cyber security and property rights on cyber security was highlighted by none other than White House Cyber Security Chief, Richard Clarke, who called for DMCA reform while speaking at Massachusetts Institute

of Technology in October 2002, noting his concern that the DMCA had been used to chill legitimate computer security research<sup>44</sup>.

Digitization and the potential for low cost global communication have opened new opportunities for dissemination and use of scientific and technical databases around the world. The ability to access the existing databases and the ability to extract and recombine selected portions of them for research has become a key part of the scientific process<sup>45</sup>. Access to such information is vital to the development and progress of science itself. Even in the new economy, scientific and technological advance requires progress in basic sciences, which need wide dissemination, as scientific progress today is most often a cumulative endeavour<sup>46</sup>. Even the greatest of authors stand on the shoulders of those who have gone before them, and authorship will suffer if copyright control is extended too far<sup>47</sup>. Over-arching intellectual property protection can jeopardize the web of scientific discourse that makes research and development effective<sup>48</sup>.

### **Effect on Innovation and Competition**

It is also alleged that the DMCA is being used to hinder the efforts of legitimate competitors to create interoperable products. For example, Vivendi-Universal's Blizzard video game division invoked the DMCA in an effort to intimidate the developers of a software product derived from legitimate reverse engineering. Another multinational, Sony Corporation used the DMCA to threaten hobbyists who created competing software for

Sony's Aibo robot dog, as well as to sue makers of software that permits the playing of Playstation games on PCs. In each of these cases, the DMCA was used to deter a marketplace competitor, rather than to battle piracy<sup>49</sup>.

Another instance involves Microsoft and a web based discussion forum hosted by 'slashdot.org'. In the slashdot forum that facilitated technologists to discuss issues on their bulletin boards, several individuals alleged that Microsoft had changed the open, non-proprietary Kerberos specification in order to prevent non-Microsoft servers from interacting with Windows 2000. Many speculated that this move was intended to force users to purchase Microsoft server software. Microsoft responded by publishing its specification. It did so by means of a click wrap "I agree" licence, which forbade disclosure of the specification without Microsoft's consent. Some smart technologists figured out how to bypass this licence agreement, the results of analysis about the specification were posted on the forum after which there was heated discussion about it. Microsoft learned about it and threatened 'Slashdot.org' to remove the postings alleging DMCA violation<sup>50</sup>. Microsoft surely may not be the only entity in the world that would like to control the wider communities for the use of its information<sup>51</sup>.

Companies that have nothing to do with copyright protection have also discovered the law's broad reach. Dow Chemical Co used the DMCA to shut down a Website that attacked the company. Wal-Mart Stores Inc and other re-

tailers invoked it to remove the details of forthcoming sales from a site for bargain hunters. Apple Computer Inc. cited the DMCA to stop one of its dealers from producing and selling software that allowed Apple's new DVD-burning technology to be used on earlier models of its Macintosh computers. Apple didn't explain its motivation, but commentators noted that upgraded older machines meant fewer sales of new Macs<sup>52</sup>.

Some of the recent experiences show that companies could claim violations when competitors made compatible products. The result, according to some experts, would encourage monopolies and severely curtail consumer choice<sup>53</sup>. Lexmark a toner cartridge company has sued its competitor Static Control, which produces refill cartridges for Lexmark printers alleging that it violated DMCA by duplicating a special security device that links Lexmark printers and toner cartridges. This device is a security chip added by Lexmark to the cartridge and the printer. If the chips didn't execute a secret handshake, the cartridge would not work. If the cartridge had been refilled, by some one other than Lexmark, the chips would not let the printer operate. It was this device that was contended as violation of DMCA. Lexmark is accusing Static Control of violating the DMCA by deciphering its access code in order to mimic the secret handshake. Though the suit may go on for years, Lexmark has already won the first round by obtaining an injunction against its competitor.

It is not that the entire industry is supporting strict copy protection law. Intel, the leading chip manufacturer and a

member of Business Software Alliance, which supports DMCA, has taken a leadership position in Silicon Valley pointing out the problems with expansive copyright proposals. Intel co-founder and Vice President, Les Vadasz warned the Senate in the year 2002 that a proposal to implant copy-protection technology in nearly everything with a microprocessor would have dire side effects<sup>54</sup>. Hewlett Packard also appears to have taken the same position<sup>55</sup>. This apparently shows a rift between the software developers and hardware manufacturers in their appreciation of legal landscape in the digital world.

In the current policy landscape, with such laws as the DMCA on the books, strict controls could lead to greater stifling of innovation and free speech, experts argued at a recent conference on the law and policy of digital rights management at the University of California at Berkeley<sup>56</sup>.

### **Effect on Fair Use**

Author's property rights in an expressive work legally restrain others from the use of that expression. As part of the balance between the exclusive rights of authors, artists and other creators on the one hand, and the social goal of wide dissemination of knowledge on the other, international copyright conventions allow countries to place limits on the right to prevent unauthorized use and reproduction in certain prescribed circumstances. The rationale for providing fair use provision is that intellectual property is different in kind as compared to tangible property. This is because of what economists

call 'non-rivalrous' character of ideas and expressions. The sharing of a physical good results in one person enjoying less of it while sharing of ideas does not lessen others enjoyment of it. Whereas all tangible property is scarce ideas and expressions are not giving them the characterization as 'public goods'. Hence all rights normally associated with private property are not extended to intellectual property and limitations are placed on exclusive enjoyment of these rights.

In the economic analysis of copyright, fair use<sup>57</sup> is intended as a device to correct certain type of market failures that are likely to occur in the market for perpetuated information created by copyright law. As per this theory, the cost of negotiating licence itself will deter the uses of works by potential users if anticipated benefit out of such use is less than the cost of negotiating the licence. Fair use doctrine allows the potential user to take the needed portion of the work and make use of it without seeking a licence, thus enabling user that otherwise will be frustrated. Fair use doctrine is the societies investment for further creation of works<sup>58</sup>.

Fair use doctrine epitomizes the purpose of copyright protection, namely, promotion of learning and thereby cultural progress of the society. The principle of fair use doctrine in copyright law is also recognized by the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), which permits these exceptions in special cases, which do not conflict with the normal exploitation of the work nor unreasonably prejudice the legitimate interests of the right holder<sup>59</sup>. Overbroad control on copyright

works by the authors may set in motion the law of diminishing returns, resulting ultimately in private control over knowledge that each generation must acquire anew. Knowledge in every country is the surest basis for public happiness and for its propagation access to the cultural products of the society must be reasonably available for public at large. Fair use preserves proprietary rights in creative works while accommodating public interest in dialogue, deliberation and advance of knowledge<sup>60</sup>.

The academic community world over was keen that when the new treaties were formulated it should not restrict the scope of fair use merely because of switchover from analogue to the digital medium<sup>61</sup>. In order to meet these concerns as well as to ensure that the potential of distance education was not curtailed, India introduced an amendment to the Preambles of the Internet Treaties<sup>62</sup>, which now reads as follows:

Recognizing the need to maintain a balance between the rights of authors and the larger public interest, particularly education, research and access to information, as reflected in the Berne Convention

Further the Agreed Statement concerning Article 10, which deals with limitations and exceptions, reads as follows:

It is understood that the provisions of Article 10 permit Contracting Parties to carry forward and appropriately extend into the digital environment limitations and exceptions in their national laws, which have been considered acceptable under the Berne Convention. Similarly, these provisions should be understood to

permit contracting parties to devise new exceptions and limitations that are appropriate in the digital network environment.

The centrality of fair use as a critical and crucial element in the copyright philosophy is thus recognized by the treaties.

One of the major criticisms against DMCA is that it virtually stops the fair use rights in the electronic environment. Advances in technology facilitate fine-grained control over uses of works and legislations like the DMCA facilitate accentuation of this control. Society faces threat to free speech from these controls as is evident from the case law developments in the United States, which indicate that whenever there was conflict between free speech and property rights in recent years, property right has triumphed<sup>63</sup>. While combating piracy is definitely a social objective a provision like that of DMCA extends total and unilateral control to copyright owners over their work tilting the copyright balance.

An example is the copy-protected CDs now being marketed in the US and elsewhere. Such CDs could be played only on instruments designed to play them but they cannot be used on different formats. Whatever the impact that these copy protection technologies may have on online infringement, they are certain to interfere with the fair use expectations of consumers. For example, copy-protected discs will disappoint hundreds of thousands of consumers who have purchased MP3 players, despite the fact that making an MP3 copy of a CD for personal use is a fair use. Making "mix CDs" or copies of CDs for the office or car are other examples of fair uses that are potentially im-

paired by copy-protection technologies<sup>64</sup>.

Another cardinal principle of copyright applicable to printed works is that of first sale exhaustion. This means that once sold the right of the owner ceases and the user is free to use the work. Technological protection measures, particularly as framed under DMCA make this principle meaningless. To top it all, protection through technological measures is for infinite period while copyright is time limited.

We are entering an era where books, music and movies will increasingly be “copy-protected” and otherwise restricted by technological means. Whether scholars, researchers, commentators and the public will continue to be able to make legitimate fair uses of these works will depend upon the availability of tools to bypass these digital locks. What the DMCA does is to ban the availability of all technologies, which enable circumvention and thus make fair use impossible. Copyright owners argue that these tools, in the hands of copyright infringer can result in “Internet piracy.” But the traditional remedy for piracy under copyright law has been to seek out and prosecute the infringer, not to ban the tools that enable fair use. After all, photocopiers, VCRs, and CD-R burners can also be misused, but no one would suggest that the public give them up simply because they might be used by others to break the law<sup>65</sup>. It may also be noted that authors echoed similar apprehensions when libraries were set up in the 19<sup>th</sup> century but experience shows that it has only been favourable to authors as it resulted in increased sale of books.

### **In a Flux?**

The DMCA contains a provision which enables the US Copyright Office to conduct a triennial rulemaking proceeding to determine whether there are particular “classes of works” as to which users are, or are likely to be, adversely affected in their ability to make non-infringing uses if they are prohibited from circumventing such technological measures<sup>66</sup>. This rulemaking process contemplates that the Library of Congress in consultation with the copyright office could incorporate specific exemptions, which would facilitate circumvention technological measures. Such a process is currently underway in US and the first public hearings are scheduled to begin in April 2003<sup>67</sup> to decide what changes, if any, should be made to the section of the DMCA that restricts bypassing copy-protection schemes. The necessity of such exercises show the need for law to be flexible in the digital environment as the technologies evolve and market practices develops rapidly. It is also worthwhile to note that the lawmaking process is a participatory one as anyone who is interested has been asked to respond to the notification.

The criticism against DMCA has, it appears, forced the US policymakers also to take notice. There are two bills<sup>68</sup> currently pending in US Congress to specifically permit circumvention for fair use purposes. One appropriately called the ‘Balance Act’ aims to ensure that consumers are allowed to make copies of lawfully obtained digital content for their personal use. There are other lawmakers who publicly voice their concern. “We

never contemplated” cases such as Lexmark’s when the DMCA was written, a member of the US Congress, Howard Berman stated at a Silicon Valley panel that examined the law. “Let some of these things play out in court decisions,” Berman said<sup>69</sup>. Law’s adaptation to technology does not seem to be an easy one.

### Developing Country Concerns

Copyright related issues are increasingly relevant for developing countries as they enter information age and as they struggle to participate in the global knowledge-based economy. Access to books and other learning materials have been a core concern of developing nations that they voice at various forums. It found international acceptance in the copyright world during the 1967 Stockholm Revision of Berne Convention<sup>70</sup>. These concerns accentuate as the world moves over to the information age. As the World Bank has noted:

If knowledge gaps widen, the world will be split further, not just by disparities in capital and other resources, but by the disparity in knowledge. Increasingly, capital and other resources will flow to those countries with the stronger knowledge bases, reinforcing inequality.... But threat and opportunity are opposite sides of the same coin. If we can narrow knowledge gaps and address information problems ... it may be possible to improve incomes and living standards at a much faster pace than previously imagined<sup>71</sup>.

Due to the centrality of knowledge in the post-industrial economy creation of knowledge products assume critical importance in development. Rapid advances

in information and communication technologies are transforming the production and dissemination of copyright works. Though began as a system to protect the authors rights, today the copyright system protects right holders including transnational companies with commanding power in the global economy. This process has been accompanied by a strengthening of national and international copyright protection. This is what UNESCO’s *World Information Report* has to say:

Copyright has emerged as one of the most important means of regulating the international flow of ideas and knowledge-based products, and will be a central instrument for the knowledge industries of the twenty-first century. Those who control copyright have a significant advantage in the emerging, knowledge-based global economy. The fact is that copyright ownership is largely in the hands of the major industrialized nations and of the major multimedia corporations placing low per capita income countries as well as smaller economies at a significant disadvantage<sup>72</sup>.

Developing countries need to understand these issues in the digital context clearly and frame policies in their national interest. The Government of United Kingdom had set up a Commission on Intellectual Property<sup>73</sup> to examine how intellectual property rights might work better for poor people and developing countries. The final report of the Commission titled *Integrating Intellectual Property Rights and Developmental Policy* was published on 12 September 2002.

The Commission found that the available evidence indicates that access to



books and other materials for education and research remains a critical problem in many developing countries, particularly the poorest. "Most developing countries remain heavily dependent on imported textbooks and reference books, as this sector is often not commercially feasible for struggling local publishers to enter. The prices of such books are beyond the means of most students"<sup>74</sup>. They recommended:

In order to improve access to copyrighted works and achieve their goals for education and knowledge transfer, developing countries should adopt pro-competitive measures under copyright laws. Developing countries should be allowed to maintain or adopt broad exemptions for educational, research and library uses in their national copyright laws. The implementation of international copyright standards in the developing world must be undertaken with a proper appreciation of the continuing high level of need for improving the availability of these products, and their crucial importance for social and economic development<sup>75</sup>.

However, with reference to protection of technological measures as contemplated in the WCT, the Commission noted that such measures pose threats to access and diffusion of knowledge and technology. The Commission observed that the growing trend within publishing and software industries towards distribution of content online, together with access restrictions such as encryption technologies and digital rights management systems rescinds the traditional "fair use" rights to browse, share, or make private

copies of copyrighted works in digital formats. Since works may not be accessible without payment, even for legitimate uses, for developing countries where Internet connectivity is limited and subscriptions to on-line resources unaffordable, it may exclude access to these materials altogether and impose a heavy burden that will delay the participation of those countries in the global knowledge-based society.

Stating that issues surrounding access to information and knowledge over the Internet are still emerging, the Commission concluded that it was premature at the present time for developing countries to go beyond TRIPS standards on intellectual property protection.

With reference to the provisions of the DMCA, the Commission had the following observation:

...We believe developing countries would probably be unwise to endorse the WIPO Copyright Treaty, unless they have very specific reasons for doing so, and should retain their freedom to legislate on technological measures. It follows that developing countries, or indeed other developed countries, should not follow the example of the DMCA in forbidding all circumvention of technological protection. In particular, we take the view that legislation such as the DMCA shifts the balance too far in favour of producers of copyright material at the expense of the historic rights of users. Its replication globally could be very harmful to the interests of developing countries in accessing information and knowledge they require for their development<sup>76</sup>.

### Differing Approaches

In the implementation of provisions relating to technological measures itself there are other approaches than the one taken by US in its DMCA. Australia is an example where digital rights are protected without compromising fair use exceptions. The Australian Digital Agenda Act, which modified its copyright law to make it compatible with the WIPO treaties, bans the preparatory activities that deal with circumvention like manufacture, distribution, import, sale, etc of devices that enable circumvention. Unlike the DMCA, the Australian Act doesn't ban the act of circumvention as such but it only bans making of and commercial dealing in circumvention devices. This approach limits the scope of circumvention prohibition and enables fair use provisions. Further, the Australian Act specifically permits the use of these devices for acts permitted under the law<sup>77</sup>. The ban does not apply if the person gives to the supplier of a device or service for circumvention a declaration stating that such device or service is to be used only for permitted purposes. The ban does not apply to making or importing of a circumvention device for use or supply exclusively for permitted purposes<sup>78</sup>.

The reasons for such differing approach are not far to seek. Though both the United States and Australia have strong commitments to protection of intellectual property, they do not share the same national interest or the international market for copyright material and this is reflected in their respective legislation<sup>79</sup>. Australia is a net importer of copyright material by a very large margin. Appar-

ently the public interest in having copyright protection may not necessarily be co-extensive with the interest of copyright owners, particularly when the majority of copyright royalties are paid to copyright owners located overseas<sup>80</sup>. The differing approaches in incorporating the treaty provisions in national legislations reinforce the hypothesis that each nation determines the copyright balance on the basis of its domestic imperatives and the net trade balance.

Japan also approached the issue differently. The new article 120*bis*(ii) of the Japanese Copyright Act<sup>81</sup> makes it a criminal offence to circumvent technological protection measure "as a business" in response to a request from the public<sup>82</sup>. Consequently circumvention for private use is not covered. However, article 30 of the Japanese copyright law, which exempts private copying states that such copying constitutes an infringement if the person making the copy knows that such reproduction becomes possible by circumvention of technological measure<sup>83</sup>. Thus it is not circumvention that is unlawful, but making of the copies.

The European Union Copyright Directive<sup>84</sup> deals with technological measures in article 6(1), which states "member states shall provide adequate legal protection against circumvention of technological measures, which the person concerned carries out in the knowledge, or with reasonable grounds to know, that he or she pursues that objective." It appears that as opposed to the DMCA there is a subjective element involving intention or reasonable grounds of knowledge; an element of men's era is involved<sup>85</sup>. Some

analysts feel that this may have the effect when implemented in specific cases of being less vigorous than the DMCA<sup>86</sup>. Article 6(2) of the directive deals with tools for circumvention. It states “member states shall provide adequate legal protection against the manufacture, import, distribution, sale, rental advertisement for sale, rental, or possession for commercial purposes” of decryption technology primarily designed to circumvent. There is no knowledge requirement here but possession for non-commercial purposes seem to be allowed.

Article 5 of the EC copyright directive deals with fair use provisions. Article 5(2) and 5(3) contains a list of about 20 exceptions, which should be made available to the users. They include: (i) reprography; (ii) certain permitted acts by libraries, educational institutions, museums and archive; (iii) the making of certain ephemeral copies for archival purpose by broadcasters; (iv) the reproduction of broadcasts by certain social institutions; (v) certain uses for scientific or teaching purposes; (vi) certain uses by the disabled; (vii) certain uses for public security or administrative parliamentary or judicial proceedings<sup>87</sup>. With respect to private copying member States may take similar measures to ensure efficacy of private copying exception existing in national copyright laws<sup>88</sup>. With reference to exceptions in the context of technological measures, the Article 6(4) provides that member states should promote ‘voluntary measures’ by right owners to ensure that technological measures are designed by right owners to accommodate the listed exceptions or otherwise provide means of

beneficiaries exercising these exceptions. Member States are also obliged to establish mechanisms for effective and meaningful negotiations between all interested parties with respect to design of technological measures<sup>89</sup>.

The real impact of the EC directive could be gauged only after the member States amend their respective legislations and judicial pronouncements come out in few cases.

### **A Public Policy Tool**

Copyright law constitutes a kind of information policy, serving the public interest in maximizing the availability of information products by, on the one hand, granting an exclusive right and thereby an incentive to create, and, on the other hand, by limiting the monopoly copyright provides to ensure access to such works<sup>90</sup>. Most of the copyright products having impact on access to information, education and cultural products, developing countries where access to information is a critical need of the society, need to calibrate this public policy tool carefully.

The intertwining of copyright and trade issues has brought new dimensions into the framing of copyright policies. The recognition of economic importance of copyright and neighbouring rights arose from their increased role in trade relations and international economic integration powered by technological developments<sup>91</sup>. Copyright issues are now put before policy makers as trade issues<sup>92</sup> due to which the perceived national interests of a country in terms of trade advantage play a role in the determination of its copyright policy. A nation, which is a net

exporter, may naturally seek a higher level of protection while a net importer may be content with a loose regime. This was evident in the 19<sup>th</sup> century relations on copyright when a negative trade balance in terms of trade in published material, particularly books, made US choose a loose regime. Charles Dickens had travelled to America to impress upon that country of the need for providing stronger protection for authors. In the 20<sup>th</sup> century, a positive balance of trade pushed US towards Berne<sup>93</sup>. According to Goldstein:

today's worshippers in the Berne Cathedral have very different visions of paradise. For Americans, it is a place where the economic logic of rights extending against every new and valuable technological use of copyrighted works is respected by every other Berne adherent. For the Europeans and other net importers of copyrighted works, it is a smaller place, where the subject matter and rights concerned are confined to their traditional pattern, with no room for newer technologies like home taping that are better left to neighbouring rights<sup>94</sup>.

Due to the importance of copyright products in international trade and consequent economic importance, of late there has been a trend to seek excessive protection to the right holders. Like in the area of patents, in the field of copyright, there has been a fundamental shift from the system originally based on non-commercial considerations- the benefits that the society may derive from creative authorship and dissemination of ideas- to almost a law of misappropriation<sup>95</sup>. The ultimate objective would be to protect the commercial value of creative works. Under

the new, dominant conception that has emerged in response to changes in technology and market trends, the primary concern is rewarding investors, rather than encouragement of individual creation or encouragement of dissemination of knowledge<sup>96</sup>.

Owing to its economic importance, various interest groups exert considerable influence in framing national copyright policies. According to Litman :

the history of (US) copyright legislation has been characterized by multilateral bargaining among affected stakeholders. Some of the provisions in the current statute are there because the affected interest groups asked for them, and the other groups didn't object. Others are the result of hard fought bargaining among affected stakeholders<sup>97</sup>.

Commenting on the roles various interest groups played in the (WIPO) Diplomatic Conference in 1996, Dr Ayyer states that a country's position on a copyright issue lay close to the centre of gravity of interest groups in that country<sup>98</sup>. The policy on copyright of a national regime thus requires 'copyright balance' to be determined according to real domestic imperatives rather than abstract consideration of the relative position of authors and copyright users<sup>99</sup>.

Due to all these factors, copyright policy making has become a very complex issue susceptible to various pressures from within and without a national copyright regime. The ultimate balance arrived at by any system will thus be the result of a trade off between various interests the law seeks to protect. The WIPO treaties

do provide certain flexibility to individual countries to develop exceptions and limitations that are appropriate to their particular circumstances<sup>100</sup>. The goal of policy makers is to calibrate the copyright balance in such a way that it provides strong and effective rights, but within reasonable limits and with fair exceptions<sup>101</sup>. This by no means is an easy task and governments will have to reconcile these seemingly contradictory objectives keeping their national interests and domestic imperatives in view.

#### **Needed- A *Swadeshi* Policy**

The Indian Copyright Act is considered to be a very effective piece of legislation. It has helped flowering of our industries in the copyright field and maintains the right copyright balance. While ensuring reward to the creators, it is conscious of the educational needs in a country where millions seek access to education at all levels. Specific provisions exist in our Act for granting compulsory licences for educational, scientific, and technical books. In order to ensure access to educational and scientific materials there are specific fair use provisions in our Act that deal extensively with educational concerns. Being a culturally rich and diverse nation, the Act seeks to promote and protect its cultural idioms and practices. There are specific provisions in the Act making the performance of a literary, dramatic or musical work or the communication to the public of such work or sound recording in the course of any bona fide religious ceremonies etc, a non-infringing act.

These provisions show the *swadeshi*

spirit in our legislation. Copyright being an area where cultural ethos of the society are reflected, even our courts have reminded us of our obligations to make our national ethos to be reflected in our legislation. In *Indian Performing Rights Society vs Eastern India Motion Picture Association*<sup>102</sup>, Justice V R Krishna Iyer pointed out an 'un-Indian feature' which existed in the then copyright law. The law existing then required a musical work to be reduced in writing or in graphic form for protection, a condition that was alien to the age-old practices in Indian systems of music. Justice Krishna Iyer noted, "Of course, when our law is intellectual borrowing from British reports, as admittedly it is, such exoticism is possible". Stating the importance of performers in Indian music and noticing that the singer had no rights as per law, he noted that the disenfranchisement of the musician or musical artists to copyright is un-Indian. The learned judge stated that these observations were made as art depends on ethos and aesthetic best of people and universal norms notwithstanding, each country must protect its creative talents. Admitting that law making is the domain of the Parliament, the court through this obiter dictum communicated the 'infirmities as existed in the law'. The law was then amended changing the definition of 'musical works' and granting rights to performers<sup>103</sup>. The philosophy underlying our copyright law as may be deduced from these judicial pronouncements and legislative actions is that the law should reflect the Indian realities, reflect its cultural practices and suit its national interest.

In the emerging global economy, intel-

lectual property rights does not remain as a distinct or self contained regime but rather acts as an important and effective policy instrument that would be relevant to a wide range of socio-economic, technological and political concerns<sup>104</sup>. In the new economy, a nation's ability to convert knowledge into wealth and social good will determine its future<sup>105</sup>. If copyright law regulates the cultural products in the marketplace such regulations have to reflect the cultural ethos and economic demands of a nation. Indian copyright law keeps this perspective in its philosophy. The statutory licensing provisions in the Act, which dilutes authors' absolute rights underlines, this philosophy<sup>106</sup>. And the latest example is the amendment made in the year 1999 which introduced specific provisions for fair use of computer programs<sup>107</sup>. This approach ingrained in the present copyright law will have to be carried forward in the digital environment also. The Indian policymakers thus have the task of framing a legislation which upholds its national interests, suit the genius of this nation and protect its authors.

### **Role of Academia**

Gone are the days when copyright law could be regarded as just another piece of legislation. In the new information and knowledge-based economy, this branch of intellectual property rights extends its influence to almost all spheres of human activity. Hence legislating in this area should be everyone's concern. All legislative processes involve advocacy, lobbying, pressures and counter pressures. Probably these get accentuated in copy-

right matters as it deals with economic returns of the right holders, from the humble author to multinational recording studios and publishing houses to movie moghuls. The content providers or the right holders have obvious stakes involved and it is natural for them to protect their interests and one expects them to do so. But who will protect the larger public interest? Who will look at the broader issues of maintaining the unique cultural flavours or ensure access to information at affordable cost to the people? Who will guard zealously the freedom of fearless discourse in the academic and scientific fields? As emerging technologies throw up new challenges and as the law adapts to these developments, these issues acquire increased salience. An average citizen of this country will only turn to the learned academia to provide these answers. If we take the US example it is the academicians, indeed few professors of law, who steer the copyright debate so that right holders and public officials do not grab from public what is their due. Professor Lawrence Lessig of Stanford Law School led the constitutional challenge of the extension of term of copyright works in US. Professor Pamela Samuelson of University of California, Berkeley, Professor Jessica Litman, Wayne State University Law School, Professor James Boyle, Duke Law School, Professor Peter Jaszi, Washington College of Law, American University are but few of the famous examples of academia active in this field. The distinguished Indian academicians should take serious interest in legal policy matters on copyright so that decisions relating to copyright law

are made after informed public debate. What they need to protect is what they cherish most - maintain access to information. For restrictions on free flow of information are restrictions on liberty itself. There is a vital link between liberty and learning. And a balanced copyright law is required for ensuring an enlightened and informed public, a prerequisite for democracy to thrive.

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- 72 UNESCO(1998) "*World Information Report 1997/98* ,327,as quoted in the CIPR report, *note 51 supra*
- 73 The Commission had its Chairman, Dr John Barton, George E Osborne Professor of Law, Stanford University, California, USA and the members were Mr Daniel Alexander Barrister specialising in Intellectual Property Law, London, UK, Professor Carlos Correa, Director, Masters Programme on Science and Technology Policy and Management, University of Buenos Aires, Argentina, Dr R A Mashelkar, FRS, Director General, Council of Scientific & Industrial Research and Secretary to the Department of Scientific and Industrial Research, Delhi, India,Dr Gill Samuels, CBE,Senior Director of Science Policy and Scientific Affairs (Europe) at Pfizer Inc., Sandwich, UK,Dr Sandy Thomas, Director of Nuffield Council on Bioethics, London, UK
- 74 CIPR report, 112, *note 51 supra*
- 75 *ibid*, p 113
- 76 *ibid*, p116
- 77 See Section 116A(3) of the Australian Copyright Act
- 78 Section 116A(4), *ibid*
- 79 Loughlan P, Music on hold: the case of copyright and the telephone, 18, *Sydney Law Review*, 1996, 342 at 344 quoted in Fitzpatrick, Simon (2000), Copyright imbalance: US and Australian responses to the WIPO Digital Copyright Treaty, University of Sydney, *European Intellectual Property Review*, 226
- 80 *ibid*
- 81 An English translation of the Japanese Copyright Act is available at [http://www.cric.or.jp/cric\\_e/ecolj/cl.html](http://www.cric.or.jp/cric_e/ecolj/cl.html)
- 82 Kamiel Koelman J, A hard nut to crack: The protection of technological measures, *European Intellectual Property Review*, Issue 6, 2000, 272
- 83 *ibid*
- 84 *note 24 supra*

- 85 Terese Foged, A comparative analysis of US vs EU approach on implementation of technological protection measures (2002) available at <http://www.jur.ku.dk/it-ret/Specialer/Foged%20Terese%20-%20analysis...PDF>
- 86 *ibid*
- 87 Vinje Thomas C, “Should we begin digging copyright’s grave?” *European Intellectual Property Review*, Issue 12, 2000,551
- 88 *ibid*
- 89 *ibid*
- 90 *note 54 supra*
- 91 WIPO (1994), International system of protecting copyrights and neighbouring rights, International Bureau of WIPO, Geneva available in Regional Copyright Seminar for Asia Pacific, Tokyo 1993, WIPO, Geneva
- 92 Litman Jessica, *note 25 Supra*, 81
- 93 The United States joined the Berne Convention in 1988 only
- 94 Goldstein Paul (1994), *Copyright’s Highway*, Hill and Wang, 169
- 95 Correa Carlos M, Fair use in the digital era, available at [http://webworld.unesco.org/infoethics2000/documents/paper\\_correa.rtf](http://webworld.unesco.org/infoethics2000/documents/paper_correa.rtf)
- 96 *ibid*
- 97 Litman Jassica, New copyright paradigms [www.law.wayne.edu/litman/papers/paradigm.htm](http://www.law.wayne.edu/litman/papers/paradigm.htm)
- 98 Ayyer R V V, *note 16 supra* 12
- 99 Fitzpatrick Simon, *note 30 supra*, 216
- 100 [http://ecommerce.wipo.int/survey/html/3.htm#\\_ftnref102](http://ecommerce.wipo.int/survey/html/3.htm#_ftnref102)
- 101 *ibid*
- 102 AIR 1977 SC 1443
- 103 See section 2(P) dealing with musical work and section 38 dealing with performers rights
- 104 Mashelkar R A, *Intellectual Property Rights and the Third World*, Council of Scientific and Industrial Research, New Delhi
- 105 *ibid*
- 106 See for example, sections 31, 31A, 32, 32A and 52j of the Act
- 107 These provisions are criticized by the US Special 301 report released recently claiming that it dilutes the protection provided to the authors. It however overlooks the fact that US courts had legitimised these reverse engineering of computer programs, for example see *Accolade Sega V*, 977 F2d (1992) or *Atari Games Corporation vs Nintendo of America Inc* 964 F. 2d 965 (9<sup>th</sup> on 1992). The DMCA also contains provisions, which allow reverse engineering