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Intellectual Property, Information Policy and The Devolutionary Power of Internet Protocol

Annenberg Research Network on International Communication

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Abstract

Traditional notions of U.S. dominance of knowledge-based industries have rested on the assumption that the existing rules for intellectual property enforced in the U.S. will survive in an era of Information Globalization. This paper argues that there is a beginning of a global pushback towards U.S. intellectual property regimes and that there is no a priori reason that China or other new players in the knowledge industries will adopt the U.S. formulated rules. Furthermore, the paper argues that the growth of Internet Protocol based broadband networks may bring forth a new era of on-demand media that could radically change the face of the current broadcast-centric media system, leading to a new set of rules for information policy.

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Over the past twenty years the American economy has made it's final transition from the industrial age to the information age. To look at the export sector, the dominance of the Knowledge Economy is even more striking. Large Media, Software and Pharmaceutical firms dominate the American export economy[1]. In each of these sectors, recent political efforts towards deregulation have led to increased merger activity and the consolidation of distribution power has come to resemble classic oligopolies. Looking at Big Media, Big Software and Big Pharma, it is clear that five firms or fewer dominate each sector[2]. The conventional wisdom assumes that the economies of scale that benefit classic manufacturers will also enhance the competitive position of firms that deal in the more intangible outputs of ideas, creativity and soft power. However, there are several countervailing forces that might slow the dominance of American firms in the world knowledge economy. The first is the potential cultural backlash from American "Knowledge Colonialism". The second relates to the disruptive effect of digital technology on traditional advertising-supported media business models. And finally the devolutionary force of Internet Protocol technologies must be accounted for. To the extent that they slow the one area of American export success, at a time of great global economic imbalances and increasing U.S. internal and external deficits, these countervailing factors must be a source of great concern to policy makers.

From the Wall Street point of view the increasing consolidation of firms in the knowledge sector has been viewed as a positive factor. Valuations for companies that hold patents and copyrights as major assets tend to be higher than those of "plain vanilla" manufacturers. Pfizer has a P/E ratio of 27, while General Motors has a P/E ratio of 7.

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[1] U.S. International Trade Administration (2004) www.ita.doc.gov
[2] McChesney,Robert, "The Problem of The Media" (New York,Monthly Review Press,2004)pp.141-142

Most of the firms in the knowledge sector are able to use monopoly-pricing power to increase prices at far above the rate of inflation. (See Figure 1 Cable prices vs. rate of Inflation) From the cost of cable TV service to prescription drugs or database software, the ordinary businessman's concerns about lack of pricing power are not evident in this sector. However, as the firms have gotten larger, there is considerable anecdotal evidence that they have begun to lose some of the creativity that was the fount of their original success. There is considerable evidence that the lack of new drug molecules from the large Pharma R&D efforts has had to be supplanted by their acquisition of smaller more creative firms[3]. Similarly, many large entertainment companies rely on small independent producers to develop and produce the bulk of their hit product.

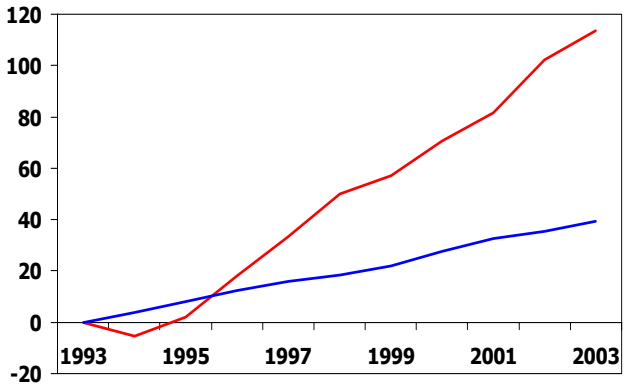

Figure 1-Cable Prices vs. Rate of Inflation Source-U.S. Bureau of Labor Statistics (2003)

In the absence of internally generated creativity, these oligopolies have morphed into giant distribution pipelines that need a continual flow of product to keep their large sales forces busy. Pfizer has almost 123,000 employees and almost 40,000 are dedicated to sales[4]. Disney has 112,000 employees with over 11,000 in the sales or marketing field. The S, G & A expense associated with such scale requires not only a continued stream of new products, but also has created a dependency on the "Hit Product". Whether it is Viagra or *The Matrix*, all of these firms run on the 80-20 rule. This notion is that 20% of the output will gain 80% of the gross revenue. The firms expect to write off many failed films, drugs that never got approved or software applications that crashed. The notion

[3] Weber, Steven, " The Success Of Open Source" (Cambridge, MA, Harvard University Press, 2004), pp. 270
[4] Pfizer.com (2004)

that one hit will make up for four failures is grounded in the ecology of the knowledge sector. In the drug sector, the number of prescriptions written for the top 50 most heavily direct-to-consumer advertised drugs increased at six times the rate of all other drugs.[5] Consumer prescription drug advertising went from less than $1 million in 1994 to over $4 billion in 2004. Whether the American consumer economy can continue to expand in the face of rapidly expanding household debt is perhaps the most important question. Today average household debt equals 105% of disposable personal income, up from 65% in 1980[6]. So for firms in the knowledge sector, who have recently leaned on consumer advertising to raise revenues (no one ever thought to advertise drugs or software in the 80's), one must question whether the growth picture can continue indefinitely. The question of whether drugs like Viagra or home video purchases come under the heading of "Consumer Discretionary" spending is not at issue here. While the conventional wisdom held that both entertainment and drug purchases were resistant to recessionary pressures, the new world of consumer advertising driven products in the sector would lead one to believe this may not be true in the next downturn.

Perhaps more important than the internal tensions of scale and innovation, are the external pressures from abroad as cultures around the world react to the pressures of globalization. In the 1990's the acceleration of globalization was driven by the reduction in transaction costs. Although the consolidation of U.S. Knowledge firms has helped reduce coordination costs, the digital revolution that has driven much of the productivity in the knowledge sector is deeply indebted to the reduction in transaction costs. Through the 90's the technological and economic factors of globalization were in the driver's seat, while the political and cultural forces were in a catch up mode. The rising influence of these cultural forces post millennium may mean that the next phase of globalization is less about further reductions in transaction costs and more about the other foundational element of market exchange—property rights. It can be said that while reductions in transaction costs change economic activity at the margins; changes in property rights create the possibility of revolutionary change. The basic problem before us is that American export competitiveness is heavily dependant on US intellectual property

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[5] National Institute of Health Care Management, **Prescription Drugs and Mass Media Advertising, 2000**, NIHCM Foundation, November 21, 2001

[6] Federal Reserve Board (2004)

regimes, which have a unilateral tinge when viewed from much of the rest of the world. This is potentially leading us into a phase of what Steven Weber calls "Knowledge Colonialism". Like earlier 19th century colonial eras, this new one might find the following cohorts:

- Pirates abound in less developed regions.
- Decolonization movements (i.e. open source) may go militant, particularly within pirate havens (which need not be geographically bound).
- Late starters in the race for 'colonies' face a different landscape than do early starters. There is no a priori reason to believe that China will adopt a U.S. Style IP system

This is not just speculative. Already we are seeing resistance to American intellectual property policy. In India, local pharmaceutical companies have reverse-engineered U.S. AIDS drug molecules and sold them for 20% of the U.S. price on the Indian and South African market. China has officially embraced Linux as the "correct" software platform to build large applications on. This has led Microsoft, for the first time in its history, to open its source code to the Chinese government in order to compete there. In the media business we have seen a continued rise in the incidence of piracy of U.S. entertainment product combined with reluctance on the part of the media conglomerates to adjust prices in local markets to combat piracy. To make matters worse for American media giants, the low cost of digital production tools is allowing foreign TV producers to make huge inroads in their local TV schedules. While U.S. special effects driven motion pictures still perform well around the world, American TV series are increasingly scarce on foreign networks[7]

It must be said that these political and cultural factors are creating inhibitions to the American knowledge sector within the boundaries of the U.S. as well. The rise of religious fundamentalism in the political sphere has led to several troubling outcomes. Major lines of stem cell research are moving outside of the U.S. to places like London and Shanghai. Now that "Intelligent Design" (creationism) is an officially sanctioned alternative to evolution in the school systems of nine states, one has to wonder whether

[7] Vogel, Harold, "Entertainment Industry Economics" (Cambridge, UK, Cambridge University Press,2001) pp.454

the biologists of the future will be found in Sydney and Bangalore, rather than San Francisco and Boston. More troubling is that the refusal of the U.S. Homeland Security Department to grant timely visas to foreign scholars, has led several major corporations to set up research labs in China and Europe to ensure continued productivity. Visa delays alone have cost U.S. exporters $30.7 billion in lost contracts and delayed shipments.[8] The continued inability of the "best and brightest" to travel easily to U.S. Universities can only be a disturbing warning sign to policy makers.

These cultural threats to continued American dominance in the knowledge industries are only one challenge to our "soft power". In our home market we must also address the possibility that the existing media system is in a period of radical transformation with the outlines of the future only barely understood. The notion of the "500 Channel Universe" sold so brilliantly to Wall Street by cable barons like John Malone has been with us now for a few years and quite frankly "the dogs aren't eating the dog food". Of the over 400 channels available on digital cable and satellite systems, the average viewer watches 8 channels and yet it is impossible to order a service with less than 50 channels. In the cable network business the top 20 shows account for almost ¾ of all cable network viewing. The laws of supply and demand are about to come down hard on the digital network business. When Discovery Networks went from one channel to 14 channels, they added 1400% the available advertising inventory for Discovery type programming. But the total audience for Discovery Networks only increased by about 10%. By cannibalizing their own advertising business they are acting "like gerbils in a cage, running faster and faster to stay in place" according to Tom Wolzien of Sanford Bernstein & Co. If you add onto this picture the widespread introduction of Digital Video Recorders like Tivo that allow users to skip commercials entirely, and you can see that the future of ad-supported television is cloudy. Although Tivo only has 2.5 million users, many cable companies are introducing DVR technology as part of their standard set top box. If DVR penetration reaches 40% of the higher income demographic, we estimate the effect on advertising revenue for the niche cable networks would be devastating. As Steven Heyer, former President of Coca-Cola stated, "If a new model for TV advertising

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[8] National Foreign Trade Council (June 2004)
http://www.nftc.org/newsflash/newsflash.asp?Mode=View&articleid=1686&Category=All

isn't developed soon, the old one will simply collapse."[9] Of course the reaction of the big TV networks to all of this disruption has been telling. In early 2004 Nielsen (the nation's sole TV rating service) announced it was going to replace its paper diaries with an electronic "people meter" that would a far more accurate view on audience behavior. Almost immediately Fox Broadcasting sued Nielsen to stop the automated system. This "shoot the messenger" stance is telling. Both Networks and advertisers are in a state of denial about the effectiveness of the medium and they like it that way. The question of whether these potential disruptive trends in the U.S. Media scene will spill over into the media export sector is probably a foregone conclusion. It is clear that the notion advanced by Cowhey and Aronson that "The EU Commission Information Society DG envisions a convergence of all IP networks…over diversified access platforms in a seamless manner"[10] probably applies to the Asian market as well. The fact is that both Asia and Europe have advanced 3G networks capable of this convergence, while the U.S. still lags in this respect.

If these disruptive factors impinge upon the cable network business, in the next five years we could see a marked shrinking in the number of cable networks. For the Cable Multiple System Operator (MSO), this would mean a radical reordering of the business. The most likely alternative to the current model would be a reallocation of cable spectrum to take advantage of the Internet Protocol revolution. Less channel space would be allocated to one-way cable networks and far more would be allocated to the Broadband IP platform. The fastest growing part of the current cable business is already the cable modem business. The convergence of more efficient video and audio codecs with these larger broadband pipes leads to the ability to deliver video and audio on demand at TV quality standards. The ability to move this IP video and audio to the television will be enhanced by the arrival this year of the IP set top box being rolled out by Motorola, Scientific Atlanta and Pace. In addition, Microsoft and Intel are rolling out the Media Center platform, which combines the functions of Tivo, a computer and a media server in one always on box. The Media center allows downloaded or streamed media files to be distributed to any TV or audio appliance in the house on a wireless

[9] Keynote Speech, Advertising Age Conference (New York, February 2004)
[10] Cowhey, Peter and Aronson, Jonathan "Wireless Standards and Applications"-Annenberg Research Network for International Communication (October, 2004)

network. The obvious notion that all niche programming should belong on a server rather than occupying a 24/7 broadcast network is beginning to dawn on the cable operator. Furthermore, the emergence of successful music download services like I-Tunes and Rhapsody are proving that consumers will pay for quality content. This might lead to a revaluation of the various assets of large Media firms. While the value of their distribution platforms might decline, there is no doubt that the ongoing worth of their film, music and game libraries might be enhanced by such ubiquitous on demand distribution platforms.

This realization is leading some in the entertainment business to realize that the tyranny of the 80-20 rule could be broken. Chris Anderson of Wired Magazine has described a new selling model called "The Long Tail", in which on-line retailers are finding that even the most obscure content sells at an acceptable level on line. I will try to summarize Anderson's long piece in Wired. Although the average large record store might have a total of 40,000 individual songs in it's racks, the digital music service Rhapsody currently has over 500,000 (Figure 2) and song number 499,999 sells well enough to pay for itself.

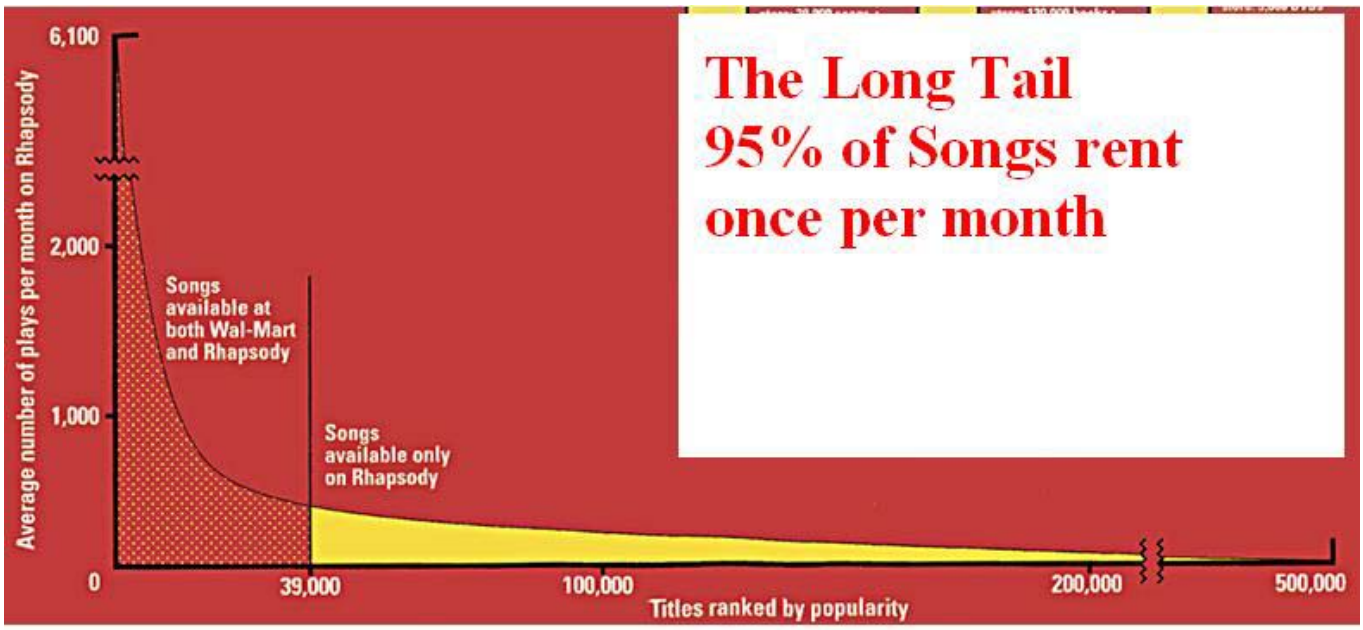

Figure 2- Source-Wired Magazine

Even in the hybrid model of Amazon (with physical goods shipped) the gross revenue from books that are not sold in the biggest Barnes and Noble bookstore is 57% of Amazon's total sales.[11] Obviously backlist books are never discounted and Amazon's 2 million-book inventory dwarfs the 130,000 books in a large bookstore (Figure 3), but these figures bode well for the notion that nothing should be considered "out of print".

Figure 3-Source-Wired Magazine

For artists like makers of documentaries the news is even better. Amazon now stocks over 18,000 documentary titles. For a business in which distribution was almost impossible, this is good news and allows the expansion of a new kind of filmmaking, not dependant on the hit mentality of the major studios in Hollywood. Certainly a world of ubiquitous Broadband both wired and wireless tends to push power down to the level of the artist in a Google driven online world. Large media companies know that the "Brand" is Tom Cruise or U2, not Warner Bros. Finally, for those worried about American

[11] Anderson, Chris "The Long Tail" ,Wired Magazine (Oct.2004)

cultural imperialism there is a new market for foreign films and TV in the U.S. Take the example of the Indian film industry. There are 1.8 million Indian immigrants in the U.S. Bollywood produces over 800 films a year and yet the most successful Indian film last year only got into three theaters. This is obviously an underserved audience as anyone who has observed the small rack of Indian movie videos available for rent in many Indian food shops in America. The online distribution business is such a natural way to serve cultural Diasporas, without the large sunk costs to put up a TV network.

This radical change in the media landscape will not arrive without some serious turf battles between owners of content and owners of "pipe". Cable and Telephone companies will naturally migrate towards a "walled garden" approach to Broadband, hoping to preserve their "gatekeeper" status between content owners and their customers. Already the cable companies have gotten the FCC to reclassify broadband to an Information service from its previous classification as a Telecommunications service. This is not a trivial difference. Telecommunications services have a "common carrier" component, preventing the owner of the network from discriminating in any way. As the Center for Digital Democracy states, "The principle of nondiscriminatory communication has long governed our telephone system and the Internet itself, allowing any party to transmit any message to any other party without interference by the network operator. This principle of free expression should be maintained for broadband as well. High-speed Internet users should be allowed unimpeded communications with any network device, use of any lawful service, and transmission of any data."[12]

In conclusion, it is obvious that the next decade will be one of radical transformation in the knowledge sector of the world's business. The questions revolving around Intellectual Property, Information Policy and Internet Protocol will play themselves out in an arena where large corporate entities will not always have the final say on policy. It could be argued that the Broadband Internet is a devolutionary force that cannot be stopped. Whether power flows from large conglomerates back to smaller entrepreneurial "inventors and artists" in the knowledge sector is but one of the questions that the next ten years will answer. Knowledge firms large and small must be open to the

[12] Center for Digital Democracy (2004), http://www.democraticmedia.org/issues/decDigitalDemocracy.html

challenges from both political and cultural pushback on the international intellectual property market; adaptation to the inevitable movement of all networks towards an Internet Protocol platform and flexibility in the implementation of information policy.