

Title Of Paper: The Role of the State in the Emerging Global Digital Economy

Suggested Theme For Paper: Strategy and Competitiveness

Name(s) Of Authors: Shishir K. Jha and Neeraj Mankad

Affiliation: Shailesh J. Mehta School of Management, IIT Bombay

Full postal address, telephone, fax and e-mail address:

Shailesh J. Mehta School of Management
IIT Bombay, Powai
Mumbai – 400 076
Maharashtra
Tel: +91.22.25767845
Fax: +91.22.25722872
E-mail: skjha@iitb.ac.in

The Role of the State in the Emerging Global Digital Economy

Abstract

The state has played a significant role in shaping the global digital economy. This is both true in shaping the early influence of United States, Europe and Japan in introducing TRIPS within WTO. The thrust for a global regime of trade related intellectual property rights, which also includes copyright, was initiated chiefly by the United States of America in the eighth Uruguay round of GATT talks due to intense lobbying from its domestic knowledge based industries and with unequivocal support from Europe and Japan. The inclusion of TRIPS within the subsequent WTO framework has gone a long way in aligning and harmonizing intellectual property of most WTO member states with the US viewpoint.

Subsequent state intervention within the specific national jurisdictions has proceeded in pace with the demands of WTO on its member countries. However, the state is increasingly being caught in the middle of a deeper struggle between the industries which have an analogic approach to developing business models as opposed to those who are more engaged in a digital approach to the development of business models.

The digital economy, itself enabled by the growth of the knowledge oriented economy, brings with it many radically different assumptions. A nation's policy that governs the digital access to information is a pivotal source determining the forms of control that can be exercised over such access. New digital technology, enabled by the Internet, is imposing a fresh challenge to conventional copyright oriented models. Large copyright owning organizations argue that digital media allows for an increasing possibility for piracy. Providing higher protection standards is therefore necessary. This explicitly stated position led the US lawmakers into signing the Digital Millennium Copyright Act of 1998. However the digital access to information is giving rise to new forms of organization and model creation. We would like to investigate the implications of such developments for the role of the state.

Some of the issues that we would like to address are: 1. Does the digital economy promise radically newer approaches for the access of information and knowledge for the people at large?; 2. How can the state provide an adequate policy framework to foreground a digital development agenda?; 3. What are some implications for both industry and civil society for embracing a digital development agenda?

Keywords: State policy, Digital Economy, International negotiations

“In a world where the economic growth of nations is driven by the creativity and knowledge of their people, effective Intellectual Property systems – which create incentives for innovation and structures for sharing the results – are keys to unlocking this human potential” (WIPO Overview, 2007)

Introduction

The building blocks of the global economy are getting increasingly re-shaped by the degree and extent to which information is directly used as inputs in the creation and distribution of goods and services. From sophisticated consumer profiling to surveillance techniques to ubiquitous search engines, the production, use, skillful deployment and manipulation of information is becoming the key to addressing the needs of firms, states and consumers alike. One specific dimension of the information economy is the push to capture data within bytes composed of machine readable zeroes and ones. This digitalization of the information economy has even further accelerated the speed at which we can produce, gather, use, transfer and share data. In this paper we would like to restrict our focus on how the state is attempting to negotiate a role between the various inconsistent and often contradictory demands of a digitalized economy.

The state has clearly played a significant role in shaping the contours of a global digital economy, enabled by the internet and digital computing devices, such as the computer. It is perhaps a testament to the significance of the information age for the US economy that it engineered a coup of sorts within the eighth GATT round of trade talks. The thrust for a global regime of trade related intellectual property rights (TRIPS) was initiated chiefly by the US due to persistent and very calibrated lobbying from its domestic knowledge based industries and with unequivocal support from Europe and Japan (Santoro, 1995; Smith, 2004). The heads of the knowledge oriented industries in the United States, including entertainment, software, pharmaceutical among others, were quick to recognize the economic potential of protecting intellectual property.¹ Under the leadership of the Chairman and Chief Executive Officer, Edmund Pratt of Pfizer, a transnational Intellectual Property Committee (IPC) was instrumental in transforming “intellectual property from a lawyer’s specialty into an international trade issue of great concern to governments around the world” (Santoro, 1995).

The inclusion of TRIPS within the subsequent WTO framework has gone a long way in aligning and harmonizing intellectual property of the 151 WTO member states with the US viewpoint. While much has been written about how the US brilliantly re-wrote the script of global trade by introducing a global trade regime in intellectual property rights, an important ingredient of the information economy, we would like to examine more specifically the related and recent dimensions of policy changes within the digital context.

The pace of globalizing of an information economy was certainly given a significant boost with the introduction of TRIPS. Subsequent state intervention within the specific national jurisdictions has proceeded in pace with the demands of WTO on its member

countries. However, the path in negotiating through the maze of demands and counter-demands of an information economy is not straight forward. The state is increasingly caught in the middle of an intense struggle between the industries and interests which have a 'technologically-restrictive and regulated' approach to an information economy as opposed to those who are more interested in building a more 'unrestrictive and open' approach to such an economy.

A nation's policy that governs the digital access to information is a pivotal source determining the various forms of control that can be exercised. Digital technology, enabled by the Internet and digital devices, is imposing a fresh challenge to conventional models of content creation and delivery models. The digital economy brings with it a set of many radically different assumptions as opposed to those embedded in the brick and mortar analogic economy. Such an economy is disrupting the nature of information exchange between individuals and organizations. The implications of such shift are considerable for policy makers in particular and the state in general. How does the state foreground itself in a digitally oriented information economy? Does the state seek to safeguard the older forms of value formation, as attempted by the older media industries, such as broadcast, recording and movie industries or does it facilitate the creation of newer priorities to allow for the emergence of new media industries, organized around networks and digital devices? The answers are not comprehensively clear either for developed or developing countries, particularly for the latter set which has just begun its digital journey. But perhaps one can draw lessons from the experiences of other developed economies.

Challenges of Digital Economy

The digital economy is clearly imposing fresh challenges to conventional policies structured around analogic approaches to information sharing. There are four key areas of the impact of the information economy. First is the non-rivalrous nature of information, the basic ingredient of a digital economy, allowing multiple users to simultaneously access the same piece of information. Second is the economy's intrinsic value addition, the more one uses a piece of information the more is its value. Third is the low inventory cost for storing digital material whether it be in the form of music tracks, films or books and fourth is the almost negligible marginal cost of production. These set of simple assumptions have dramatically altered how value can be created, delivered and disrupted from the traditional analogic form.

Firms like Google, Wikipedia, Amazon, Magnatune among a host of others, are dramatically disrupting ways of interacting with information flows. The scope of the digital economy is vast and spans across various areas like governance, business, socialization, healthcare and education. As an example of such disruption, take the United States music industry in the throes of considerable crisis. Music tracks are normally compiled and sold in CD format providing limited choice to consumers. This practice changed dramatically with the streaming, downloading and sharing of individual tracks by music enthusiasts. Apple took this basic insight and completely revolutionized access to musical content. It basically persuaded the big five US music

label companies to license all their tracks, provided a pay per download service through its iTunes stores and made the music easily available through a slickly designed iPod. Consumers received better value for their money as compared to paying for undesirable tracks they were forced to purchase through the CD format. As the network infrastructure inexorably improves with faster and large file transfers, this digitally enabled disruption will clearly impact other industries. The publishing, book retailing and film distribution industries, to name a few, are also very likely to be significantly impacted with ubiquitous digital access and very low marginal costs.

The digital economy is basically creating structural changes in the forms through which information has been traditionally created and distributed. There is an apparent revolution in both the democratization of information production as well as in information dissemination. Content can be accessed on demand through various media like television, internet, mobile telephony or iPods. Such content can be created, stored, transferred, modified and re-mixed across various forms like data, pictures, text, voice and images. Effective search engines mediate between the producers and consumers of such information. With the increase in consumer led content development, thanks to blogs, Wikis and other social networking sites, individuals are themselves both, the creator and the consumer of much information flows.

Role of the State in a Digital Economy

Tarleton Gillespie in an important new book titled *Wired Shut: Copyright and the shape of digital culture* lays out the importance of how copyright and the digital economy shapes the very fabric of our culture. He says:

“Copyright is at the heart of cultural policy – those rules that help to govern what is said, by whom, and with what effect. If we are at all concerned about the power of communication, the dynamics of democracy, the politics of culture, or freedom of expression, copyright must be fundamental part of our inquiry. Shifts in the design and application of copyright law must be recognized as having consequences in all of these domains as they migrate to the digital realm. To the extent that the Internet, among other technologies, is increasingly designed and legislated to be a medium that not only facilitates communication but also imposes tight controls on it, we are very much shaping what the Internet is, will be, and can be. If the personal computer and the Internet are and will continue to be fundamental tools for cultural participation – the ‘new media’ – then the institutional arrangements bent on pressuring hardware manufacturers to embrace restrictive, techno-regulatory control systems warrant significant concern.”²

The facilitation and control of the forms of digital communication is at the very epicentre of the policy debate as shaped by the state. The introduction of the Digital Millennium Copyright Act (DMCA) of 1998 is a significant case in point about how the state can deliberately shape the digital economy and culture. The capability of technology to enable the compression of audio and video files in a format that enabled their distribution over the internet, resulted in the creation of various legislation based on the intense lobbying by the US industry, the music and entertainment in particular by using their enormous wealth (Adams, 2006). The industry not only lobbied for a national legislation in the US, but facilitated for a creation of an intellectual property rights organization with global reach and power, namely the World Intellectual

Property rights organization copyrights treaty.³ This was implemented in the US as the Digital Millennium Copyrights Act of 1998, and as 'Copyrights in the Information Society Directive' in Europe.

Alarmed at the rapid penetration and acceptance of the digital medium and the widespread sharing of content through the networks, the content industry successfully lobbied for measures from the state to help prevent, what it terms as, piracy. It was argued that rampant piracy, a direct result of the rapid and untamed growth of digital media was threatening their business models. Enforcing higher protection standards worldwide through TRIPS plus measures, technological locks and bilateral trade treaties would help to compensate and perhaps minimize the attendant loss in revenues. This argument did convince the US lawmakers into signing the Digital Millennium Copyright Act in 1998. DMCA basically allows the copyright owner to put a cryptographic or technological lock around a work in order to control unauthorized access, copying, performance or display of the work. Though a US law, DMCA has trans-national implications, as it begins to mediate access to cyberspace for people living in other countries. Critics of the law have pointed to several grave consequences, the primary one being reduced "fair use" access and a diminished public domain (Benkler, 2006; Lessig, 2001a; Samuelson, 1999).

We observe that the State, under the influence of entrenched local knowledge oriented industries develops legislation which creates a decisive impact on copyright in particular and the digital economy in general. It is argued that such protection may eventually defeat the very purpose of copyright. Copyright is an important public policy tool for authorizing protection of any newly authored work. It is essential, for our purpose here, to situate the debate on copyright protection within the terms of an original bargain between the state and the citizen. English Law was among the first to grant copyright protection as a right for authors of inventive works (Boyle, 1996; May, 2000). The basic idea was to provide an artificial monopoly or an exclusive state granted right to an author or creator for a fixed number of years in return for the work to mark a re-turn to the public domain at the end of its monopoly term. By providing exclusive protection through copyright monopoly, it is expected that an author would have better incentive to create original work. One important safeguard that was introduced to sustain equilibrium between the protective and open domains was to acknowledge that general facts or ideas, such as basic principles of natural sciences, cannot be copyrighted. It is only original expression of such ideas that can be protected.

The important question is can the state play a more independent role in designing policies that aim at developing the nation by capturing the value offered by the digital economy. A state sanctioned balance between protection and openness can be undermined if greater focus gets placed on the former as opposed to the latter, which is exactly what DMCA helps to achieve. The asymmetry is even more pronounced as it is often the large publishers, and not the individual authors, who profit from the state's protection. In the subsequent sections, the importance of the role of the state in the digital economy is outlined by taking a look at two policies that have had a profound

impact on the development of the digital economy and it can be a threat to the diminishing public domain.

WIPO Development Agenda

The World Intellectual Property Organization (WIPO), in existence since 1974, is a United Nations body that is expected to develop a balanced and accessible international intellectual property system. May (2006) traces the history of WIPO to the nineteenth century with the establishment of 1883 Paris Convention for the Protection of Industrial Property (for patents, trademarks, and industrial designs) and the 1886 Berne Convention for the Protection of Literary and Artistic Works (for copyrights). These agreements reflected consensus but were not imposing laws. Sensing a more contributory role, the member countries established a joint secretariat laying the foundation for global IP governance, under the supervision of the Swiss; called *Bureaux Internationaux réunis pour la protection de la propriété intellectuelle* (BIRPI). The BIRPI, after subsequent deliberations, paved the way for the establishment of the WIPO at its 1967 Stockholm conference and its incorporation within the UN in 1974.

The IP system, thus developed by WIPO, should aim in contributing to the development of the economic, social and cultural areas of countries. It should be focused on protecting public interests. May (2007) observes that the documents and publications of WIPO however seem to suggest that WIPO takes a stand that development is best served by a strong protection oriented intellectual property regime, and hence promoting its use will help in global development. This agenda is not universally supported and the adherents of this agenda are among the most developed and rich countries, with the developing countries looking at other possibilities, which lead to the formation of a new Development Agenda for WIPO. This new Development Agenda, initiated by Brazil and Argentina, broadens the scope of WIPO from IP protection to a wider development-committed agenda.

The core issue surrounding the Development agenda is linked to the fact that being a constituent of the UN, WIPO is expected to remain committed to the development aims of the UN. Hence, the activities, nature and focus of the agenda of WIPO should be aimed, not merely in the promotion of Intellectual Property, but also in global development, and that it could promote Intellectual property only if it indeed helped in the wider goal of development (May, 2006; WIPO, 2004). Apart from this key issue, the Development agenda also raises other important areas which need debate. These are: (1) development dimensions and intellectual property rights setting - safeguarding public interests; (2) development dimension and transfer of technology; (3) development dimension and IP enforcement; (4) promoting a development oriented technical cooperation and assistance; (5) member driven organizations open to addressing the concerns of all stakeholders (WIPO, 2004). Most of the development agenda debate stems from the very fact that the creation of an IP dominated regime would result in a variety of new issues for developing countries.

In a document submitted to the WIPO inter-governmental meeting, the Electronic Frontier Foundation (EFF), a non-government organization, and an ad-hoc observer admitted by WIPO, cites some of the key reasons for the need for such a Development Agenda. According to EFF (2005), over-protective measures can pose threats which are likely to: a) override national copyright exceptions and limitations; b) impair access to knowledge by increasing the cost of accessing information; c) diminish the public domain, thereby expanding the knowledge gap between developed and developing countries; d) chill scientific research; e) restrict legitimate competition; f) stifle technology innovation; and f) preclude free and open source software development.⁴

The development agenda does not necessarily seek to reduce the importance or focus of IP, rather it seeks to emphasize that the protection and enforcement of IP is not an end in itself, but needs to be reoriented towards a more development set of concerns and therefore requires a reestablishment of the public policy aspects of intellectual property (May, 2007). It is true that not all developing countries, for example Mexico, support the development agenda (IP Watch, 2002), but nevertheless the one-sided stand taken by the developed countries is not consistent with their own civil-society reactions with feeble scrutiny and debate on such issues (Boyle, 2004). This is probably the reason why there is a consistent lack of respect for protection laws by consumers even within the developed countries.

For example, such is the momentum generated by the interest of consumers in new content delivery models that it has forced older recording companies to offer content without digital rights protection. The recent rather belated deal by Amazon with Sony BMG Music Entertainment to offer digital downloads of music without copy protection reflects the changes being made to Sony's business model. The deal will make over 200,000 songs available to Amazon's customers without any DRM. There have already been similar deals in the past with Universal Music, Warner Music and EMI (Lieberman, 2008). The Recording Industry Association of America (RIAA) continues however to prosecute individuals and college students for copyrights infringement.⁵ Interestingly, the large number of alleged violations warrants a question on the degree of public acceptance of strong copyrights. Not surprisingly, the development agenda finds opponents from the commercial and industry organizations whereas it gathers support from various non commercial and civil society organizations.

During the last several years, the Development Agenda has been the subject matter of discussions of a committee which has been set up as a Provisional committee on Proposals related to the Development Agenda (PCDA). During its fourth meeting in June 2007, the PCDA agreed to develop a work program to implement the recommendations related to various areas under its preview including Information and Communications Technology and Access to Knowledge (WIPO, 2007). The Members are expected to meet again in February 2008, and it does appear that the Development Agenda has gained momentum.

There is clearly a requirement for individual developing or developed states to play their respective roles in this debate and not succumb to the pressure of adopting a 'one-size-fits-all' policy, as advocated by the stronger members of WIPO. It is true that the pressure is quite unyielding and given the over all development concerns and ties to the world market that any state has, the temptation to succumb is strong. It would be best for the state to recognize the key areas that would be beneficial for them in a way that would safeguard their public interest.

Digital Rights Management

Traditionally, copyrights and patents were created to protect the author and creator/inventor for a limited period of exclusivity with the knowledge subsequently reverting back to the public domain. It is suggested that the development of printing press led to the exploitation of copyrights by book publishers who used it as a means to build their capital. The authors had the natural copyright to their works since they were the creators, but when they transferred the rights to the publisher, it was close to perpetuity (Bettig, 1996). Contemporary thinking and policy, as enabled by DMCA, allows for encryption and technological locks around the protective information which would result in the reduction of the public domain and its possible extinction (Boyle, 2004). Digital Rights Management (DRM) techniques are further used to restrict the flow of electronic content.

The ability of internet and computing devices to copy and distribute content of various forms has resulted in a loss of control by the industry. The powerful music and movie industry lobbied governments to create laws such as DMCA which offered technological protection measures and enabled the control in their hands. The highlight of this effort is that it not only covers individuals using it, but also companies that develop tools which help in circumventing these laws. In the case of DRM, the industry uses technical tools which are embedded in the formats (CDs, software, and the likes) that they distribute. In many cases, like Sony's Rootkit CD DRM, copy prevention software, these tools are embedded in the system of the user without their knowledge (Adams, 2006). This raises questions of privacy invasion and misuse of personal space. In Sony's case, the software was distributed with the CD and as users inserted the disk in their computer, the file was automatically written in the system and any attempt to erase files would not succeed. This software would also automatically access upgrades by Sony and prevent their copying as well. In some countries, this amounted to misuse of the law, and Sony had to stop its distribution and also provide a patch which could be used to repair (Adams, 2006).

What justifies acts like Sony's? Proponents of DRM justify the act as it stops them from being robbed of the benefits of their labor. It gives them an effective tool to ensure that the effort that the artist and the company put in to create and distribute the work to the public is well rewarded. According to them, this is an extension of the copyright philosophy to the electronic medium, where there is a need to develop laws which prevent piracy. It is difficult to detect cases of infringement in individual cases as copying a file is technologically easy. Although there have been a few cases of detection

and prosecution, they are allegedly large in number which have gone undetected and resulted in loss of revenue. Add to it the fact that the internet dilutes geographical boundaries, transfer of files across countries presents a challenge for the companies to detect and prosecute.

Conceptually, however, the digital medium requires a different approach. A digital file cannot be accessed by the user without an unauthorized copying onto its computer drives. Though allowed under copyright's fair use exceptions the large content industries would like to completely block such usage. Technological protection has become a key ingredient in the protection strategies of the industry to prevent as much unauthorized use as possible. What is therefore required is to maintain a balance of rights between the rights holder and the user by a law appropriate to the online environment (Gillen and Sutter, 2006).

In the case of DRM, the violation of 'fair use' is significant. Decades ago in 1985, the introduction of the Video Cassette Recorder (VCR) in US ushered in a new era for copyright protection (Bettig, 1996). In this case, film producers for television had viewed it as a threat to their 'livelihood'. The VCR provided viewers with a flexibility of watching their favorite programs by 'time-shifting', which meant that they could copy the program and view it at a later time period. This was looked at as a threat to the television producers and networks as they perceived it to be a danger to advertising revenues. Viewers who taped programmes at home either deleted the advertisements or ran through them while viewing. Thus, the industry sought legal intervention and lobbied for a favorable legislation against the VCR. The Betamax case, filed against Sony Corporation by Walt Disney Company and Universal City Studio was to sue Sony for assisting in copyright infringement by providing viewers with technology to copy. However, the Court ruling in Sony's favor found that it was in fair use since the individuals record it for their own use, in their own home and authors have voluntarily sold their rights to broadcasters to air to public homes free of cost (Bettig, 1996). History is repeating itself as music and entertainment companies try to use DRM to enforce legislation against fair use in the on-line space.

Yochai Benkler states that "the single most threatening development ... has been an effort driven primarily by Hollywood ... to require the manufacturers of computation devices to design their systems so as to enforce the copyright claims and permissions imposed by the owners of digital copyrighted works." The industry calls this the Trusted Computing approach in which "machines that can be trusted to perform according to factory specifications, irrespective of what their owners wish."⁶ Perhaps it is the realization and resistance of the computer hardware and software, electronics and telecommunications industries, who understand that such a law would undermine their innovation and creativity that such a law has not yet been passed, though the effort persists.

We are faced with an interesting strategy as encapsulated by the copyright industries, which involves two basic steps: "regulate the manufacturers so that the devices they make regulate users."⁷ This is clearly a way to intervene at a more workable point as

there are certainly fewer manufacturers than the abundant number of users and the former have deeper pockets as well as public profiles which can be exploited (Gillespie, 2007). We may thus end up with what Gillespie has called a 'regime of alignment', that is "the alignment of distribution systems through material and legal constraints, the alignment of allied institutions through technologically enforced licenses and ideological linkages, and the alignment of access, use, and consumption through a network of restrictions and facilitations."⁸

Towards A More Progressive Role Of The State In The Digital Economy

Just as the regime of alignment has begun to encircle access to digital content, we are also witnessing the proliferation of social networks over the internet, which is dramatically changing the nature of how culture is produced and distributed. Blogs, wikis, podcasts, photo sharing, tagging and their likes have transformed individuals from being passive consumers to being active producers. How does one regulate the production of content by individuals and organizations? This issue is particularly complex in the case of peer to peer production, and thus needs to be carefully understood.

Unlike traditional intellectual property, peer to peer production is governed by a different set of economics. Traditional economic principles are based on the underlying assumption that all human motivations are due to wants and a universal medium of exchange or money is a motivator. The participants in a peer to peer production process are not paid but are providing voluntary work which strikes at the very basis of traditional economics (Benkler, 2006). In other words if they are not getting paid, why are they working, contributing and creating?

In a digital economy where there is a rise in social (or peer to peer) production, it is imperative for the state to take these authors in mind before embarking on a policy decision making. The popularity of Napster (an online free music sharing store) and Linux (free, open source operating system) show that peer to peer production needs to be looked at as a model of production like traditional manufacturing albeit requiring a different kind of intellectual property protection. Various alternatives towards the traditional copyright are emerging in the form of Creative Commons and Public Libraries which provide more benefit to the common user. In this context, the state can play a progressive role in policy development by evaluating the benefits of social networks and peer to peer production. This will result in the public domain expanding, thereby paving the path for further innovation.

Benkler in his path breaking work has suggested that the networked information environment offers us the world a more attractive cultural production system in two distinct ways: (1) it makes cultural production and distribution more transparent, and (2) it also makes culture more supple and malleable. Perhaps, he goes on to suggest, "we are seeing the emergence of a new folk culture—a practice that has been largely suppressed in the industrial era of cultural production—where many more of us participate actively in making cultural moves and finding meaning in the world around

us". These transparent cultural practices will make its "practitioners better 'readers' of their own culture and perhaps more self-reflective and critical of the culture they occupy, thereby enabling them to become more self reflective participants in conversations within that culture."⁹

Conclusion

It is beyond doubt that the emergence of a digital economy has altered the manner in which many industries operate, more specifically the music and entertainment industry. These large content industries are singularly exercised by the threat of losing revenue from piracy. Regulations, technologically enabled surveillance, taxes on knowledge and privatization of the public domain will however make it difficult for each subsequent generation to stand on the shoulder of the previous generations intellectual and cultural giants (Boyle, 2004).

Restrictive policies, lobbied into existence by the rich and developed states, have resulted in the increased importance of bodies like the WIPO, transforming it into a copyright protection body rather than a broader developmental agency. In a similar manner, there is a growing concern about various issues like privacy and fair use which stem from laws allowing greater importance for Digital Rights Management. In the rush for expanding property rights, states have not taken cognizance of global development and public interest as compared to the support it has provided to organizations who are proponents of the property regime. This has resulted in two divides amongst the citizens of a digital economy, where restricted few have a monopoly on production and distribution while the other is slowly creating its own domain using social production. This is not to say that intellectual property rights by itself is to be abolished. To promote creativity and encourage authors and inventors, one must make use of a balanced intellectual property regime, but one must not go overboard like RIAA. Restrictive practices like DMCA and DRM create a distinct divide between those states who have enjoyed the benefits of the earlier development and those whose industries are emerging.

It is here that the state can play a critical role, namely that of an impartial referee which strives to bring a policy that looks after the interests of both firms as well as the public at large. It would benefit global development if a balance between the two can be achieved and that can happen only through agreement, consensus and a genuine regard for global development rather than a narrow vision of a profitable industry. Achieving this balance would be the key challenge for states in the digital economy.

References:

1. Adams, A., (2006), Introduction: Valid Protection or Abusive Control?, *International Review of Law, Computers and Technology*, Vol. 20, No. 3, pp. 233-237.
2. Benkler, Y., (2006), "The Wealth of Networks: How Social Production Transforms Markets and Freedom", *Yale University Press*.
3. Bettig, Ronald, (1996), *Copyrighting Culture: The Political Economy of Intellectual Property*, Westview Publishers.
4. Boyle, J., (1996), "Copyright and the invention of authorship", *Shamans, Software and Spleens: Law and Construction of the Information Society*, Harvard University Press.
5. Boyle, James, (2004), "A Manifesto on WIPO and the Future of Intellectual Property", *Duke Law and Technology Review*, No 9.
6. Das, D.K., and Narayanan K., (2005), "Information and Communication Technology (ICT) and India's Development: Achievements and Challenges Ahead", *Journal of Services Research Special Issue*, December 2005, pp 93-108.
7. Electronic Frontier Foundation Briefing Paper on Technological Protection Measures prepared for WIPO, (2005) available on http://www.eff.org/files/filenode/dev_agenda/EFF_WIPO_briefing_041205.pdf, Retrieved January 10, 2008.
8. Gillen, M. and Sutter, G., (2006), "DRMS and Anti-Circumvention: Tipping the Scales of the Copyright Bargain", *International Review of Law, Computers and Technology*, Vol. 20, No.3, pp 287-299.
9. Gillespie, Tarleton, (2007) "Wired Shut: copyright and the shape of digital culture", MIT Press.
10. IP Watch, "Industry concerned about Development Agenda at WIPO", interview with Eric Smith, President, International IP Alliance, available on <http://www.ip-watch.org/weblog/index.php?p=125>, Retrieved on January 10, 2008.
11. Lessig, L., (2001) "The internet under siege", *Foreign Policy*, Nov-Dec.
12. Lieberman, D., 2008, "Sony BMG deal gives Amazon an advantage", *USA Today*, available on http://news.yahoo.com/s/usatoday/20080111/tc_usatoday/sonybmgdealgivesamazonanadvantage, Retrieved on January 12, 2008.
13. May, C., (2000), *A Global Political Economy of Intellectual Property Rights: The New Enclosures?* Routledge Press.
14. May, C., (2007), "The World Intellectual Property Organization and the Development Agenda", *Global Governance*, Vol. 13, pp 161-170.
15. Samuelson, P., (1999), "Intellectual property and the digital economy: why the anti-circumvention regulations need to be revised", *Berkeley Technology Law Journal Online*, see www.law.berkeley.edu/journals/btlj/articles/vol14/Samuelson/html/reader.html - Retrieved July 10, 2004
16. Santoro, M. S., (1995) "Pfizer: Global protection of Intellectual property", *Harvard Business School*, Case No. 9-392-073.
17. Smith, K., (2000) "What is the 'knowledge economy'? Knowledge-intensive industries and distributed knowledge bases", www.druid.dk/summer2000/Gallery/smith.pdf - Retrieved March 09, 2004.
18. Valenti, J., (2002) "A clear present and future danger," *Open Democracy*, www.opendemocracy.net/debates/issue-8-40.jsp - Retrieved March 09, 2004.
19. Valenti, J., (2004) "International Intellectual Property Piracy: Stealing America's Secrets," *U.S. Senate Committee on Foreign Relations*, June 9.

20. Weber, Steven and Bussell, J., (2005), "Will Information Technology Reshape the North-South Asymmetry of Power in the Global Political Economy?" *Studies in Comparative International Development*, Vol. 40, No.2, pp 62-84.
21. Weber, Steven, (2000), "The Political Economy of Open Source Software", *BRIE Working Paper*, 140, June.
22. World Intellectual Property Organization – An Overview, 2007 available on http://www.wipo.int/freepublications/en/general/1007/wipo_pub_1007.pdf, Retrieved January 10, 2008.
23. World Intellectual Property Organization proposal submitted by Argentina and Brazil, 2004, prepared by the Secretariat WIPO, available on http://www.wipo.int/documents/en/document/govbody/wo_gb_ga/pdf/wo_ga_31_11.pdf, Retrieved January 10, 2008.
24. Provisional Committee on Proposals Related to a WIPO Development Agenda (PCDA), 2007, available on http://www.wipo.int/ip-development/en/agenda/pcda07_session4.html#annex, retrieved on January 10, 2008.

Endnotes:

¹ The US Congress is definitely more alert and receptive when claims such as the following are made by copyright industry representatives: "the copyright industries are responsible for some 5% of the GDP of the United States", and that "they gather in more international revenues than automobiles and auto parts, more than aircraft, more than agriculture" (Valenti, 2002 & 2004). It is further stressed that copyright industries are creating new jobs at three times the rate of the rest of the economy and that the "[US] movie industry alone has a surplus balance of trade with every single country in the world" (Valenti, 2002 & 2004).

² p. 10, Gillespie, "Wired Shut".

³ "The Advantages Of Adherence To The WIPO Copyright Treaty (WCT)" See http://www.wipo.int/copyright/en/activities/wct_wppt/pdf/advantages_wct_wppt.pdf, retrieved on January 15, 2008

⁴ The Electronic Frontier Foundation, a donor funded non profit foundation founded in 1990 in the US, is a non-government observer participating in the WIPO talks and meetings. It has prepared a briefing paper available on http://www.eff.org/files/filenode/dev_agenda/EFF_WIPO_briefing_041205.pdf.

⁵ The issue of file-sharing and copyright violation on US campuses is described in the works of the Electronic Frontier Foundation (EFF). It works to confront contemporary issues defending free speech, innovation and consumer rights. See <http://www.eff.org/issues/file-sharing>.

⁶ p. 36, Benkler, "Wealth of Networks".

⁷ p. 102, Gillespie, "Wired Shut".

⁸ p. 102, Gillespie, "Wired Shut".

⁹ p. 27, Benkler, "Wealth of Networks".