

# **Cultural Industries, Digital Divide and Rural Development: The case of digital piracy in Oaxaca, Mexico**

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In rural Oaxaca the commerce of pirate cultural goods (e.g. music, cinema, books, software) is an entrepreneurial activity. Off-line piracy is very often the only media for accessing goods from cultural industries. Applying the Institutional Analysis and Development Framework we analyse copyright piracy in rural settings as an action arena. We used a war of attrition game theory model to explain why intellectual property rights are not enforced in rural communities, analyzing different levels of interaction and rules in use from the global to the very local. We propose new institutional arrangements to legalize the copy and transmission of cultural goods for education and rural development. Some interesting insights arrived regarding the cost of the "last mile" in the diffusion of cultural goods and ICT's infrastructure.

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Keywords: common-pool resources, cultural industries, digital divide, information commons, intellectual property, war of attrition.

## 1. INTRODUCTION

Digital technology has caused important disruptions in cultural and information industries. In music production and distribution, development of the MP3 file format dramatically changed business forever. MP3, created by engineers at the German company Fraunhofer Gesellschaft, is short-hand for Motion Picture Experts Group-Layer 3. An audio compression format that generates near compact disk quality sound at approximately 1/10 to 1/20 the size. Borrowing Peter Alexander (2002) example: Elvis Presley's "Hound Dog" on compact disk requires 24 megabytes of hard disk space, but when converted to MP3 the storage requirement falls to 2 megabytes. On a 28.8 kilobit per second Internet connection, the compact disk version of "Hound Dog" would take at least one and one-half hours to download from another computer. On the other hand, if the file were first converted to MP3, it would take approximately eight and one-half minutes.

Since 2000 when Metallica filed a lawsuit against Napster, the industry has responded to large-scale organized digital file sharing by taking legal action against the most prominent and sizable digital file distributors. For instance, MP3.com was found liable in U.S. District Court for infringing the copyrights of the Recording Industry Association of America (RIAA). Moreover, a federal judge rejected Napster's contention that it is protected by the digital copyright law and issued a preliminary injunction requiring Napster.com to stop distributing copyrighted materials. (Alexander 2002)

Seemingly, in May 2009 the U.S. Senate held a hearing on the future of newspapers. The Majority Statement signed by John D. Rockefeller, IV says:

“. . . During roughly the last six months, daily newspaper circulation has declined 7 percent. During roughly the past year, media companies have cut a heartbreaking 41,000 jobs. The inevitable result is less reporting, less news, and less coverage of our communities and interests at home and abroad.

From these facts we can infer that the newsgathering model that served us so well in the past is now in trouble. The future of journalism is digital. We are fast migrating from a world where news

is cranked out daily over a regional printing press to one where news is distributed digitally over the infinite networks of the Internet. There is much to celebrate and explore in this change—access to an endless array of ideas and opinion and minute-by-minute updates on newsworthy events—but there is also is cause for concern.

(. . .)

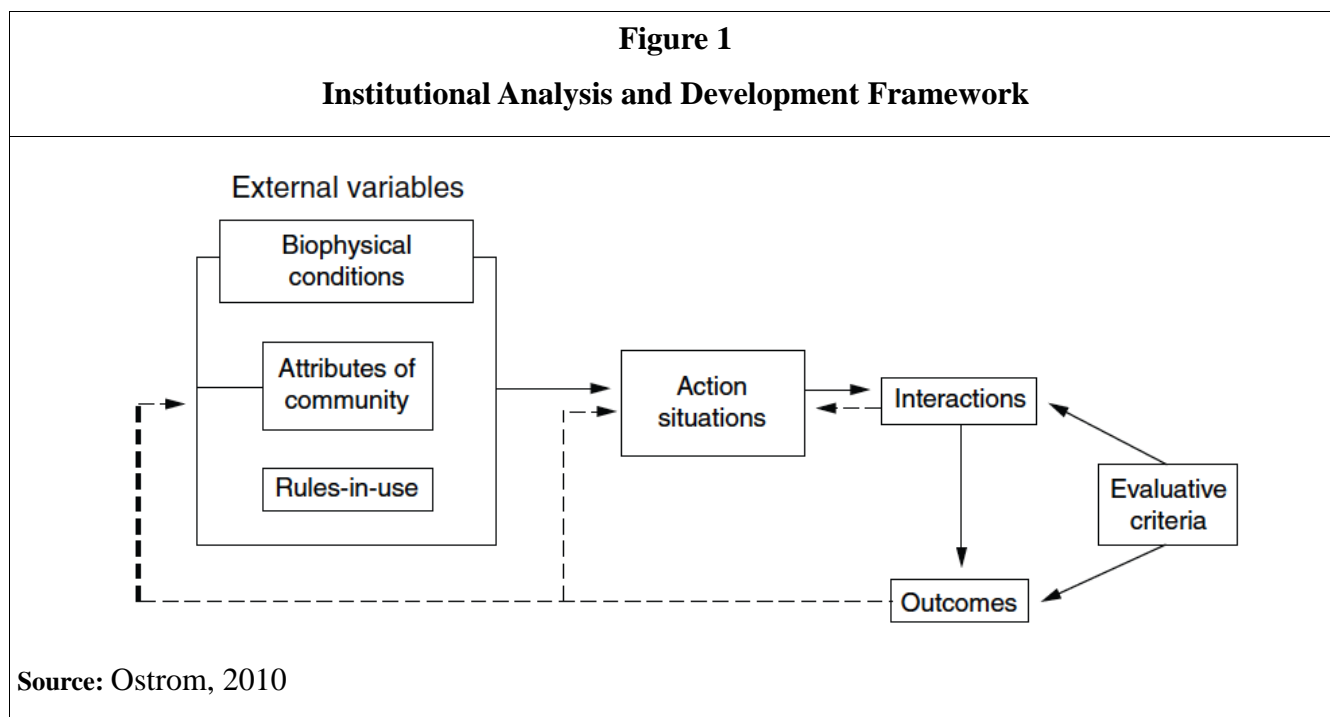
Uneven access in to the Internet in some communities is a trouble that needs to be addressed. And then there are the unquantifiable losses. The daily promise of unfolding a newspaper, rustling its pages, and letting your eye dance across the page and survey its offerings is a pleasure, I fear, our next generation will not know.”

In May 2012, the New Orlean's newspaper The Times-Picayune announced that it would drop back from daily publication to just three days a week. The same day the creation of NOLA Media Group was announced merging the paper edition of The Times-Picayune and its affiliated web site NOLA.com. The change left New Orleans as the largest city in the U.S. without a daily newspaper. A week later, readers rally and protested to “save the paper”.

Yochai Benkler (2006) proposed the idea of three different layers embedded in communication systems that together make communication possible: (1) the physical devices and network channels necessary to communicate; (2) the existing information and cultural resources out of which new statements must be made; and (3) the logical resources the software and standards necessary to translate what human beings want to say to each other into signals that machines can process and transmit. Benkler also made the question whether there will, or will not, be a core common infrastructure that is governed as a commons and therefore available to anyone who wishes to participate in the networked information environment outside of the market-based, proprietary framework.

This paper is about the commerce and exchange of goods from the second layer, and how conditions on the first and third layers affects commerce and exchange of information and cultural resources. We use the Institutional Analysis and Development (IAD) framework. In the IAD the focal units of analysis are “action arenas”, that exist in the household; neighborhood or community; local, regional, national, and

international councils; in firms and markets; and in the interaction among all of these arenas with others. In the simplest and most aggregated way to representing any of these arenas when they are the focal level of analysis exogenous variables affect the structure of an action arena, generating interactions that produce outcomes. Evaluative criteria are used to judge the performance of the system by examining the patterns of interactions and outcomes. Outcomes feedback onto the participants and the situation and may transform both over time. The IAD framework provides a metat-heoretical language to enable scholars form different disciplines to discuss any particular theory or to compare theories. (Ostrom 2005, 2010) The action arena analyzed in this paper is intellectual property piracy.



## 2. MEDIA CONSUMPTION AND DIGITAL DIVIDE IN MEXICO.

Although digital technologies have global effects, its impacts are not evenly disruptive in different parts of the world. The degree of connectivity is an important feature in determining the degree of disruption for corporate and citizen strategies. The consumers habits related to the acquisition and distribution of cultural and information goods suffer fewer changes in places with low penetration of information and communication technologies. Using data from Mexico's 2009 National Survey on the Use of Time (ENUT), we estimate that while 60.7 percent of households own a mobile phone, making mobile technology the main driver in digital inclusion; 21.1 percent of households are still in a complete media

blackout or extreme digital poverty, without access to wired or mobile telephones, the Internet or cable TV (Table1).

<b>Table 1.</b>				
<b>Connectivity Diffusion per Households (%)</b>				
<b>Telephone</b>	<b>Mobile</b>	<b>Cable TV</b>	<b>Internet</b>	<b>Extreme Digital Poverty*</b>
40.3	60.7	27.7	18.1	21.1
Data: 2009 National Survey on the Use of Time (ENUT), INEGI				
* Any of the former connections are available in the household				

Although Mexico's digital poverty, 58.9 percent of hours devoted to leisure are spend on mass media provided activities like watching TV, surfing the Internet, reading magazines or books; 28.1 percent of hours devoted for leisure are spend on community and social gathering; 6.7 percent of hours are spend practicing some sport; 4.2 percent of hours are devoted to ludic activities, either playing and instrument or a video game; and only 2.1 percent of hours are devoted to cultural activities like visiting museums, concerts or exhibitions (Table 2).

<b>Table 2.</b>			
<b>Demand for Leisure</b>			
<b>Time Devoted to Different Activities (%)</b>	<b>Total Hours</b>	<b>Women</b>	<b>Men</b>
Community and social interaction (e.g. parties, church, civic events, phone calls, chat)	28.1	30.4	25.8
Culture (e.g. museums, parks, cinema, exhibitions, theater, concerts)	2.1	2	2.2
Playing non-sports (e.g. music instruments, dancing, painting, video games, board games)	4.2	3.2	5.1
Sports (e.g. soccer, basketball, swimming, boxing, karate, jogging, biking)	6.7	4.9	8.4
Mass media (e.g. books, magazines, newspapers, TV, radio, Internet)	58.9	59.5	58.5
Data: 2009 National Survey on the Use of Time (ENUT), INEGI			

Taking a closer look to mass media consumption, we estimate that 68.2 percent of hours are spend watching TV; 11.5 percent of hours are spend listening some kind of audio either listening the radio or music from a stream; 10.7 percent of hours are devoted to reading and only 9.6 percent of leisure time

is spend in the Internet. Mexico in this regards is neither a country of readers nor of cybernauts; it is a country of TV watchers. The low proportion of hour devoted to reading and surfing the web could be related to illiteracy and digital poverty. (Table 3).

<b>Table 3.</b>									
<b>Mass media demand per good</b>									
<b>Total of hour</b>		<b>Reading hours</b>		<b>TV hours</b>		<b>Audio hours</b>		<b>Internet hours</b>	
<b>Number</b>	<b>%</b>	<b>Number</b>	<b>%</b>	<b>Number</b>	<b>%</b>	<b>Number</b>	<b>%</b>	<b>Number</b>	<b>%</b>
483,800.3	100	51940.7	10.7	329802.6	68.2	56030.15	11.5	46026.8	9.6
Data: 2009 National Survey on the Use of Time (ENUT), INEGI									

Regarding TV consumption, while 68.2 percent of hours (Table 3) devoted to mass media are spend watching TV only 27.7 percent (Table 1) of consumers have a connection to cable TV. According to the 2010 Census (INEGI, 2011) on this year 94.7 of households owned a TV. This evidence allow to infer that a high proportion of TV consumers are only watching channels broadcasted through VHF and UHF frequencies. This frequencies although legally own by the government are given on concession to the private duopoly TELEVISIA-TVAZTECA. Both companies are famous for its soap opera productions, reality shows and reruns of old American TV series and cartoons. The biggest revenue for this networks come from advertising, including government and political marketing. Any major transnational company in Mexico selling consumer goods advertise through their channels. Recently the results of the 2012 presidential election were contested on tribunals arguing overspending, vote buying and TV network's bias. Social media movements like *#yosoy132* also blamed the duopoly for information bias during the presidential elections.

Using Mexico's 2010 National Survey of Income and Consumption (ENIGH) we estimated demand of products that are traditionally supplied by the publishing and recording industry by place of purchase. We found that paper support is still important and evidence of offline music piracy: 65.2 percent of books and 42.9 percent of magazines were bought on specialized stores (e.g. bookstores); while 64.9 of newspapers and 26.6 percent of magazines to street vendor (e.g. kiosks and *voceadores*). Regarding audio products, mainly music, 34.2 percent were bought to street vendors and 22.4 percent in street markets. Is very probable audio bought in the street were pirate music CDs. For video games, 38.6 percent were bought in specialized stores. Is very important to notice the low percentage of transactions done through the Internet: 0.8 percent for books; 0.3 percent for magazines; and less than 0.1 percent for newspaper and music (Table 4).

**Table 4.**  
**Demand for Publishing and Recording (%)**

Place of purchase	Goods				
	Books	Newspapers	Magazines	Audio	Video games
"Farmers" market	1.2	1.4	3.02	9.5	5.7
Street Market ( <i>tianguis</i> )	3.6	0.3	1.6	22.4	10.2
Street Vendor	8.8	64.9	26.6	34.2	7.9
Convenience store	0.2	7.8	6.7	0.5	0
Specialized Stores	65.2	19.2	42.9	19.1	38.6
Supermarkets	3.8	0.7	14.1	6.9	12.5
Department stores	6.9	>0.1	2.1	2.4	13.6
Bought outside the country	0.4	>0.1	0.2	0.2	3.4
Club stores	0.8	>0.1	0.2	0.5	5.7
Person	8.02	5.3	1.9	3.9	2.3
Internet	0.8	>0.1	0.3	>0.1	0

Data: 2010 National Survey of Income and Consumption (ENIGH), INEGI

### 3. WAR OF ATTRITION IN CULTURAL INDUSTRIES

Intuition about intellectual property markets can be gained from the war of attrition game. A simple static game, popular for study natural monopolies. The war of attrition was introduced in theoretical biology by Maynard Smith (1974), to explain animals fight for prey. For instance, imagine a whale's carcass in an arctic beach. This is more meat than a single family of polar bears can eat. Nevertheless, the bear family that first arrive to (or found) the carcass will have to fight other families of polar bears that arrived to (or found) the carcass after them. If they allow for other family to approach and feed, the incumbents risk to be vanish from the carcass. Each time a new family arrive, the incumbents will have to fight in order to preserve its right to feed from the whale, or will have to leave if their contestants are strong enough to become the new incumbents. How many bears families would feed from a single

whale carcass is hard to tell. *The survival of the fittest*, or as Smith (1982) puts it, *Darwinian fitness*, is the rule determining how many families of bears get the chance to feed from the carcass. In a simple fashion, Figure 2 exemplifies the game faced by both troops of bears.  $Q$  being the whale's carcass (could be put as pounds or calories in a whale carcass in order to have an unit), the dominant strategy for both troops is to fight as long as  $Q$  is positive. Both troops would get  $Q/2$ .

Figure 2 War of Attrition in the arctic beach			
		Troop1	
		Fight	Leave
Troop2	Fight	$Q/2, Q/2$	$Q, 0$
	Leave	$0, Q$	$0,0$
With any $Q > 0$ the dominant strategy is to compete			

### 3.1 War of attrition on cultural industries with blockade/deterrence costs.

Oligopolists are affected by many variables they cannot observe or estimate precisely: their own cost function, the cost function of their rivals, the state of demand or the potential of the market, and their rivals' strategic decisions. To the extent that some pieces of information are private we must envision market interaction as a game with asymmetric information. Riley (1980) and Kreps and Wilson (1982) introduced as asymmetric-information version to the realm of economics, focusing on predatory pricing behavior. In cultural industries, the war of attrition is taken through legal means, as well as through price wars.

In industrial organization is possible to distinguish three kinds of behavior by incumbents in the face of an entry threat (Tirole 1995):

- a) Blockade entry: The incumbents compete as if there were no threat of entry. Even so, the market is not attractive enough to entrants.
- b) Deterred entry: Entry cannot be blockade, but the incumbent modify their behavior to successfully thwart entry.
- c) Accommodate entry: The incumbent find it (individually) more profitable to let entrants enter than to erect costly barriers to entry.



Figure 3 shows this behavior in a simple way, where  $D_1$  and  $D_2$  are the blockade-deterrence cost for pirates and industry respectively. Dominant strategies would depend on the value of  $D_1$  and  $D_2$ . Under asymmetric information,  $D_1(D_2)$  and  $D_2(D_1)$  are the blockade-deterrence strategies for pirates and industry respectively. *Darwinian fitness* would be replaced by a combination of rationality and costs structure.

Figure 3			
War of Attrition in cultural industries			
		Industry	
		Blockade/Deterrence	Accommodate
Pirate	Blockade/Deterrence	$Q/2 - D_1, Q/2 - D_2$	$Q, 0$
	Accommodate	$0, Q$	$0, 0$
Dominant strategies depends on $D_1$ and $D_2$ .			

Now imagine an infinite population of individuals taking upon digital production (pirates and non-pirates) as an entrepreneurial activity. Let  $\pi$  be the profit for digital production:

$$(1) \pi_i = p[Q/n] - c - D_i ; \pi_m = pQ - c$$

where  $\pi_i$  are profits for each firm on competitive equilibria and  $\pi_m$  is monopoly profit;  $p$  is the price of the pirate product and  $Q$  the total demand for that product;  $c$  is the cost of production and  $n$  is the total number of producers in the industry. Figure 4 shows the normal form for two firms

Figure 4			
War of Attrition in cultural industries. Piracy as an entrepreneurial activity.			
		Industry	
		Blockade/Deterrence	Accommodate
Pirate	Blockade/Deterrence	$\pi_1, \pi_2$	$\pi_m, 0$
	Accommodate	$0, \pi_m$	$0, 0$
Dominant strategies depends on $D_1$ and $D_2$ .			

The total number  $n$  of producers (pirates and non-pirates) would be reached where  $\pi = 0$  :

$$(2) \quad n = pQ / D_i + c$$

The higher the cost of blockade/deterrence the lower the number of producers. The cost of production is not an important variable given that it has been decreasing since the invention of the magnetic tape in the 1950s. In fact, there is not doubt that the current shift in cultural industries and the mushrooming of piracy is due to the plummeting of production costs after the invention of MP3 file format. Independent record labels can also be benefiting from the change in costs structure, mainly by lower production and distribution costs.

Tirole (1995) mentions four elements of market structure that affect the ability of established firms to prevent supranormal profits (rents) from being eroded by entry. Taking the case of digital music, Table 5 shows the change of market structure pre-MP3 vs post-MP3:

<b>Table 5</b>		
<b>Market structure elements</b>		
	<b>Pre-MP3</b>	<b>Post-MP3</b>
<b>Economies of scale:</b> If the minimum efficient scale is a significant proportion of the industry demand, the market can sustain only a small number of firms that make supra-normal profits without inviting entry.	YES	NO
<b>Absolute cost advantage:</b> The established firms may own superior production techniques, learned through experience (learning by doing) or through research and development (patented or secret innovations). They may have accumulated capital that reduced their cost of production. They may also have foreclosed the entrants access to crucial inputs through contacts with suppliers.	YES	NO
<b>Product-differentiation advantages:</b> Incumbents may have patented product innovations or they may have cornered the right niches in the product space, or they may enjoy consumer loyalty.	YES	NO
<b>Capital requirements:</b> Entrant may have trouble finding financing for their investments because of the risk of creditors.	YES	NO

### 3.2 War of attrition in cultural industries with copyright

Now assume the existence of copyright in a dynamic game with infinite periods of time where the profit for the pirates in the black market is given by:

$$(3) \pi_P = \sum_0^T p [Q/n]$$

and for the industry is given by:

$$(4) \pi_I = \pi_c + \pi_m = \sum_0^T p [Q/n] + \sum_T^\infty pQ$$

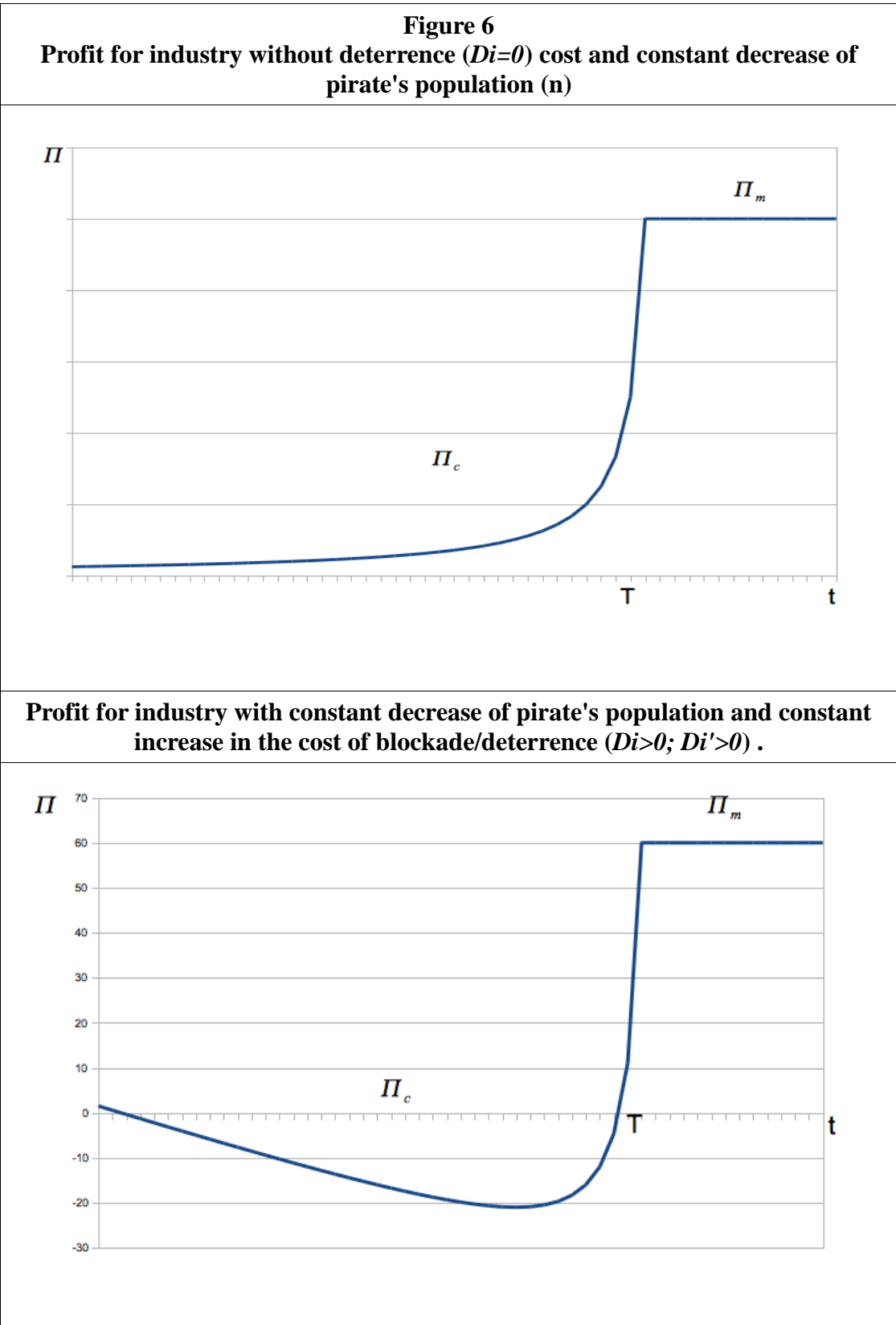
where  $\pi_c$  and  $\pi_m$  are profits on a competitive market and on a monopoly respectively; T is the period where competition leaves the market.

Figure 5 War of Attrition in cultural industries. Piracy as an entrepreneurial activity.			
		Industry	
		Blockade/Deterrence	Accommodate
Pirate	Blockade/Deterrence	$\pi_P - D_P, \pi_I - D_I$	$\pi_P, 0$
	Accommodate	$0, \pi_I$	$0, 0$

Clearly  $\pi_I > \pi_P$ . In this regards, how far is T does not matter as long as there are potential monopolistic gains ad infinitum after T. In the current state of affairs this potential monopolistic gains are given by copyright law. Once again only the costs  $D_P$  and  $D_I$  can change the dominant strategy for both (pirates and non-pirates) to enter the market.

Using equation 4 we performed a very simple lineal programming simulation. We assumed that  $n$  decreases constantly and that  $D_I$  increases also constantly. Our results (Figure 6) suggests that (at least under this assumptions), the industry would have to bear some economic loss before obtaining monopoly profits. This losses could be so deep that firms would prefer to accommodate before

obtaining monopolistic power.



## **4. DISCUSSION.**

### **4.1. Police vs. Pirates. A love story.**

In 2005, the OECD estimated that international trade in counterfeit/pirated products amounts to USD 200 billion, excluding digital products. The Anti-Counterfeiting Trade Agreement (ACTA) was signed on the 1<sup>st</sup> October 2011. ACTA is intended to combat Intellectual Property Rights (IPRs) infringements, namely counterfeiting and piracy, by enhancing international cooperation and enforcement. ACTA is intended to accelerate IPR enforcement, and make it more effective, so as to counter growth in counterfeiting and piracy. ACTA was negotiated between the EU and its Member States, the US, Australia, Canada, Japan, Mexico, Morocco, New Zealand, Singapore, South Korea and Switzerland. Once the agreement has entered in force, any member of the World Trade Organisation (WTO) may apply to join. The EU were joined on 26 January 2012 in Tokyo by representatives of 22 EU member states, however, the signatures need to be followed by ratification for ACTA to enter into force. (EU Parliament 2012)

The 4<sup>th</sup> of July 2012, 478 members of the European Parliament voted against the of Anti-Counterfeiting Trade Agreement (ACTA), 39 in favour, and 165 abstained, meaning the agreement will not enter into force in the European Union. ACTA aimed to more effectively enforce intellectual property rights on an international level. However, opponents were concerned that ACTA would have favoured large companies' interests at the expense of citizens' rights. The European Commission referred ACTA to the European Court of Justice in May for a ruling on the agreement and asked Parliament to wait for its conclusions. Simultaneously, Parliament decided to press ahead with its own scrutiny of the agreement. Five committees came out against the agreement while the petition committee received a petition against ACTA signed by nearly three million people. (EU Parliament 2012)

The 11<sup>th</sup> of July 2012, Mexico's ambassador to Japan signed on to ACTA. The reasons Mexico did not sign this agreement earlier, was that the legislature had also rejected ACTA, and the executive branch had to get the Mexican Senate to ratify the agreement. Since Mexico joined the World Trade Organization on January 1<sup>st</sup> 1995, government's executive branch has traditionally support international initiatives aimed to more effectively enforce intellectual property rights. Media companies from developed countries worried that their business suffer great damage due to counterfeiting and piracy,

have an important (although not always effective) ally in Mexico's law enforcement agencies. In support to intellectual property rights agreements Mexico's signed the Trade-Related Aspects of Intellectual Property Rights agreement (TRIPs) and Congress approved related legislation even before 1995.

The substantive legislation governing industrial property is contained in the Industrial Property Law (LPI), which has been in force since 1991. Its immediate precedent is the Law on the Promotion and Protection of Industrial Property, a body of law which was considered to be in accordance with the international standards of the time. The LPI regulates the legal concepts of patents, utility models and industrial designs, trade secrets, marks, advertising slogans and trade names, appellations of origin, and lay-out designs of integrated circuits. It also lays down the administrative procedures designed to protect and preserve industrial property rights and permitting the authorities to order the imposition of provisional measures aimed at the immediate suspension of allegedly violatory behaviour.

The area of copyright is currently governed by the Federal Law on Copyright, which came into force in 1996, abrogating the Federal Law on Copyright of 1956. This body of legislation contains provisions relating to copyright itself, to the moral and economic rights of authors, to the rules governing the transfer of such economic rights, to copyright protection, to neighbouring rights, and to limitations on copyright and neighbouring rights. It establishes guidelines with respect to copyright in national symbols and expressions of popular culture, registration of rights, reservation of rights of exclusive use, collective administration of rights, the National Copyright Institute, procedure before the judicial authorities, conciliation, arbitration, copyright infringement, trade-related infringement and administrative appeal.

On the 15<sup>th</sup> of June 2006 Mexico's General Prosecutors (PGR), together with other branches of the executive branch and private corporations including TELEVISA, Business Software Association (BSA), the Motion Picture Export Association of America, Inc (MPEAA), signed the National Agreement Against Piracy. In the intellectual property area, Mexican law defines conduct that is subject to criminal action and punishable by monetary fines and imprisonment. In order to fulfill WTO agreements, Mexico decided to reform its legislation to ensure that conduct subject to criminal action in the intellectual property area was considered to constitute a serious offense, not only increasing the penalties, but also eliminating the privilege of release on bail. (PGR 2006).

Action	Year				January-June		Change (%)
	2007	2008	2009	2010	2010	2011	
Raids	1,692	1,990	1,897	1,666	782	677	-13.4
Arrested	296	456	827	929	391	1,065	172.4
Pirate products confiscated	140,063,138	68,820,254	39,221,420	105,328,083	12,714,931	9,168,085	-27.9
Piracy labs dismantled	206	217	200	91	61	78	27.9

Source: *5to Informe de Labores Procuraduría General de la República* (2011 General Prosecutor Annual Report)

In a digital divide environment where most of the piracy is done through hard copies (e.g. DVDs, CDs or USB memory sticks) the actions taken by PGR are old fashion raids. Between 2007 and 2010 PGR performed 7,242 raids; arrested 2,508 persons; confiscated 353, 432, 865 million copies of pirate items; and dismantled 714 laboratories (Table 6). Although this apparently spectacular numbers, there is no way to make proper evaluation of the effectiveness and impact of this measures. Total numbers for piracy activities remain unknown. At the same time, given the low cost of digital copying technology, is very probable that as soon a pirate lab is dismantled another one mushroomed filling its place. High-tech measures like Digital Rights Management (DRM) seems highly improbable to be effective. Corporations loose content control once products are cracked and off-line trade and exchange of hard copies come into place to be played in devices without an Internet connection.

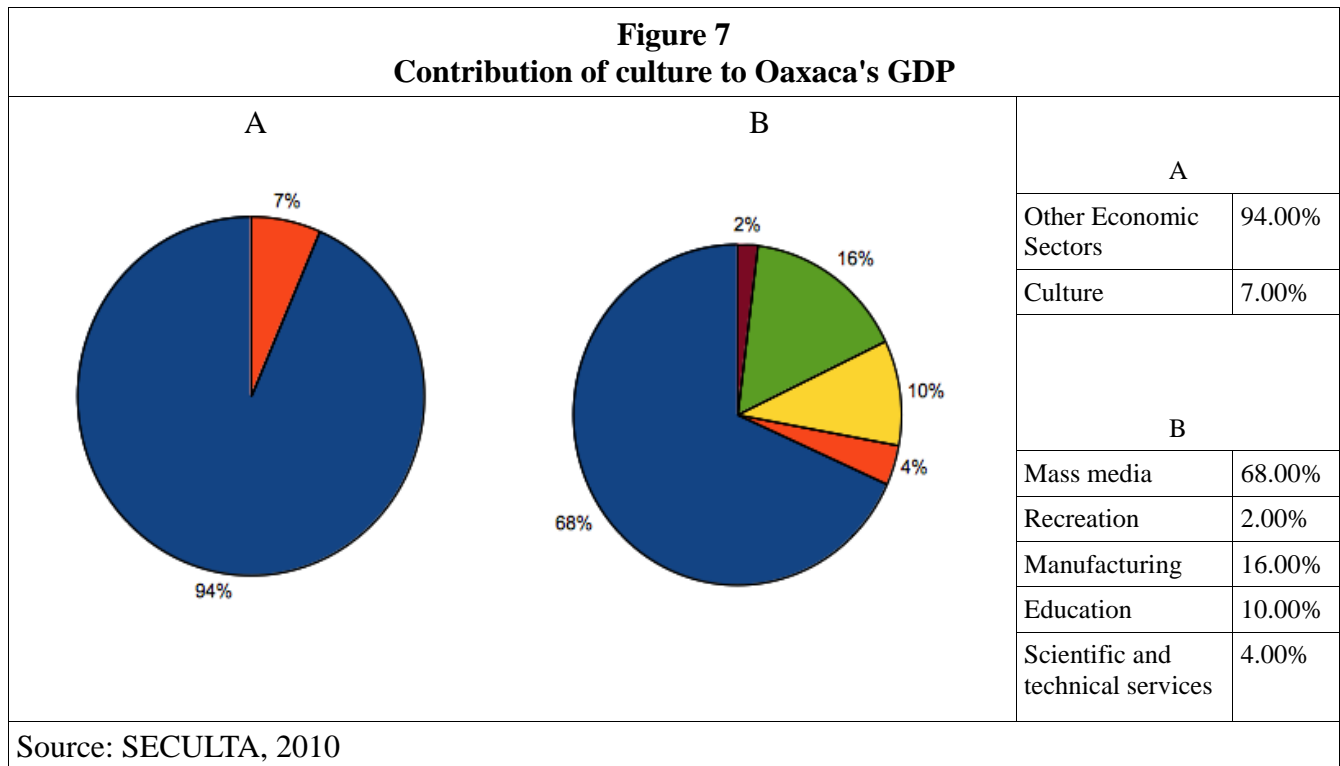
Item	2007		2008		2009		2010	
	Number	%	Number	%	Number	%	Number	%
<b>DVDs</b>	692,435	29.4	2,283,632	14.6	1,783,122	37.4	2,025,024	34.5
<b>Video games</b>	28,554	0.8	270,120	1.7	77,399	1.6	239,192	4.1
<b>CDs</b>	2,328,807	62.2	1,850,406	11.8	1,329,790	27.9	1,399,820	23.8
<b>Clothing</b>	115,946	3.2	143,281	0.9	1,328,135	27.8	1,433,271	24.4
<b>Shoes (pairs)</b>	48,519	1.4	6,941	0.04	236,536	4.9	737,080	12.6
<b>Medicines</b>	356,447	10.0	1,102,550	19.49	7,555	0.1	31,466	0.5
<b>TOTAL</b>	3,570,708	100.0	5,656,930	100	4,762,537	100	5,865,853	100

Source: *5to Informe de Labores Procuraduría General de la República* (2011 General Prosecutor Annual Report)

Notwithstanding the difficulty of doing a proper evaluation of traditional PGR's police activities, its raids allow to infer the proportion of copyright infringement. The higher proportion of pirate goods confiscated by item are hard copies of music and cinema, CDs, and DVDs, followed by medicines, clothing, shoes and video games on that order (Tale 7). The highest proportion of CDs and DVDs, as well as the lowest proportion of video games confiscated is consistent with our estimates of demand from Table 4.

#### 4.2. Oaxaca's Creative Economy.

Oaxaca is a Mexican state located in Southwestern Mexico. Is an important area for tourism, attracting people for its archeological sites, native culture and crafts. It has a significant coastline on the Pacific Ocean with important tourist area, which has the major resort of Huatulco. Oaxaca is also one of the most biologically diverse states in Mexico, ranking in the top three, along with Chiapas and Veracruz, for numbers of reptiles, amphibians, mammals and plants. Demographically, Oaxaca stands out due to the high percentage of indigenous peoples. It is estimated that at least a third are speakers of indigenous languages, accounting for 53% of Mexico's total indigenous language speaking population.





Since 2010, the State's Secretary for Culture and the Arts (SECULTA) embrace a paradigm of culture as an industry and tool for economic development. Following UNESCO's models the Secretary wrote a strategic plan based on trickle-down economics, or what could be terms a value chain of the cultural economy: monies collected by cultural enterprises, which produce and distribute culture, will make their way down to the cultural workforce, which originates cultural products.

Using statistics from Mexico's Central Bank the National Accounts System, SECULTA estimates that culture accounts for the 6.53 percent of State's GDP; 68.26 percent of this amount comes from mass media, mainly newspapers. SECULTA also makes the assumption that “manufacturing” in Oaxaca refers to art-crafts. Being a state without big industrial complexes, and having a tradition of pottery, wool weaving, wood craving, etc SECULTA estimates that 15.9 percent of culture's participation on GDP comes from art-crafts (Figure 7). Regarding employment, the Secretary estimates that 7.6 percent of employments comes from cultural activities. (SECULTA 2010).

According to SECULTA, cultural sector produce a total of 24,070 jobs. Table 8 shows that the higher number of jobs are for musicians 2,863; bamboo artisans 9,007; and textile workers (*deshiladores y bordadores*) 5,317. State's cultural policies do not account for informal (very often pirate) commerce of cultural goods. In terms of protection to intellectual property, Oaxaca's Secretary of Public Safety reports that the monthly income of pirates activities is around MX\$290,000 (an approximate of US\$21,500). Just in June 2012, the PGR performed raids in 7 (of 570) municipalities securing 8,200 pirate CDs and 26,228 pirate DVDs (SSPO 2011, 2012). In a qualitative research done in 1 of 570 municipalities of Oaxaca, we found there are approximately 25 cyber-coffees where illegal downloading takes place; and around 17 shops and 35 stands in the local *tianguis* (street market) selling pirate hard copies of music (CDs) and cinema (DVDs). Annex I shows photographs of music shops, street stands selling books, CDs and DVDs and a blanket at a political protest demanding a public library. Music shops are usually promotion agencies for local musicians and exchange centers of MP3 files. Local musicians usually give their MP3 recordings for free in exchange for promotion that lead to contracts for playing live (Chávez et.al. 2012).

**Table 8**  
**Employment in the cultural sector**

<b>Occupation</b>	<b>Number of jobs</b>
Directors of cinema and theatre	151
Museums managers	173
Cultural events coordinators	125
Cultural facilities coordinators	328
Archeologists and Historians	39
Researchers in the humanities	23
Librarians	149
Writers and literary critics	51
Painters	379
Illustrators	76
Sculptures	50
Scenographers	66
Musicians (composers)	16
Musicians (performers)	2,863
Singers	168
Dancers	120
Actors	6
Radio and TV anchors	316
Clown and circus	122
Audio and sound technicians	307
Bamboo artisans	9,007
Paper artisans	379
Textile artisans	1,778
Textile workers ( <i>deshiladores y bordadores</i> )	5,314
Pottery artisans	1,977
<b>TOTAL</b>	<b>24, 070</b>
Source: SECULTA, 2010	

## 5. CONCLUSION

Digital technologies offer unprecedented possibilities for human creativity, global communication, and access to information. Yet in the last decade, mass media companies have developed methods of control that undermine the public's traditional rights to use, share, and reproduce information and ideas. These technologies, combined with an oligopolistic structure in the media industry and new laws that increase its control over intellectual products, threaten to undermine creativity, privacy and free speech.

In June 2000 Australia posed a question to the Permanent Mission of Mexico on the Council for TRIPs at WTO. The question was if there any specific exceptions to copyright under the law of Mexico to allow use of copyright material by third parties for permitted purposes (such as research, education, fair use or fair dealing?) Are there any significant judicial decisions with bearing on this issue? Are there any specific rules or findings concerning exceptions or limitations to copyright protection of computer software? (WTO 2001)

The mission answer that under the Federal Law on Copyright (LFDA), Title VI, merely establishes the limitations to copyright and neighbouring rights. Until today this article haven't been applied:

### Chapter I. Limitation in the Public Interest

Article 147. The publication or translation of literary or artistic works shall be considered in the public interest where they are necessary for the advancement of science and national culture and education. Where it is not possible to obtain the consent of the owner of the corresponding economic rights, the Federal Executive may, through the Ministry of Public Education and either ex officio or at the request of a party, license the publication or translation in question against payment of compensatory remuneration. The foregoing shall be without prejudice to any international treaties on copyright and neighbouring rights signed and ratified by Mexico.

In developed countries, libraries, civic organizations, and scholars have begun to turn the idea of information commons, with a wide variety of open democratic information resources now operating or

in the planning stages. These include software commons, licensing commons, open access scholarly journals, digital repositories, institutional commons, and subject matter commons in areas like music, cinema and books. The basic characteristics in this commons is that they are collaborative and interactive, taking advantage of the networked environment to build information communities. Benefiting from network externalities, meaning that the greater the participation, the more valuable the resource. Many are free or low cost. Their governance is shared, with rules and norms that are defined and accepted by their constituents. they encourage and advance free expression. (Kranich, 2004)

In practice, information communities unite people around a common interest through increased access to a diffused set of information resources. The Internet is often the hub of these communities, facilitating connections and collaborations among participants, the exchange of ideas and links with others who have similar interests and needs. Scholars describe five characteristics that distinguish these Internet-based information communities: (Kranich 2004)

- information-sharing with multiplier effects;
- collaboration;
- interaction based on needs of participants;
- low barriers to entry
- connectedness with the larger community.

In practice this is note very different to “Napsterizing” cultural products. The implementation of this sort of policy would have to analyze tradeoffs between innovation and consumer welfare (Hughes, et.al., 2002), at the same time that safeguard free-speech and the right for information. In any case government would have to intervene. So far its intervention has been enforcing the law through police activities. Mainly a “stick” strategy, that ignores the possible “carrots” offer by commons' policies that strength public access to culture, knowledge and information.

In Mexico low Internet connectivity hinder the opportunities offer by information commons and network externalities. A policy devoted to end digital divide would be a much better way to propel innovation than police's raids against pirates. SECULTA policies are a first step toward this goal. Nevertheless, it is necessary to implement clear policies for benefit sharing. Matt Sakakeeny, a professor at Tulane University, has study this kind of policies for the case of New Orleans. About this Sakakeeny says “Taken together, these case studies and theorizations point to a break between discourse and practice in cultural policy, a rhetorical gap that may be a universal feature of cultural

policy. In New Orleans, there is no longer a need to demonstrate the expediency of local culture; no performer, administrator, or researcher would question the resourcefulness of creative labor in the local postindustrial economy. The more pertinent issue is then: For whom is expediency constituted? As culture is increasingly recognized as an asset for a productive economy, cultural policy has changed while economic patterns of marginalization have remained the same. This is the predicament of many black musicians in New Orleans.” (Sakakeeny 2008)

Although determine if the case of Oaxaca corresponds to that of New Orleans is out of the scope of this paper, we observe a clear contrast between a cultural policy that explicitly regards the role of culture as an economic asset and an ample low income population that produce most of these cultural goods and have low access to cultural goods from other parts of the world.

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### Annex I. Demand for books and exchange of digital files in Oaxaca, Mexico





