The Microeconomics of Competitiveness:

Firms, clusters and economic development (Professor Michael Porter)

FINAL REPORT

The LA Motion Picture Industry Cluster

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1. The cluster's environment: the US, California and LA

1.1. The US economic performance and the national business environment

1.1.1. Country profile and overall economic performance

The United States is today the only global superpower, with a dominant position in economic, military and cultural terms. Although the United States represents less than 5 percent of the world's population, it is the World's largest economy with a GDP of $11.7 trillion in 2005, accounting for 28.5% of world GDP. The US also ranks fourth in income per capita ($33,041).

The third largest country in the world, the US benefited in its economic development from a large market and important natural resources. Population expanded rapidly thanks to large waves of immigration and reached 293.6 million in 2005. The United States has large mineral resources a fertile farm soil, a moderate climate. It also has extensive coastlines on the Atlantic and Pacific Oceans as well as on the Gulf of Mexico.

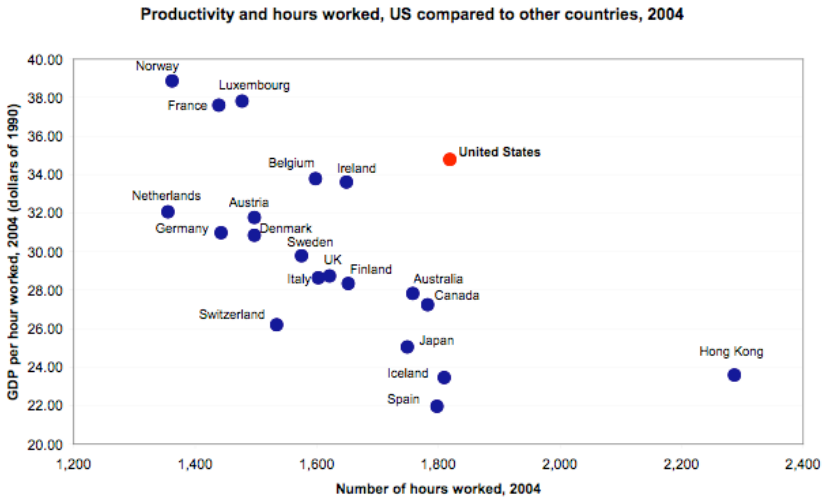
The American economy is today more closely intertwined with the global economy than it has ever been. The North American Free Trade Agreement (NAFTA) has further increased economic ties between the United States and its largest trading partners, Canada and Mexico. US share in world merchandise exports is high (9.1%, ranked 2nd) but decreasing (-3.3% between 1998 and 2004). However, the US was less trade dependent than the OECD average (trade in goods represented 18,5% of GDP in 2005).

The main economic sectors in the US were business services and financial services in terms of employment and hospitality/tourism, automotives, business services and information technology in terms of export value. The fastest growing sectors were education/knowledge, business services and entertainment in terms of employment and petroleum products and biopharmaceuticals in terms of good exports.

The US economic performance has been particularly impressive in the last 15 years. The economy grew continuously from 1991 to 1999, the longest peacetime economic expansion in history, with unemployment reaching in 1999 its lowest level (4.1%) in 30 years, while inflation was kept below 4.2%. This expansion allowed the government to run a budget surplus from 1998 to 2001 and lead to a boom in the stock market. After the NASDAQ crash in 2001, the events of September 9/11 and some financial scandals (e.g. Enron), the US economy experienced a short recession in 2000-2001. However, it quickly recovered thanks to an accommodating fiscal and monetary policy. In 2005, GDP growth was 3.5%, inflation 2.8% and unemployment 5.1%.

1.1.2. The national business environment

According to the Growth Competitiveness Index 2005 (World Economic Forum, 2005), the US is ranked number 2 behind Finland, while according to the Business Competitiveness Index, US is ranked 1st. From a macroeconomic standpoint, the US recent economic achievements were based on high productivity growth (output per hour has grown at an annual rate of 2.9% on average since 1996), leadership in innovation (the US ranks first in number of patents and patents per capita), combined with a high utilization of labor (1819 hours per worker per year, employment rate of 71%) and an efficient macroeconomic policy.

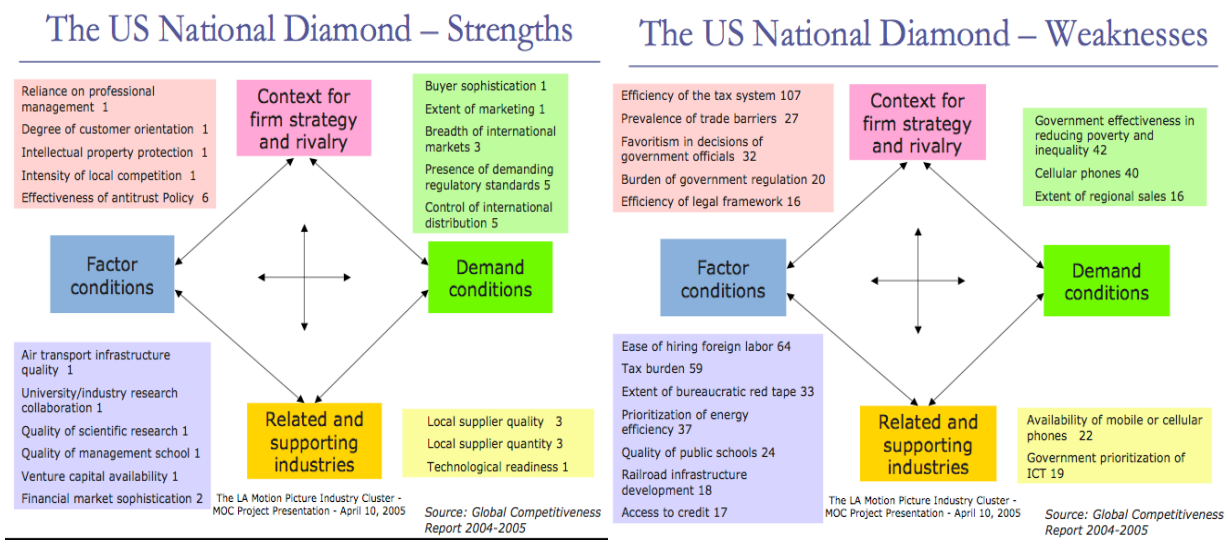


Source: Groningen Growth and Development Center

However, some concerns are raised by the low level of the net national saving rate (negative at the end of 2005), the budget deficits run by the Bush's administration and the external imbalances (external debt was 21% in 2004 and trade deficit hit 7.2% in 2005). Moreover, income inequalities have been rising in the recent years and the aging of population is expected to put social security and healthcare systems under pressure.

The microeconomic environment

The strengths and weaknesses of the US business environment are shown in the following exhibits (the scores indicate the rank of US in the world Competitiveness Report).



1.2. California economic performance and the state business environment

1.2.1. State profile and overall economic performance

Located in the south part of the west Coast, California is US third largest state in land area. It has the largest population (35.9 million, i.e. 12.2% of US population) and the largest Gross State Product (over $1.5 trillion in 2004, i.e.13.3% of US GDP) in the country. If it were considered separately, it would be the 8th largest economy in the world. California ranks 12th in the US in terms of per capita personal income ($35,172 in 2004, i.e. above the national average of $30,547) and the average wage was 12% higher than the national average.

California is characterized by diversity. Californian regions have different climates and natural features depending on latitude, elevation, and proximity to the coast. The population is also increasingly diverse with White people representing 44% of the population, Hispanics 35%, Asians 12% and Blacks 6%. English is the official language of the state but 40% of the population speaks a language other than English at home. Income inequalities are also higher in California than in the rest of the US and 14% of the population is below the poverty line.

California is famous for some significant economic regions such as Hollywood (entertainment), Silicon Valley (computer and high tech), Wine Country (wine) and Central Valley (agriculture). The main economic sectors in California are business services and financial services in terms of employment (entertainment ranks 6th), and computer & electronics production in terms of exports value[1]. The fastest growing sectors since 1995 have been business services and education in terms of employment and computer & electronics in terms of absolute export value. California is the nation's leading agricultural producer.

California's economic performance was impressive in the recent years, with growth averaging 4.9% between 1997 and 2004, while inflation was 2.8% on average. Growth in California has followed and amplified national trends. During this period many clusters faced wide fluctuations in the employment, particularly Information Technology, where after a continued rise in employment up to 1999, the number of jobs fell sharply. Even in the Business Services Sector, jobs fell sharply in 2001-2002 by more than 150,000. Indeed, following fast growth at the end of the 1990s, the Californian economy experienced a recession after the burst of the stock market bubble. However, it recovered rapidly. In 2004, growth was 5.1%, inflation 2.6% and unemployment has since decreased to 4.8%.

[1] US Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School

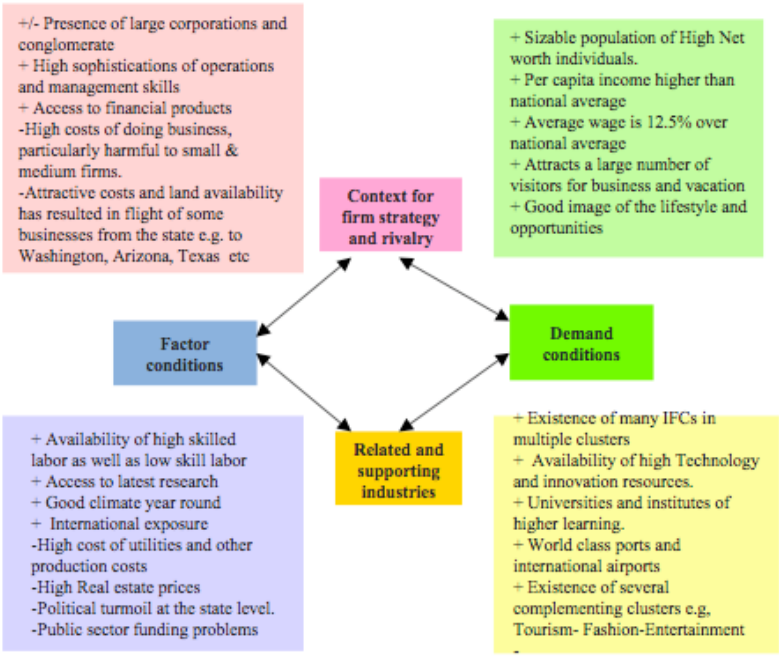
1.2.2. The state business environment

California's economic performance was based on strong productivity growth (output per worker grew at an annual average rate of 3.3% between 1997 and 2004) and employment growth (1.6% on average), as well as a high innovation capacity: California ranked third in the US in 2003 with 15.1 patents per 10,000 employees (as compared to 7.7 for the US).

In spite of the fact that California is the ranked highest in terms of gross State Product, California has faced serious challenges. Some of the keys ones are:

- Very high cost of doing business: California is characterized by a very high corporate tax compared to other states and a high cost of living (housing price doubled in the past 5 years, the income tax is very high) that also implies high labor costs. This has led some businesses to relocate part or all of their operations to low cost areas like Arizona, Texas etc.
- Continued operating budget deficit (expected deficit for 2006: $6.4 billion); the deficit would exert pressure on the quality of services provided by the state.
- Electricity market crisis of 2000-2001 resulting in an energy shortage and high electricity prices (twice as high as before the deregulation when they were already 50% higher than in the rest of the US). After several blackouts a state of emergency was declared from 2001 to 2003. The Federal Energy Regulatory Commission concluded in 2003: "supply-demand imbalance, flawed market design and inconsistent rules made possible significant market manipulation".
- Governor Gray Davis became the second governor to be recalled in American history in 2003 (reasons for disapproval were budget shortfall, recession, dubious campaign contributor connections and mismanagement of the electricity crisis). Arnold Schwarzenegger replaced him in 2003. However, he has not been able to balance the state budget.

California's diamond is presented below:



1.3. LA's economic environment

LA is the second-largest city in the United States in terms of population, with 3.85 million inhabitants and 10 million residents in the county (i.e. more than the population of 43 states). The city's area is also larger than either in New York or Chicago. Los Angeles is one of the most cosmopolitan places in the world with 46% Hispanic, 16% Asian and 11% African American. On crime, despite some negative stereotypes, Los Angeles compares relatively well to other cities, with a total crime index lower than that of San Francisco, Chicago, and Boston. The city is governed by a mayor-council system with 15 city council districts and has a large number of universities and colleges, including UCLA and USC (University of Southern California). In terms of transportation, LA is a world leader: for instance, LA has more airports than any major city in the world, as well as the largest freeway systems and the third-largest container shipping port. This allows the city to benefit from international trade and tourism. Other important clusters are entertainment, aerospace, agriculture and petroleum. The main clusters in terms of employment and their national ranking are presented in Appendix 3.

2. The Motion Picture Industry

Today, the motion picture industry is one of the major providers of entertainment around the world. Even if numbers fluctuate strongly, people flock into movie theaters, watch movies on television, buy videos, DVDs, soundtracks and all kinds of merchandise. Since the early 1900s, Hollywood, California, has established itself as the major hub of the motion picture industry. While most major film production companies are headquartered in Hollywood or in adjacent communities belonging to the larger Los Angeles motion picture cluster, the industry is truly global: Large production centers are located in India and China, producing mostly for the domestic market. And almost every developed country has its own motion picture industry. In addition to that, the Hollywood companies have developed a sophisticated network to spread their movies and content all around the world, even at the same time: major blockbusters are now released on the same day in all major cities.

2.1. A short history of the motion picture industry

California is the place where the modern motion picture came into existence. However, movies where already produced when Hollywood was still a remote rural settlement. It was several hundred miles north, in Palo Alto, where in 1878, pioneer Eadweard Muybridge created the first recorded instance of a series of photographs that captured and reproduced motion, in his case of a running horse. In 1891, Thomas Alva Edison, one of the most prolific inventors of U.S. history, brought the predecessor of the modern movie camera to market, the kinetoscope. The first short movies were shown to the public during the intermissions of vaudeville shows from 1880 to 1920 and in small machines in shopping centers.[2]

[2] Vaudeville was a multi-act theater show flourishing in the U.S. between 1880 and 1920. It included all kinds of performances, from song-and-dance to acrobats, mathematicians and lecturers. The development of high-quality movie entertainment led to a crisis and, finally, the disappearance of Vaudeville after 1920.

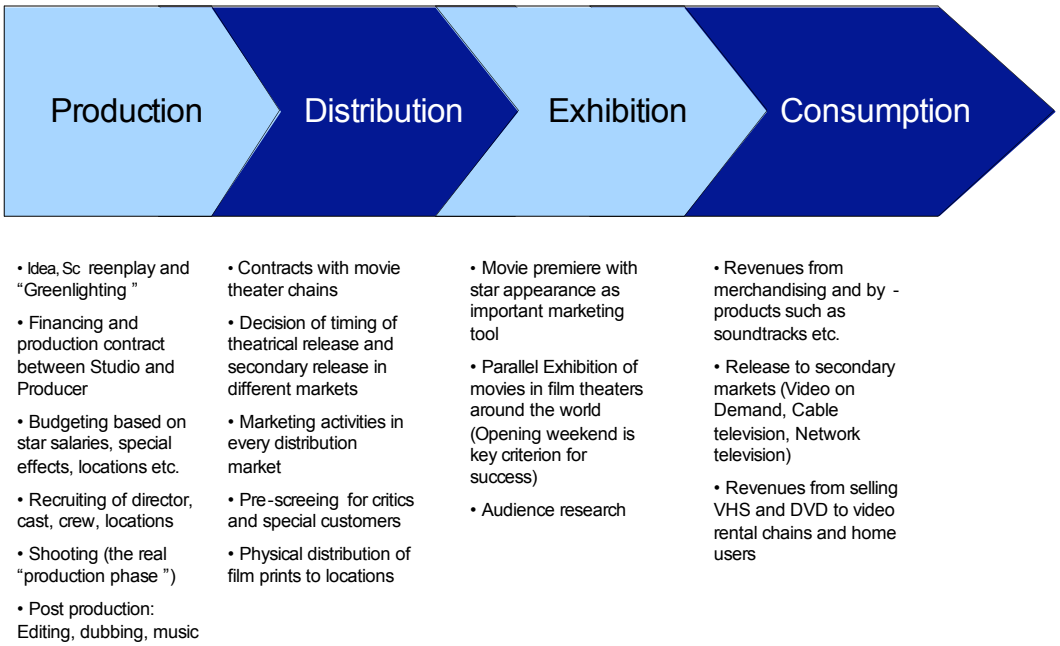
Concentrated in New York and New Jersey during those years, the American movie industry gradually moved back to its birthplace in California, not only due to the weather, but also for legal reasons, but this time settled in the Los Angeles area.[3] After the First World War, other advanced countries started developing their own movie industries, especially France, the United Kingdom and Germany. After the Second World War, developing countries joined in. Hong Kong became a major production center for Eastern Asia, and in India, the so-called "Bollywood" system came into existence. Apart of a few exceptions, these movies were mostly produced for the domestic market.

After a period of adherence to traditional ways of producing and displaying movies, several technological shifts revolutionized the industry in the second half of the 20th century: From the emergence of television in the 1950s to the video system in the 1980s and digital production and distribution in the late 1990s, the industry had to overhaul its strategy and structure several times. None of these changes affected the key feature of the global motion picture industry - the overarching dominance of U.S. movie production worldwide.

2.2. The motion picture industry value chain and market

The value chain of the motion picture industry has developed into a tight network of formal and informal structures of limited transparency. Movie ideas, early budgeting procedures and distribution strategies are secrets that are well kept by the studios. However, in the end, a movie goes through a similar value chain as any consumer product. It is convenient to break up the value chain in four different segments from production over distribution and exhibition to consumption (Eliasberg, 2005). The work and the resources required for any of these stages vary with the type of movie, from blockbusters to independent productions.

[3] See 3.1.: A Short History of Hollywood



The production stage summarizes all steps that are necessary until the original film roll is ready to be copied. The idea for the movie does not necessarily have to come from a writer, even if their number is large: The "Screenwriters Guild of America" has more than 5000 members, but only about 600 movies are produced in the U.S. every year (Epstein 2005). Oftentimes, ideas come from producers, executives, actors, agents or outsiders. After the script is written, the studio chiefs have to give the "green light". From this moment, the project is called a "production". A huge machinery of planning, budgeting, recruiting precedes the actual shooting. As soon as the material is filmed, the post-production process begins. The advance of digital technologies has made this stage increasingly important and cost-intensive. Moreover, most of the outsourced activities are production rather than postproduction activities.

The second step in the value chain consists of the distribution of copies to the theaters. To ensure success, the studios have developed a sophisticated marketing system, from raising early awareness long before the film is released to the so-called last stage of the campaign, the "drive", right before the opening weekend. While marketing expenses continue to increase, the

distribution expenses themselves might soon be diminished: In the near future, theaters will gradually introduce digital projection techniques, what will revolutionize the distribution process as a limitless number of copies could be produced for a minimal amount of money (Eliashberg 2005). At the same time, the risk of piracy would obviously increase.

In the third stage, the actual exhibition, the studio companies loose some of the control over their product. While the modern multiplex chains enter in general contracts with the studios, they usually retain the power of making the decision on how long to run the picture in their theaters. As the major revenue source for movie theaters is the concession business with popcorn and sodas, the owners are not willing to accept even small decreases in audiences after the first week as they want to maintain the traffic along the stands. In order to extend the show times for at least some time, the contracts usually contain a clause that provides the theaters with a weekly increasing share of the box office revenue.

The last stage is the broad consumption of the movie after the theatrical release. Even the most successful blockbusters would hardly provide profit for the studios without substantial windfalls from the secondary and third market. Merchandising, broadcasting and the distribution of the movie on VHS and DVD now generate higher revenues than the box office (See Appendix 4). The importance of merchandise can be easily illustrated by the fact that in recent years, the soundtrack provided sometimes more cash for the studios than the film itself (Epstein 2005).

2.3. The US motion picture industry domination

From the early beginnings to present times, the U.S. system dominated the motion picture industry. Nonetheless, India surpassed the United States in numbers of films produced and had a comfortable lead of 950 to 610 in 2005. At the same time, the U.S. industry invested a multiple of the average amount of money per movie compared to the Indian industry and competitors in

industrialized countries. As a result, the U.S. industry has a strong lead in total investment in the production and distribution of motion pictures.

The total market value of movie production around the world was $ 75 billion in 2003. Total box office revenue amounted to $ 22 billion, what accounted for 7.25 billion tickets sold in almost 150000 theaters worldwide. The secondary exploitation via licensing, VHS, DVD and merchandising generated revenues of $ 53 billion. Looking at the operating revenue of movie companies around the world, it becomes even clearer how dominant the role of the U.S. companies is: It totaled $ 50.8 billion in 2002, accounting for 67 percent of the world market. Almost two thirds of this revenue is generated in the Los Angeles cluster.[4]

3. Analysis of the LA cluster

For almost a century, the Los Angeles area has led the world motion picture production. To understand this development and to identify current challenges, our analysis starts with a short history of Hollywood and a close look at its performance over recent years. Further on, all the aspects of the Cluster diamond, from factor conditions over the context for strategy and rivalry to the demand conditions and the supporting and related industries in the area will be explored in as much detail as possible.

3.1. A short history of Hollywood

From 1910 on[5], movie companies moved from the New York area to Hollywood where the weather was much more reliable for outdoor shooting. In addition, labor was much cheaper in California at that time than on the East Coast. Also, there was a legal reason: Thomas Edison, who held the patents on the movie equipment of these days, employed a large group of lawyers

[4] Data from the MPAA website (www.mpaa.org) and from the Australian Film Comission

[5] The first movie studio in the Hollywood area, Nestor Studio, was founded in 1911 on the intersection of Sunset Boulevard and Gower Street by Al Christie and David Horsley.

to enforce these patent rights, and California was almost out of reach for them in the times before air travel. The producers had set up an elaborate system to either hide the equipment before the lawyers came by train or move quickly into Mexico (Epstein 2005).

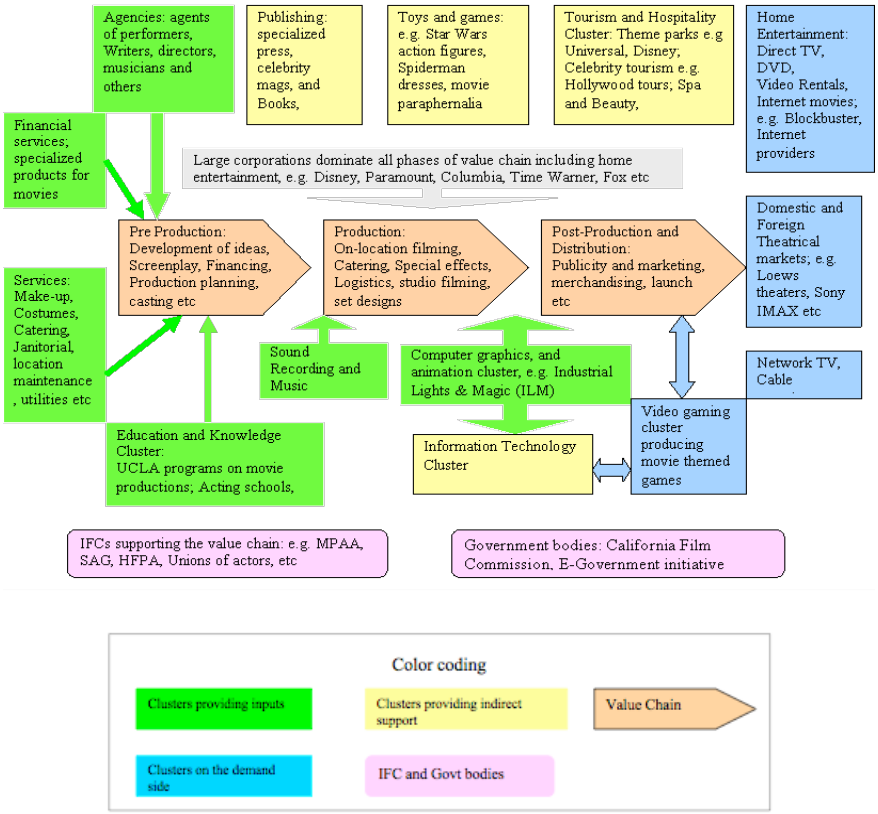
Soon after, the period known today as the "Golden Age of Hollywood" began. From the end of the silent film area in 1927 until 1948, the major studios, all of them located in the Los Angeles area, controlled the whole value chain from film production to exhibition and consumption. Actors signed up with studio companies for an annual salary instead of being paid per movie. The first Academy Award ceremony was held in 1929. The studios themselves owned most of the movie theaters around the country, so they could control every aspect from promoting and scheduling to ticketing. This system came to a sudden stop in 1948: The landmark anti-trust decision in the case "United States versus Paramount Pictures" forced studios to sell their theaters and broke up the vertical integration (Epstein 2005).

Not only the legal decision, but also technological progress challenged the studio system: From the 1950s on, home television spread at a very high speed around the country. Reluctant at first, studios recognized that the additional outlet did not threaten the motion picture industry, but offered additional revenue. However, the quality of movies produced during the 1960s was considered lower than in previous decades. The studios overcame this crisis from the 1970s on, when the "New Hollywood" era brought about what was soon called "post-classical cinema": The companies developed a mix of culturally influential blockbusters and high-quality independent movies that fascinated the audience worldwide.

This time of relative comfort was soon to be finished, with the 1980s and newly available technologies such as VHS, which made household ownership of entire movies possible for the first time. Again, after certain difficulties, the industry managed to embrace this change and learned from its mistakes by actively pursuing the next step, the use of digital technology. The

cluster expanded and approached its current shape, going far beyond studio and distribution companies to a broad range of supporting and related industries, especially in the technical fields. At the same time, certain activities were relocated: while conceptual work and post-production was still mostly done in the Los Angeles area, shooting often took place in locations all over the world, from Canada to the United Kingdom, New Zealand and Eastern Europe. However, the studio companies could not escape the concentration process in the media business: large media conglomerates now own most of them.

3.2. Description and mapping of the cluster



The Motion Pictures Production and Distribution cluster has linkages with a variety of other clusters. Some clusters have direct linkages at the factor input level, e.g. sound recording, specialized training programs etc, while others are linked on the demand side e.g. home entertainment, theatrical venues. A number of clusters are linked relatively indirectly e.g. IT,

Tourism, Fashion, publishing and personal services like spa, fitness etc. The Cluster Map above identifies the value chain as well as linkages with supporting industries. The LA economic area has the advantage that the entire value chain and its supporting clusters are present in this area, or very close in the case of IT (Silicon Valley).

3.3. Performance of the cluster over the recent years

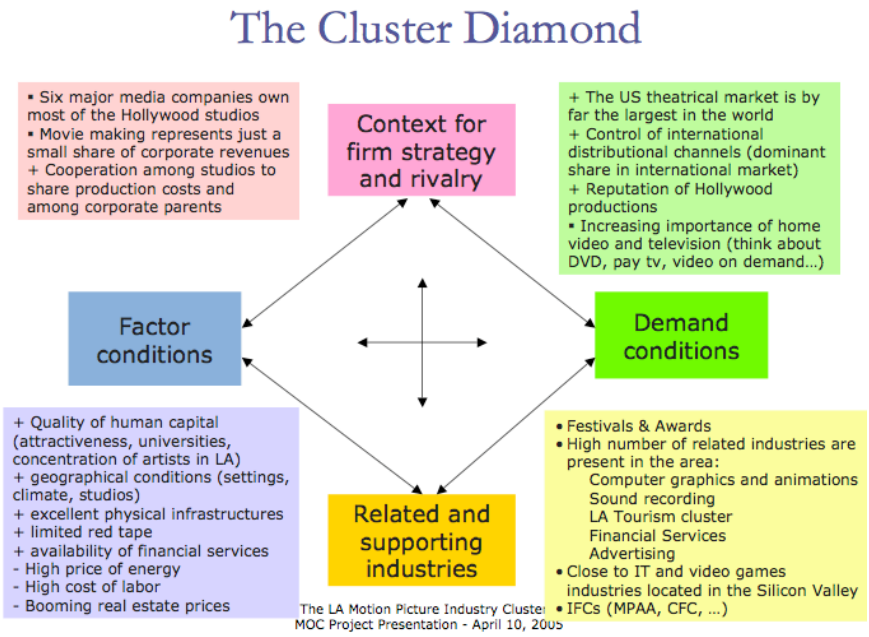
The US motion picture and video industry is highly concentrated in the LA economic area: in 2003, 138,404 people were working in the LA cluster, accounting for 43% of US employment in the sector[6]. The employment location quotient, i.e. the ratio of the industry's share of total local employment relative to its share of total national employment, was extremely high, at 7.1. LA remains well ahead of other location in terms of share of national employment in the motion picture industry. New York ranks second with only 11%, San Jose-San Francisco third with 6.5%. Other locations are below 4%, with 11 of them in between 1 and 4% (see Appendix 6). From that point of view, Hollywood's position seems very strong. However, the LA location has rather stagnated over the recent years while other location were growing quickly. The employment compound annual growth rate over the period 1990-2003 was only 0.8% for LA, against a national average of 3.5%. In comparison, employment CAGR was 1% for New York, 14.2% for Miami, 14.5% for San Jose-San Francisco, and 24% for Phoenix (see Appendix 7).

It is important to note that postproduction[7] represents a small share of motion picture industry activities in LA as compared to other locations. The ratio of employment in postproduction to employment in production is 20% in LA, i.e. well below the national average (33%), or the ratios observed in San Francisco (109%) and New York (35%)[8].

[6] The source of the figures for this section is the *Cluster Mapping Project*, ISC, HBS
[7] Postproduction includes services such as editing, film/tape transfers, titling/subtitling, credits, closed captioning, computer-produced graphics, animation/special effects, as well as developing and processing motion picture film.
[8] Source: US Census

3.4. Diamond analysis

The historical growth of LA cluster is based on favorable factor conditions, primarily availability of creative talent, demand of movies as a significant source of entertainment, availability of supporting services, and a very conducive government policy. In the last two decades the cluster has come under pressure on almost all accounts. The following sections will discuss the different aspects of Cluster Diamond in detail.



3.4.1. Factor conditions

The LA economic area has a lot of strengths in terms of factor conditions. From the geographical point of view, California is blessed with natural diversity, which offers a large variety of settings (Pacific coast, Death Valley, San Bernardino mountains, urban areas, etc.) while the climate allows year-round production.

Another major strength of the LA area is human capital. LA has the largest number of people working in arts, design, entertainment and media in the country (3.7% of LA total employment, as compared to 2.9% in NYC and a national average of 1.1%). Hollywood's

prestige attracts actors and professionals from all over the world. LA has also become the world leading location for film studies. UCLA is the only university in the US where the study of theater, film, television and digital media is integrated within a single professional school and it has renowned programs in screenwriting and producing. Numerous UCLA alumni have won Oscars, Emmys and Tony awards. Other film schools are located in the area, for instance the School of Cinema-Television at the University of South California and the LA film school.

Other features of the LA area are playing an important role in providing a good environment to the motion picture industry. Physical infrastructures, such as airports and telecommunications, are excellent. Studios also have access to highly sophisticated financial products in LA, which is the fourth location in the US for financial services. Finally, the State has been helpful in limiting bureaucratic procedures: for instance, no permit or site rental fees are required for filming on state properties.

However, factor conditions show some weaknesses as well. Among them is the high price of energy: electricity and petroleum products prices were both 25% higher than in the rest of the US in 2004. California is also facing a boom in real estate: prices doubled in California in the past 5 years. Lastly, the corporate tax is very high and wages in the motion picture industry are higher in LA than anywhere else in the US: for instance, the average wage is almost twice as high as in Miami and hourly mean wage of camera operators is 50% higher than the US average. All that makes LA a very expensive location to work in.

3.4.2. Context for strategy and rivalry

Starting in the 1970s and going on until recently, the process of concentration in the media and entertainment business resulted in the system of the “Big Six” media conglomerates (all with headquarters on the East Coast, apart of Sony) owning the “Big Ten” movie studios (see Exhibit below). While they are fully integrated financially, the studios are left to operate as independent

sub companies on a daily basis, while obviously adhering to the overall corporate strategy. The studios of the Los Angeles cluster are in full control of the output: most theatrical releases labeled as 'independent' are produced and/or distributed by a subdivision of one of the major studios, such as Warner Independent Pictures or Miramax.

NBC UNIVERSAL →	Universal Studios (includes Focus Features)
SONY →	Sony Pictures Entertainment, Columbia Pictures, TriStar Pictures, Metro Goldwyn-Mayer
VIACOM →	Paramount Pictures, DreamWorks SKG
News Corporation →	20th Century Fox (plus Fox Searchlight Pictures, Blue Sky Studios)
The Walt Disney Company →	Buena Vista Motion Picture Group (includes Walt Disney Pictures, Touchstone Pictures and Miramax)
TimeWarner →	Warner Bros. (includes Warner Independent Pictures), New Line Cinema

While the movie studios provide important content for the media conglomerates, their share of total revenue is rather low: With 20 percent of its revenue coming from the motion picture subdivision, Walt Disney shows the highest number (Epstein 2005). Not only has the competitive pressure moved from the studio companies to the corporate headquarters; the location where this competition takes place has started to shift as well: the home entertainment market is now more important than the theatrical market, meaning that studios have to struggle for space on shelves in supermarkets, video stores and for online distribution.

Given the constantly increasing costs of movie production due to expensive special effects and digital production, strongly increasing fees for actors and large marketing campaigns, it is hard for the studio companies to break even with a movie, even if it is a success at the box office. Under commercial pressure, studio companies have started to cooperate by specializing on certain areas such as digital post-production or international distribution. The result is that two or

three of the major studios are often credited for one release. At the same time, more formal ties emerge between the corporate parents: NBC Universal and Viacom jointly own theaters abroad and share distribution costs, while Sony and Time Warner have joined forces in promoting movie characters over the internet.

3.4.3. Demand conditions

Given the nature of the product, the audience can be anywhere in the USA or in the world. Hence the demand factors discussed apply to a broader geographical area than just the LA region. The salient features of demand conditions are as follows:

- The US is the largest theatrical market in the world (See Appendix 8). Admissions per capita are 5.4 (higher than in the EU, Japan and Australia). Annual spending per capita is $32, second in the world behind Australia ($34) but ahead of France ($26) and the UK ($24).
- "Going to the Movies" is a desirable entertainment option; and even with the advent of Cable TV and DVDs, going to the movies is a popular socialization activity.
- The demand is very sophisticated as the audience expects very high quality products, in terms of technical and creative content.
- Reputation of Hollywood movies (e.g. stars and technology) is good and widespread.
- The wide acceptability of English language and American culture gives easy access to worldwide audiences for Hollywood movies, which dominate international markets and international distribution (Appendix 9).
- The movies from Hollywood offer a variety of genres with both blockbusters and "Indie" movies as well as a large range of topics (comedy, drama, horror, thriller, etc.).
- Within the LA area there is significant local demand as the area has the most important concentration of movie theaters in the US and is the site of many movies premieres.
- The number of distribution channels has largely increased and changed (See section 2.2)

3.4.4. Supporting and related industries

A very wide range of industries has direct linkages to the Motion Picture Industry in LA. They include: sound recording, television broadcasting, video games, special/visual effects, computer animation, photographic equipment and supplies, advertising firms; talent agencies, celebrity magazines, theme parks and the LA Tourism cluster. It is difficult to imagine another region in the US or even the world to have such support for the motion picture industry from industries, which are not only related, but also increasing synergistically intertwined.

Likewise, many other industries have linkages with Hollywood: the retail and wholesale industry, real estate development and management, financial services, personalized services (Grooming, Spa, Cosmetics, Fitness etc.), legal services, which all have a close relationship with the motion picture industry. These industries not only contribute to the overall economic climate, but also have very direct impact on Hollywood. At the same time, the motion picture industry generates more business for these industries.

Several well-organized Institutions for Collaboration are working for the interest of the industry. Most of them have either their HQ or Main Office in LA. The list is not complete, yet the major institutions are: Motion Picture Association of America, California Film Commission, Hollywood Foreign Press Association, Los Angeles Film Critics' Association, National Association of Theater Owners and Broadcast Film Critics Association. There are also a large number of associations pertaining to particular occupations, like the Screen Actor Guild or the Digital Video Professionals Association, and labor unions.

3.4.5. Role of the state government

The California Film Commission is the main arm of the State Government dealing with the Movie production cluster, and aims to keep jobs and filming within the state. According to the CFC website it "*works to enhance the economic climate in California by keeping film industry*

jobs and projects in the state. The Commission has an advisory board of 21 members appointed by the Governor, Senate Pro Tem and Speaker of the Assembly"[9]. CFC is the one-stop organization that facilitates film making at location planning, financing, and production. It offers special incentives for the film making industry, summarized below *(Source: CFC website)*:

1) Financial Incentive -- The STAR Partnership

The State Theatrical Arts Resources (STAR) Partnership is a unique program that offers filmmakers access to unused, distinctive State-owned properties (e.g., health facilities, vacant office structures, prisons, etc.) for a nominal fee or at no charge, thus helping production companies to substantially cut below-the-line expenses.

2) Tax Incentives

- No State hotel tax on occupancy. Most cities or counties that impose a local hotel tax have a tax exemption for occupancies in excess of 30 days.
- Five percent sales tax exemption on the purchase or lease of post-production equipment for qualified persons.

3) Services Provided

- Free permits and no location fees for California State properties.
- A web-based location finder for sites throughout California (www.cinemascout.com).
- On site California Highway Patrol (CHP) Film Liaison available to assist with filming on State freeways and highways.
- On site California State Fire Marshal available to provide advice and approval for pyrotechnics and other special effect permits for State properties.
- Coordination with more than 55 in-state film commissions.

[9] www.film.ca.gov

4. Strategic issues and policy recommendations

4.1. Strategic issues

4.1.1. Strategic issues facing the US and California

Several macroeconomic issues represent a challenge for the federal government. It has first to tackle the external imbalances and the lack of domestic saving. A persistent trade deficit could indeed raise some concerns and foreign investors might become more cautious, which would lead to higher interest rates and a depreciation of the dollar that would be harmful to investment. Moreover, higher interest rates would make it harder to achieve fiscal balance, in particular in the context of an aging population raising the cost of healthcare and social security. There is thus a risk of "hard landing" that requires careful macroeconomic policies. At the same time, the US will have to address certain weaknesses of its business environment, by simplifying and increasing the efficiency of its tax system and by providing better public education.

California is also facing very serious challenges. In particular, the state is running procyclical budget deficits, which is contradictory to the principles of sound fiscal policy: while growth is still strong, the expected deficit for 2006 is $6.4 billion. California's business environment also has weaknesses, as it is a very expensive location to work in: energy prices are still 25% higher than in the rest of the US and housing prices are booming. Moreover, taxes are quite high: California ranks only 40th in the State Business Tax Climate Index (Dubay & Hodge, 2006). This makes it harder for California to retain businesses within its border[10]. Finally, the recent crisis in state politics was harmful to the confidence of the population in the state's political leadership and this confidence has to be restored.

A major challenge for California is to integrate the minorities and provide them with

[10] A recent example is the decision by Intel in 2005 to build a new chip making facility in Arizona because of its favorable corporate income tax system.

appropriate education and training. This is very important for social cohesion in the state and, as such, a necessary condition for a positive business environment. Related to that issue is the political controversy about the future immigration. The dilemma here lies in the fact that the industry needs cheap labor while inequalities in the state are already creating a huge potential for conflict. LA is already the city with the larger share of minority population in the US. The recent political debate and public protests have shown that immigration would be one of the key challenges for Federal and State policymakers in the near future.

4.1.2. Challenges to the global motion picture industry

The global motion picture industry faces a revolution in the way films are conceived, produced and distributed. The coming of the digital age affects almost all sections of the global value chain. The demand side is threatened not only by piracy, made easier through technologies such as DVD Burners and Recorders, Video Ipods and Video-on-Demand. The improving equipment for digital home entertainment, creating a movie atmosphere in the living room, is quoted as major reason for the recent drop in theater admissions (Epstein 2005).

A first response by the studios was to shorten the life cycle of movies: If they don't generate sufficient revenue, even movies with high budgets disappear from the theaters one or two weeks after their release. While releases on VHS in the early 1990s were scheduled on average nine months after the theatrical release, successful movies are now available on DVD less than three months later. If a studio wants to have a certain control over the entire value chain, large investments are required as the number of media channels is constantly increasing from cable television over the Internet to mobile communication devices.

In the blockbuster segment, movie production is already dominated by digital compositing and motion capture, where all parts of the image are digitally reconstructed, including the movements of actors. 70 percent of all shots in the 2004 release "The Lord of the Rings: The

Return of the Kings" were not filmed by camera at all, but produced on a computer (Epstein 2005). While the price of advanced digital processing and production is decreasing, the hunt for even more special effects requires high investments and close cooperation with computer companies, which have an increasing influence on the motion picture industry. The integration of both industries is also visible in the area of content: Video games turned movies (or the other way round) is a safe bet given the importance of teenagers in box office revenues.

The next step is digital projection in movie theaters, Again, the studio companies might loose control over one part of the value chain: At present, they can control distribution by the number of physical film rolls they send out around the world and charge high rental films. Under digital projection, the original film can be copied in a matter of minutes. A prerequisite for digital movie theaters is a switch from traditional to digital film cameras. While this technology does not provide the same quality yet, experts consider it to be just a matter of a few years until digital imaging catches up with the traditional film roll.

4.1.3. Challenges to the LA location

According to a report by the Los Angeles County Economic Development Corporation (LAEDC, 2005), the biggest threat to the LA motion picture cluster is runaway production. The movie production business is very lucrative as a means to create substantial jobs directly and indirectly. For this reason, more and more US states are offering incentives to promote film making in their areas. Moreover countries like Canada, Australia, New Zealand etc are also very actively marketing their countries as a prime location. According to the LAEDC study, production expenditure in Louisiana increased from $12 million in 2002 to $330 million in 2004 after adoption of its incentive package. According to the LAEDC study in 2004 only 39% of the movies were produced exclusively or partially in California, whereas 61% were shot either in other states or foreign countries.

The LA cluster still has the advantage of excellent postproduction facilities and high tech facilities for animation and computer graphics. Typically the on-location production is carried out elsewhere, but the projects come back to Los Angeles for postproduction. Furthermore, the major activities pertaining to Pre-production (financing, formulating of creative team, casting etc) remain in LA. However, the situation is changing rapidly, sophisticated post production facilities are now available in UK, Canada, Germany, Australia, and New Zealand. Even other US states like New Mexico and Louisiana are in the process of having new facilities.

The LAEDC (2005) has estimated the impact on tax revenue and employment for different types of motion pictures ranging from commercials to big-budget feature films, as shown below:

What's at Stake:
Dollars and Jobs at Risk When Motion Picture Productions Leave California

Production Type	Production Spending	Economic Output	Employment*		State Taxes
			Actual	FTE	
COMMERCIAL	$561,000	$1,600,000	96	7	$47,000
MOVIE-OF-THE-WEEK	$4,400,000	$12,630,000	341	102	$640,000
1-HOUR DRAMA (12 EPISODES)	$26,800,000	$76,490,000	404	719	$3,100,000
LOW-BUDGET FEATURE FILM	$1,700,000	$4,790,000	290	59	$215,000
MID-BUDGET FEATURE FILM (LOW)	$15,400,000	$43,940,000	1,001	304	$1,784,000
MID-BUDGET FEATURE FILM (HIGH)	$31,600,000	$89,950,000	1,770	565	$4,060,000
BIG-BUDGET FEATURE FILM	$69,700,000	$198,470,000	1,300	928	$10,590,000

*Actual employment is the number of people who worked (however briefly) on the production. FTE is the annual, full-time equivalent this work represents.
Source: LAEDC

Considering the impact on job creation, tax revenue, and investment of even a Low Mid budget feature film it is a lucrative business to attract.

The phenomenon of runaway production can be explained mostly by the high cost of doing business in the LA area. However there are other reasons at work also, namely:

a) Desire to seek out a variety of landscape by the filmmakers: For low-budget films that cannot afford CG reconstructions, it is cheaper to film on location. Big-budget films like *The Lord of The Ring* trilogy can afford to construct whole towns in far-flung locations.

b) Objections from highly sensitized community (concerns of environmental impact and inconvenience of mega projects)

c) Strong Unionization of employees: Election of more militant union leaders increases risks of harmful strikes in the movie cluster, and increase costs and disruptions.

In view of the above, one can estimate that the role of the LA cluster in the value chain might change so that it would continue to dominate as the location for preproduction and postproduction activities, but lose out in the production phase. The implications of these trends are that even if some financial earnings remain within the cluster, there might be an important loss of jobs because most of the outsourced activities are relatively more labor intensive.

4.2. Policy recommendations

4.2.1. Role of the federal government

The Federal government has first to address macroeconomic issues identified in 4.1.1. In particular, it should take steps to increase national domestic saving, by lowering the budget deficit and providing incentive for households to save more. It could for instance introduce personal retirement saving accounts (Feldstein, 2005) and reduce the tax disincentives to saving. Increasing domestic saving would lower the pressure on interest rates and thus allow for a depreciation of the dollar and a reduction of the trade deficit while supporting investment. The Federal government should also reform the tax system to increase its efficiency (Feldstein, 2006) and improve public education in order to provide a better business environment.

The Federal government should play a role in supporting the motion picture industry as a whole. It has an important responsibility in fighting piracy by adjusting intellectual property protection rapidly to keep pace with technological change and by encouraging and helping foreign countries to fight piracy. The Federal government should also work on the access to foreign market for American firms and movies, which implies fighting protectionism and the

imperialism thesis that is bound with it. In international negotiation, it could insist on the role of Hollywood as a catalyst of the cultures of the world (e.g. directors are coming from all over the world) and on the production by Hollywood of independent as well as mainstream films.

4.2.2. Role of the Californian government

Handling the issue of the high cost of doing business in the State should be the first objective of the California government. It implies a major tax reform, broadening the tax base and reducing substantially and across the board the corporate tax and the individual income tax. This would reduce distortions in economic activity and favor the competitiveness of the state, thus protecting it against against run-away production in a number of sectors, the motion picture industry in particular. While the decrease in the corporate tax would directly affect investment and the profitability of Californian firms, the reduction in the individual income tax would relieve pressure on wages. To reduce the cost of doing business, the State should also keep on working on the provision of energy at a lower price. It should be noted that those reforms should not be financed by budget deficits, which implies a major improvement in the efficiency of the public sector and the ability to focus on top priorities for the state. The leadership of the state would thus be very important in this process.

Considering the motion picture industry specifically, the State should play a supportive role to strengthen preproduction and postproduction, for instance through the Californian Film Commission, and by conducting a survey of the needs and obstacles faced by the actors in this area. Likewise, it should be careful of the needs of Indie movies, which might play a more important role as studios are trying to cut costs[11]. Recent examples (Crash, Brokeback Mountain, March of the Penguins, Capote, etc.) showed that some of these films, based on the quality of

[11] This trend was mentioned by several participants in the Media and Entertainment Conference held at Harvard Business School on April 8, 2006.

their content might become more attractive to the public and also to actors (some stars accept to be paid less to participate in a "better" movie). For the state, this sector is also important because of the revenues and employment it creates as shown in section 4.1.3. A strategy should be built with the relevant actors in that sector to provide a better environment for the production of these movies or to help their pre/post-production. The across-the-board tax cut previously discussed would also play a role in helping them, thus avoiding the need for a specific incentive-package.

Finally, the Californian government might be helpful in facilitating linkages and communication between the IT cluster in the San Francisco-San Jose area and the LA movie industry. It should also work on the image of California as the arts and entertainment state and market the "Hollywood brand".

4.2.3. Firms recommendations and the role of IFCs

Without changing many of their current practices, the companies in the Los Angeles cluster will run into serious problems, given the fact that the widespread availability of digital technology makes it easier and less costly to produce a movie anywhere in the world. One answer should be increasing cooperation among the studios in the cluster. If one cluster company at a time responds to the digital challenges, a lot of time and money might be wasted. An example for this cooperation is "Movielabs", a non-profit research and development entity jointly funded by the major studios in order to create technologies to protect distribution of content over internet and mobile techniques from electronic theft. The studios should work with theaters as well to improve the movie-going experience and accelerate the adoption of digital screens. They work with unions to avoid strikes and build common awareness and agreement on new challenges and opportunities.

An additional step would be to improve coordination with the IT companies in Silicon Valley. The geographical proximity to the IT area is a major asset for the motion picture cluster,

but is not sufficiently exploited yet. Efforts should be made to link the IT and Movie Clusters with the objective of pioneering and being a leader in new media and technologies for the motion picture industry. The idea is to develop partnerships with technology firms to adjust rapidly on the content side (e.g. video on demand, podcasting video, and cell phones video) and on technical tools development to protect property rights and limit piracy while using leverage of new markets such as the Internet and video games. The most current example on the content side is the cooperation between Apple and ABC for the distribution of television shows and movies over Ipods.

The role of existing IFCs should finally be improved. Hollywood indeed needs cooperative structures able to provide technological research, market data and strategies for revitalizing the Los Angeles cluster as well as a forum for exchange with competitors, supporting and related industries and local and regional policymakers. As existing IFCs are quite fragmented, a new structure bringing the different actors around the same table could be very helpful to the local industry in order to build a shared vision and strategy for the cluster.

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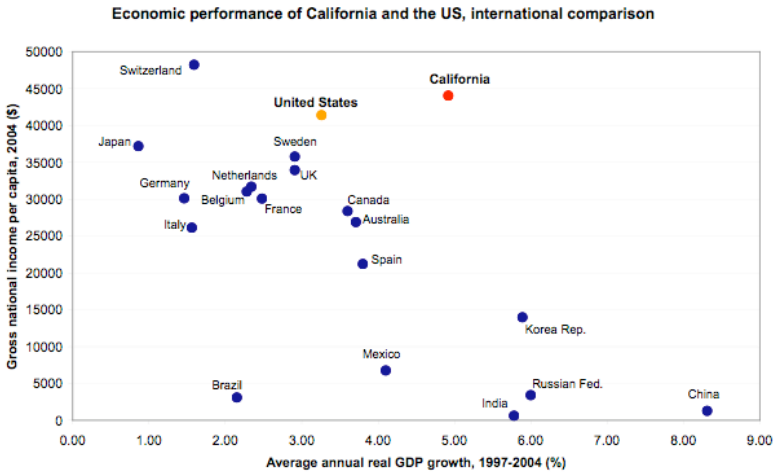
Appendix

Appendix 1

Economic Performance of California and the US



Source: World Bank

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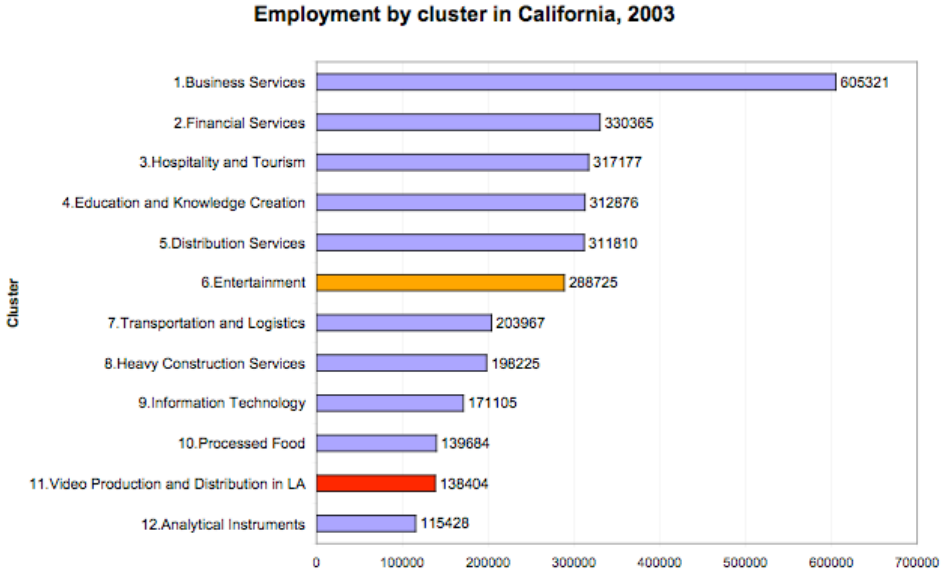
Appendix 2

Entertainment and the Motion Picture Industry are among the top sectors of the Californian economy



Source: ISC Cluster Mapping Project

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Appendix 3

Entertainment is a top sector in LA, an economic area of great importance for the US economy

National Employment Rank by Traded Cluster, 2003
Los Angeles-Long Beach-Riverside, CA Economic Area

Cluster Name	National Rank	Employment
Entertainment	1	212608
Heavy Construction Services	1	101783
Apparel	1	84255
Processed Food	1	75945
Building Fixtures, Equipment and Services	1	57109
Plastics	1	48214
Aerospace Vehicles and Defense	1	47985
Medical Devices	1	33494
Communications Equipment	1	33174
Leather and Related Products	1	14075
Distribution Services	2	166970
Hospitality and Tourism	2	159500
Transportation and Logistics	2	117240
Publishing and Printing	2	60186
Analytical Instruments	2	53167
Agricultural Products	2	22828
Power Generation and Transmission	2	13573
Construction Materials	2	8250
Sporting, Recreational and Children's Goods	2	8018
Business Services	3	278894

Cluster Name	National Rank	Employment
Metal Manufacturing	3	73457
Production Technology	3	30559
Furniture	3	24256
Biopharmaceuticals	3	19475
Lighting and Electrical Equipment	3	15187
Prefabricated Enclosures	3	13179
Jewelry and Precious Metals	3	10164
Footwear	3	1331
Financial Services	4	174174
Education and Knowledge Creation	4	135808
Fishing and Fishing Products	5	2997
Automotive	6	45007
Information Technology	6	39336
Textiles	6	13800
Chemical Products	6	12941
Oil and Gas Products and Services	7	12876
Tobacco	7	1100
Forest Products	8	9095
Aerospace Engines	9	1665
Motor Driven Products	11	7898
Heavy Machinery	14	6332

Entertainment is the 2nd cluster in the LA economic area in terms of employment.

The LA economic area has a high number of clusters occupying a leading position in the US

Source: ISC Cluster Mapping Project

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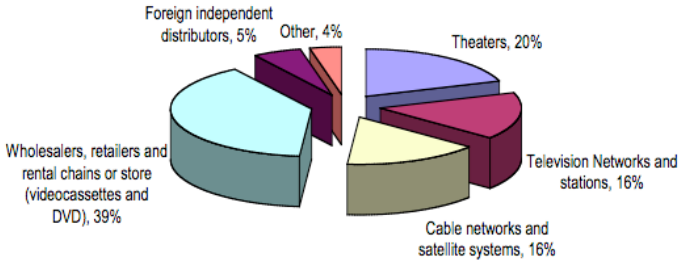
Appendix 4

Markets for commercial theater motion pictures produced by US firms (2002)



Sources: US Census Bureau

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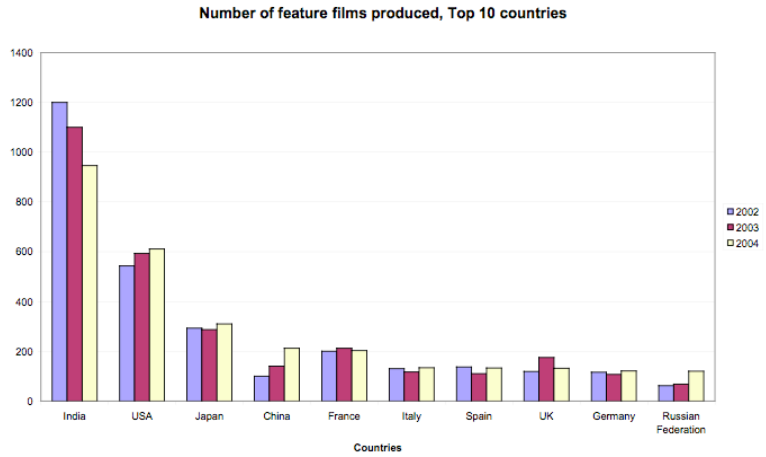
Appendix 5

The US ranks 2nd in the number of films produced…



Data from Australian Film Commission

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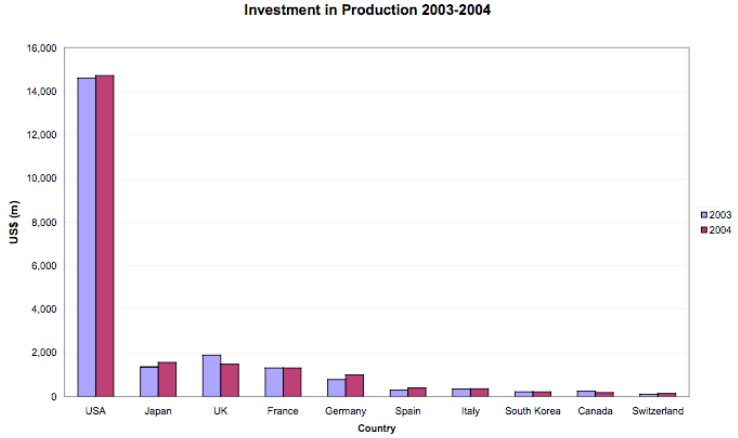
But the US is far ahead in investment in production…



Data from Australian Film Commission

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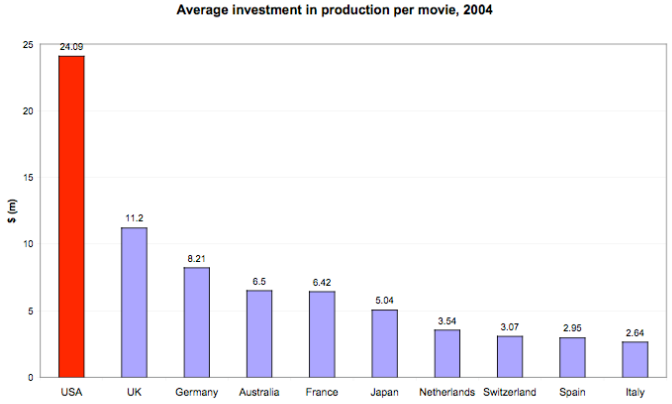
… which reflects a higher investment per movie



Data from Australian Film Commission

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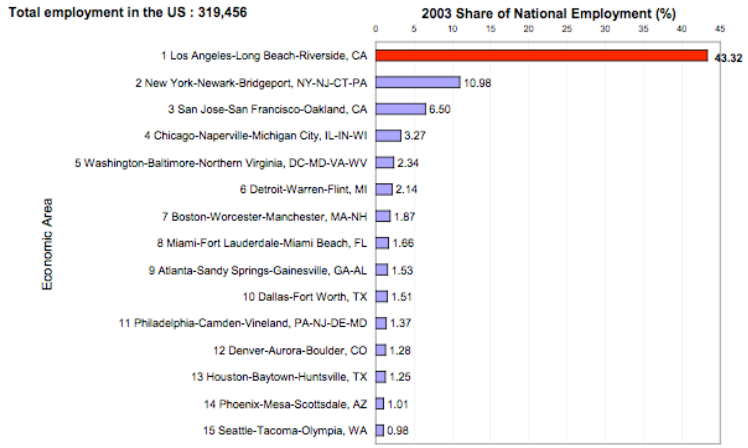
Appendix 6

Today, the LA cluster remains well ahead of other locations in the US…

Top 15 locations for Motion picture and Video Production and Distribution in the US (2003)



Source: ISC Cluster Mapping Project

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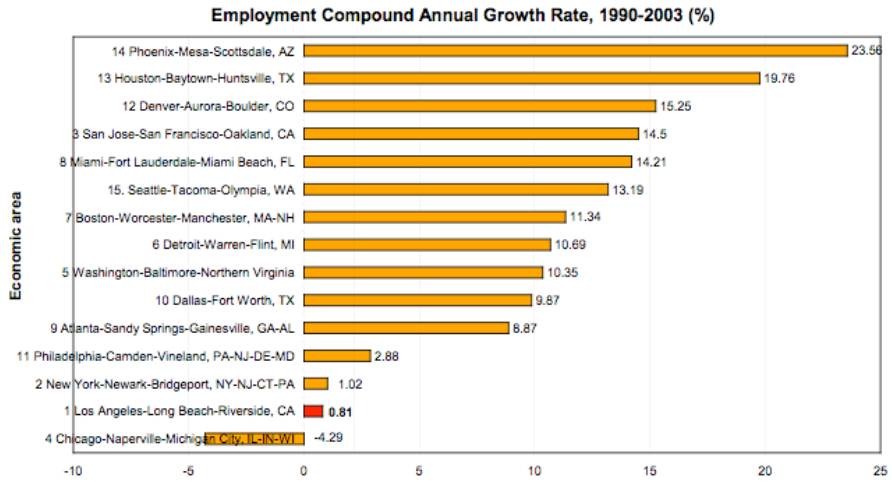
Appendix 7

But LA is stagnating while new locations are growing much faster

Top 15 locations for Motion Picture and Video Production and Distribution in the US



Source: ISC Cluster Mapping Project

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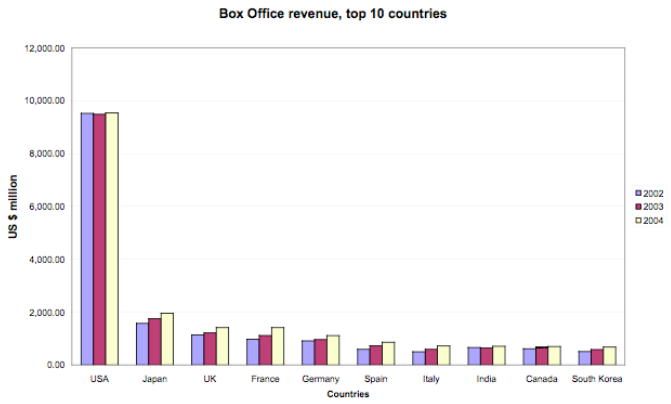
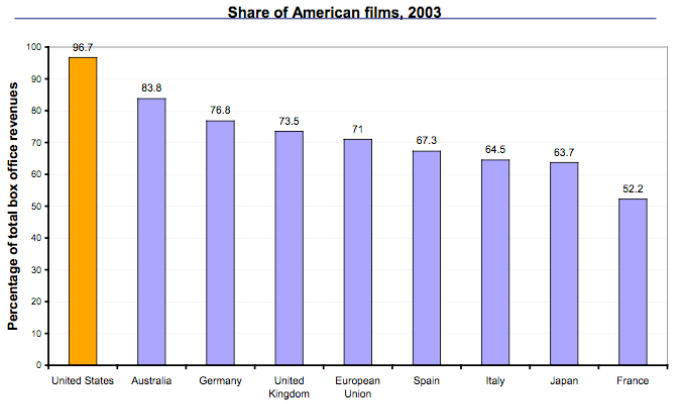
Appendix 8

Box office revenues are much higher in the US than in the rest of the world…



Appendix 9

… and US films dominate the main theatrical markets



Source: Centre National de la Cinématographie (France)

The LA Motion Picture Industry Cluster - MOC Project Presentation - April 10, 2005

Appendix 10

Us Movie Admissions in Theaters (1986- 2005, in billion)