

## Animation and Gaming Industry in India Market Research 2010



**Market Study**

**On**

**Animation and Gaming Industry in India**

**For**

**Italian Trade Commission**



**TATA STRATEGIC MANAGEMENT GROUP**

(A division of TATA Industries Ltd)

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## 1. Executive Summary

The Animation and Gaming Industry in India has undergone a significant change in recent years. The high expectations of 2006-07 have not been realized, primarily due to the economic downturn. However, the Indian players have evolved by moving up the value chain and adopting new service / revenue models. This report attempts to present an overview of the various segments of the industry (including the size, growth drivers, recent trends, challenges and future outlook) and profiles some of the leading players.

### Animation

The market in India is estimated at USD 500 million in CY 2009 and is expected to grow at a rate of ~23% p.a. to reach USD 1161 million by 2013. The animation industry in India has three key segments: Animation Entertainment, Entertainment Visual Effects (VFX) and Custom Content Development. Among these segments, Custom Content Development is the largest (~50%) followed by Animation Entertainment and Entertainment VFX. However, it is the Entertainment VFX segment which is expected to grow the fastest at ~28% p.a. Almost 70% of the revenues of the Indian Animation Industry are from the outsourcing work done for the overseas clients. Though the demand in domestic market is picking up, this trend is expected to continue.

Key drivers expected to influence the growth of Animation Industry in India are:

- Increased Outsourcing by Overseas Players: The recent economic slowdown has forced the organizations to increase focus on cost reduction leading to greater outsourcing to Asian countries, both for Animation entertainment outsourced by overseas production houses and custom content development outsourced by the corporate sector.
- Greater outsourcing share for Indian players: Indian players currently command only ~8% of the outsourcing work. This is expected to increase, especially with increasing recognition of the Indian players in terms of providing timely and quality work.
- Significant evolution of Indian Players: Indian players have moved up the value chain by developing animation content end-to-end. Moreover, the players are increasingly adopting the 'Co-Production' model (Revenue-Sharing). This trend opens high revenue opportunities for the Indian players.
- Increasing usage of Visual Effects in Bollywood is expected to give a boost to the industry.

- Increasing adoption of e-Learning by corporate sector and higher education institutions in India is a significant opportunity for Indian players, offering 'Custom Content Development'.

### **Gaming**

The Indian Gaming market is estimated at USD 239 million for CY 2009 and is expected to register a growth rate of 53% p.a. to reach 1298 million by 2013. This includes the revenues both from the consumer market and the services market. The gaming industry comprises four segments – Console, Mobile, PC and Online. Console gaming has the highest share of 42% followed by mobile with 28%. Similar to animation, the gaming services industry also derives most of its revenues from the outsourcing services.

Key growth drivers for the Indian Gaming Industry are identified as under:

- Increased Outsourcing: Similar to Animation, Gaming players overseas are increasingly focusing on cost reduction leading to greater outsourcing.
- Increased share for Indian players: Indian players currently command only ~1% of the outsourcing market. As the skill-sets of the Indian players improve, this share is expected to go up.
- Increased demand for Gaming (Global & Domestic): Globally, gaming is expected to continue its growth especially with the trend of Massive Multi-Player Online Role Playing Games (MMORG) picking up. This is expected to lead to more development, testing and porting work for Indian players. Gaming, especially mobile gaming in India is expected to go up on account of increasing mobile and internet penetration coupled with increased affordability due to falling prices of games.

### **Key Challenges**

The Indian Animation and Gaming industry holds a large potential. However, it faces numerous challenges in realizing the potential:

- Significant talent crunch due to limited training institutions, non-standardized curriculum and lower awareness among students for animation and gaming as a career option.
- Cultural Constraints: Animation as an entertainment genre in India is still restricted to kids. Similarly, gaming as an entertainment option is not considered favourable in India.

- Lack of government support in terms of grants, rebates or tax treaties: This limits the cost advantage that Indian players offer compared to other outsourcing destinations, thus limiting the growth of the industry.

## **2. Animation and Gaming Industry – Overview**

### **2.1 Scope of the Industry**

Animation is a process under which different drawings of imagined action (called frames) representing a slight shift in the positioning of content are recorded in such a way that it gives an illusion of motion when shown at a predetermined rate. In a nutshell, it is a time sequencing of frames to create a simulation of continuous movement.

‘Animation and Gaming industry’ includes

- Animation Entertainment for Theatrical Movies, TV Broadcast, Advertising, Direct-to-DVD Movies / Shows
- Visual Effects for Entertainment
- Content Development for e-Learning / Training for Special Segments
- Gaming

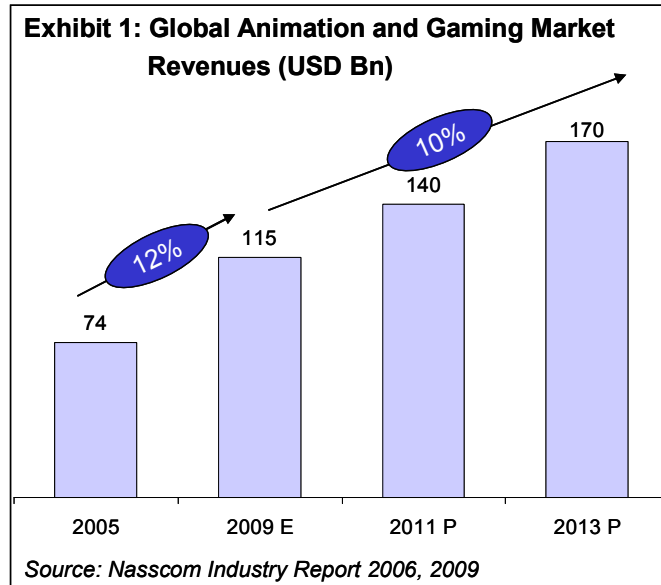
‘Animation industry’, when referred to, in this report, includes all of the above, except Gaming.

### **2.2 Context**

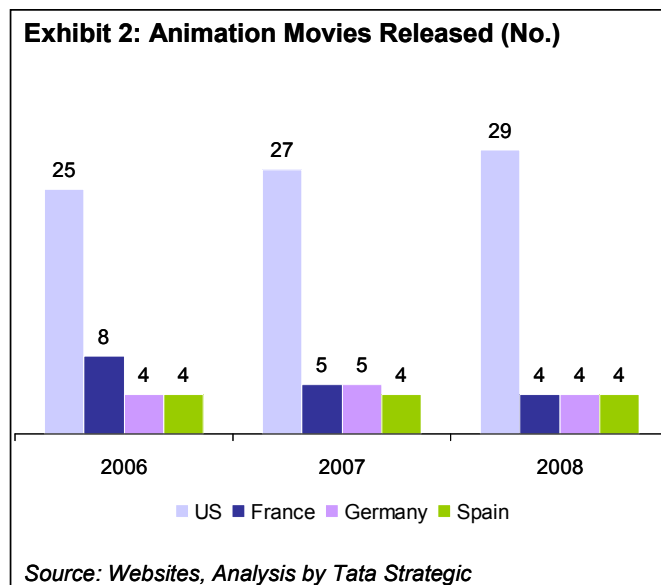
Indian animation and gaming industry, comprising pre-dominantly small and mid-sized enterprises is not a well-researched or well-documented industry. We have analysed information available from India’s industry body NASSCOM (National Association of Software and Services Companies), recent developments of relevant organizations and used certain broad indicators (Domestic and Overseas) in this report to assess the industry.

### 2.3 Global Animation and Gaming Industry

The global animation and gaming industry has grown from USD 74 billion in CY<sup>1</sup> 2005 to an estimated USD 115 billion in CY 2009, at a rate of 12% p.a. The industry is expected to continue its growth, at a rate of 10% p.a. to reach USD 170 billion by CY 2013.



The US is the most significant market for animation in the world.



1 Calendar Year

Major markets for gaming are US, Europe and Japan; US again being the largest gaming consumer. However, China is the fastest growing market for gaming, primarily due to the

**Exhibit 3: Revenue Contribution (%) for Leading Gaming Players**

| <b>Game Publishers / Developers</b> | <b>Nintendo<sup>1</sup></b> | <b>Electronic Arts (EA)<sup>1</sup></b> | <b>Activision Blizzard<sup>2</sup></b> |
|-------------------------------------|-----------------------------|---|--|
| <b>Geographies</b>                  |                             |   |  |
| <b>US</b>                           | 43.2%                       | 57%                                     | 50%                                    |
| <b>Europe</b>                       | 39.5%                       | 38%                                     | 43%                                    |
| <b>Japan</b>                        | 12.9%                       | 5%                                      | 7%                                     |
| <b>Rest of Asia</b>                 | 4.4%                        |   |  |

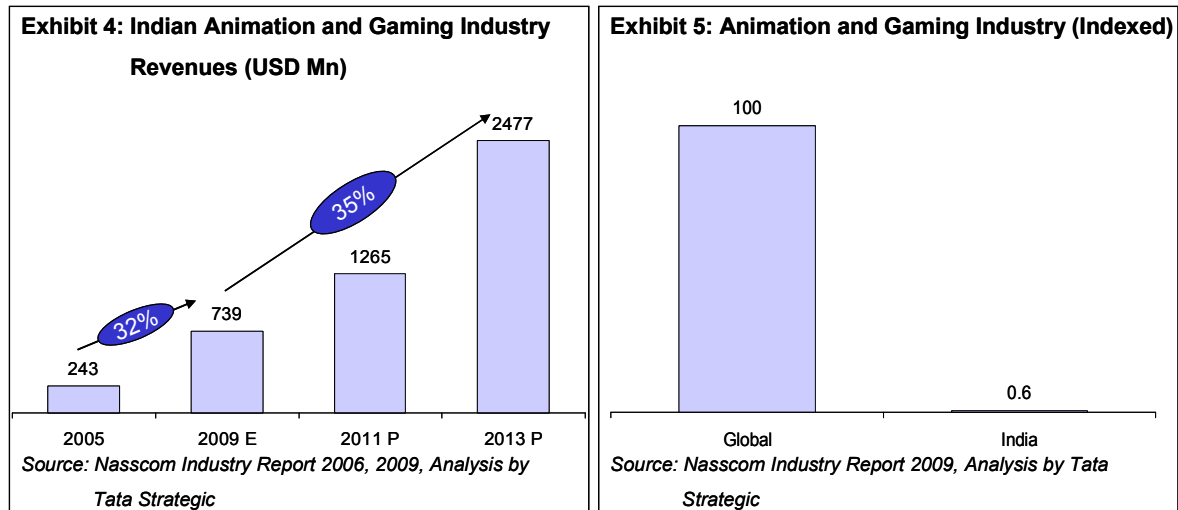
Note : 1. FY 2009 2. CY 2008

Source: Annual Reports, Analysis by Tata Strategic

rapid growth of online gaming. Most of the animation and gaming intellectual properties originate from these countries. While content development and pre-production activities are generally done in the originating country itself, it is the labour-intensive activities, which are outsourced to other countries.

## 2.4 Indian Animation and Gaming Industry

The Indian Animation and Gaming industry has grown from USD 243 million in CY 2005 to an estimated USD 739 million in CY 2009 at a rate of 32% p.a.

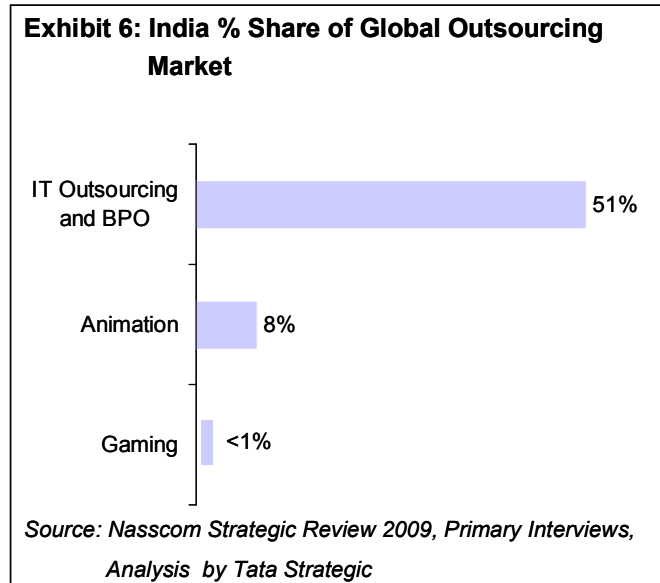


In spite of the fast paced growth, Indian animation and gaming industry continues to be a miniscule 0.6% of the global industry (Refer Exhibit 5), thus holding a large potential for growth. The Indian industry is expected to continue its growth at 35% p.a. during 2009-2013, thus reaching a market size of USD 1.3 billion by 2011 and USD 2.5 billion by 2013.

The Indian animation and gaming industry derives its revenues from both domestic and outsourcing work. Outsourcing is the major contributor of revenue. Work done by the Indian studios for the international production houses or work done by game development companies for international game publishers are examples of 'outsourcing work'. The domestic share of animation market is estimated at ~ 30% (CY 2009). India caters primarily to US and UK for the outsourcing work for animation.

The success of Indian IT/ITES industry and the inherent advantages of outsourcing make a case for India as an outsourcing destination of choice to production houses / game developers the world over. In spite of this, India's share of the outsourced work is very low. Industry experts estimate that India's share is 8% for animation and as low as 1% for gaming. Major Asian countries like Philippines, Taiwan, South Korea and China are the preferred outsourcing destinations for 2D Animation, Canada and UK are the leaders in 3D Animation. For gaming, China is the most preferred destination followed by other Asian destinations.

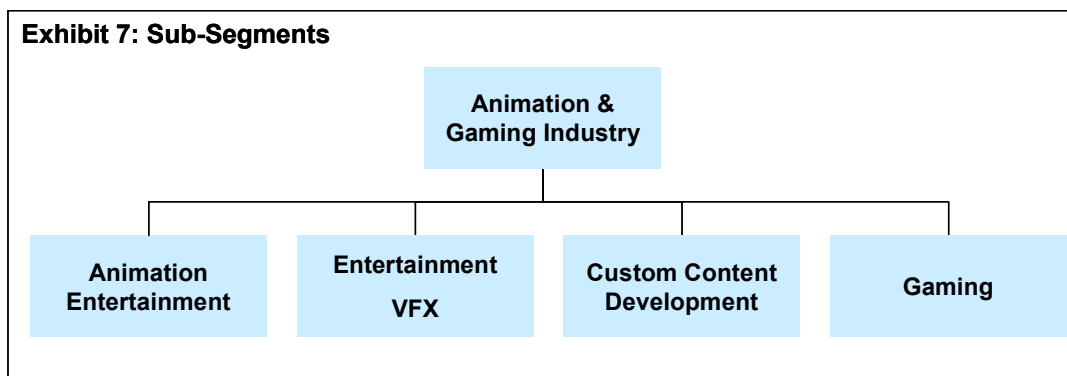
Indian outsourcing share for animation and gaming industry is miniscule compared to the Indian IT and BPO industry, which has garnered a significant share of ~51% of the



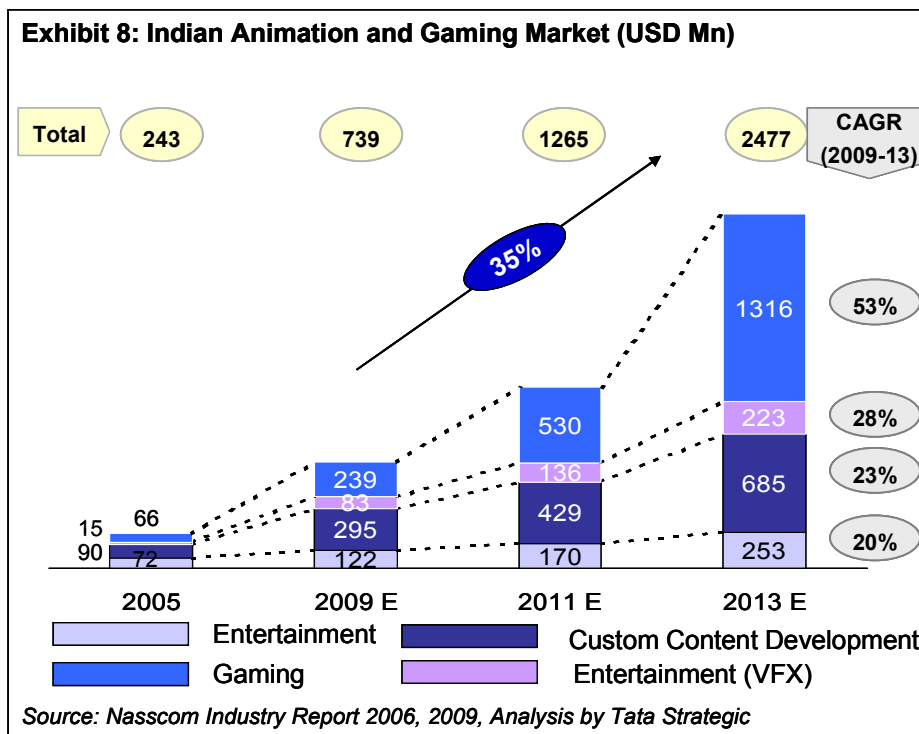
global IT and BPO outsourcing market. The above shows the immense potential that the Indian animation and gaming industry holds, especially from overseas outsourcing.

### 3. Indian Animation and Gaming Industry : Key Segments

The Indian Animation and Gaming industry has four key segments – Animation Entertainment, Entertainment VFX, Custom Content Development and Gaming.

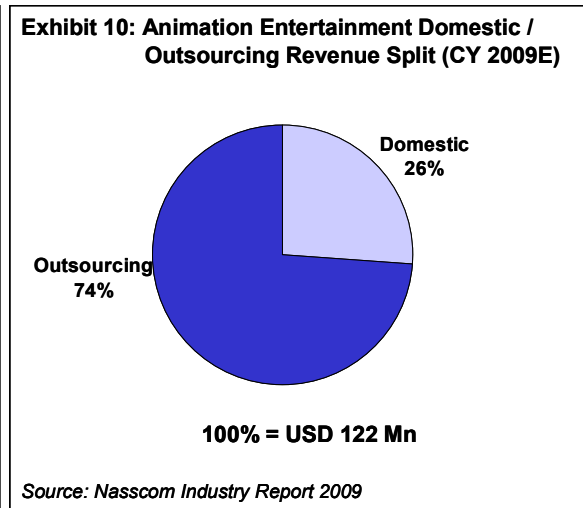
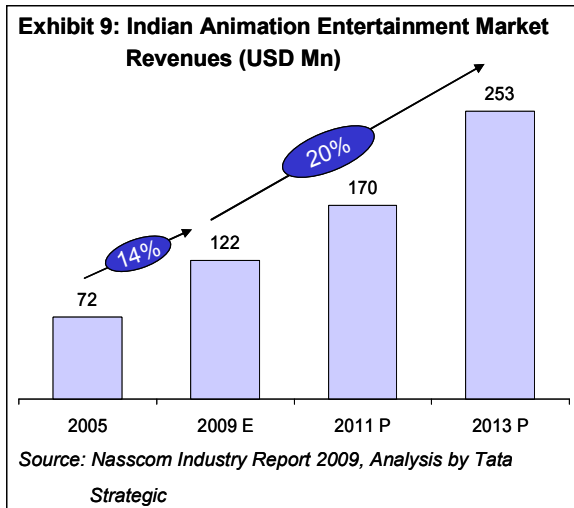


Custom Content Development holds the highest revenue share (51%) among all segments. This segment comprises development of custom content catering to many segments (Corporate, Higher Education, Specific segments viz. Aviation, Medical etc.), multimedia and web-designing services. This segment is estimated to show a CAGR of 23% for the period 2009 to 2013. Animation Entertainment is the next largest, accounting for 21% of the overall revenues. Animation entertainment comprises animated content for movies, TV broadcast, TV advertising and direct to DVD. This segment is expected to grow at 20% p.a. from 2009 to 2013. Entertainment VFX is estimated to be ~ USD 83 Million. It is expected to continue its growth at 28% p.a. from 2009 to 2013. Gaming in India is estimated at only ~ USD 239 Million. However, this segment is expected to show a high growth of 53% p.a. from 2009 to 2013. This segment comprises Console Gaming, Mobile Gaming, PC and Online Gaming.



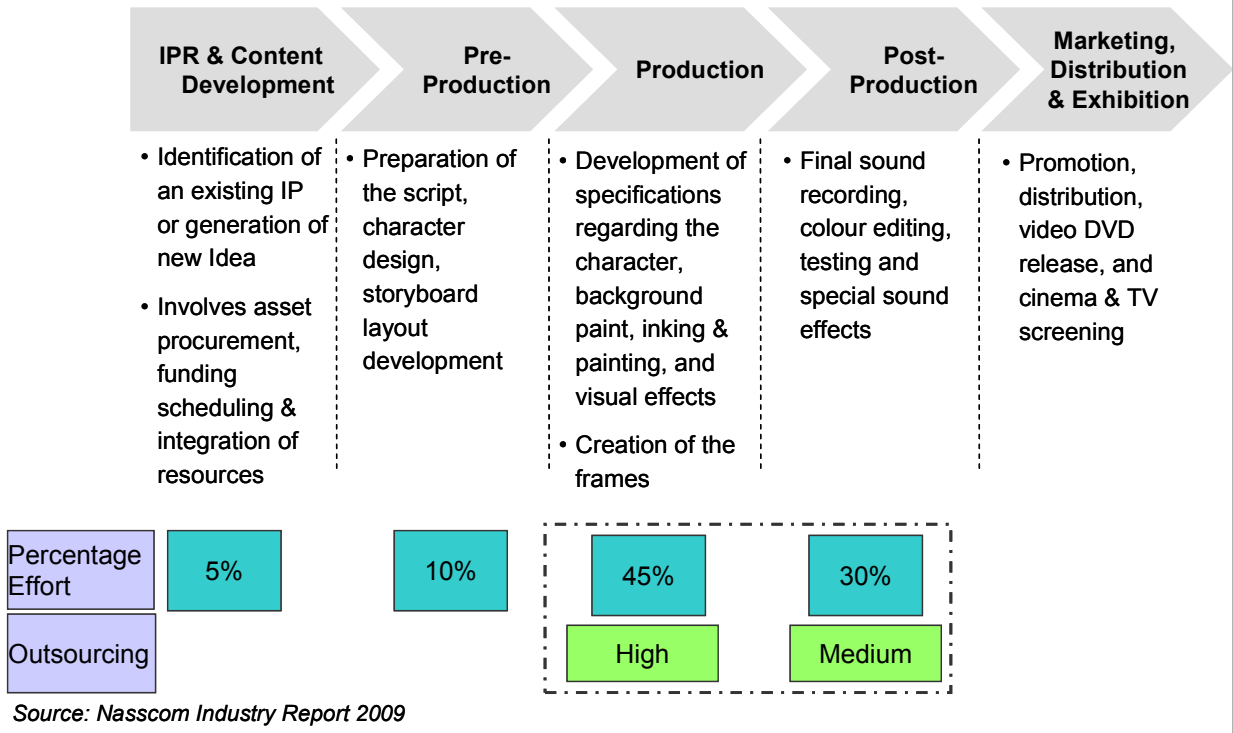
#### 4. Animation Entertainment

The Animation Entertainment segment in India is estimated at USD 122 Million (CY 2009) and is expected to show a CAGR of 20% (2009-2013) to reach USD 253 million by 2013.



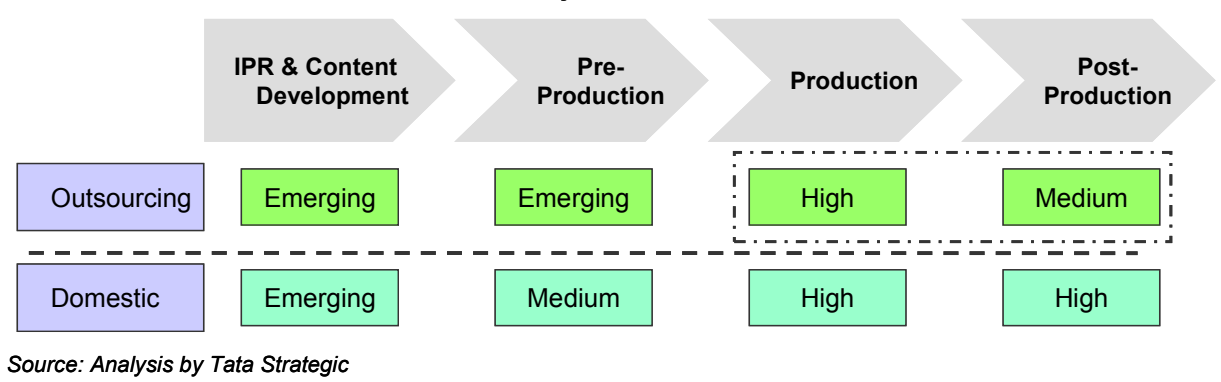
74% of the animation entertainment work in India is outsourcing work for overseas clients. It is only 26% of the overall animation entertainment in India, which is for domestic clients.

**Exhibit 11: Animation Entertainment Value Chain**

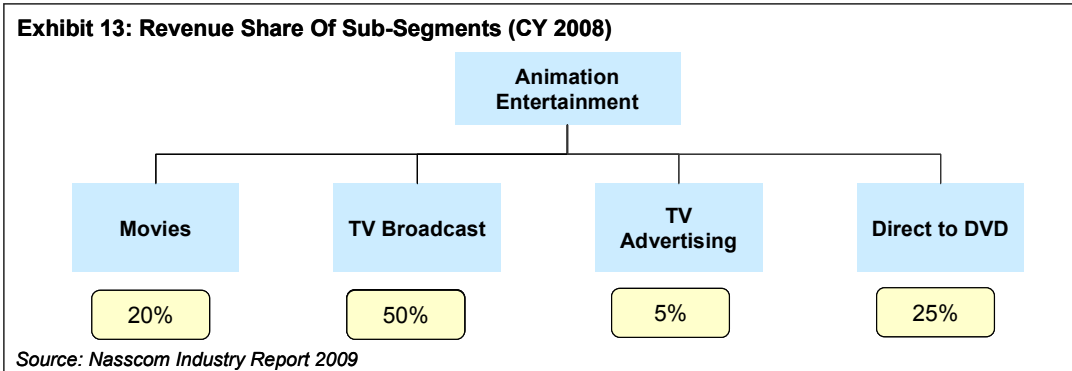


Most of the outsourcing work in India relates to the labour-intensive production and post-production activities. Production is the dominant activity. Content Development and pre-production activities are nascent in India, both for the domestic and the outsourcing market. However, these activities are seen to be emerging as Indian companies move up the value chain (Refer Exhibit 12)

**Exhibit 12: Presence of Indian Animation Players Across the Value Chain**



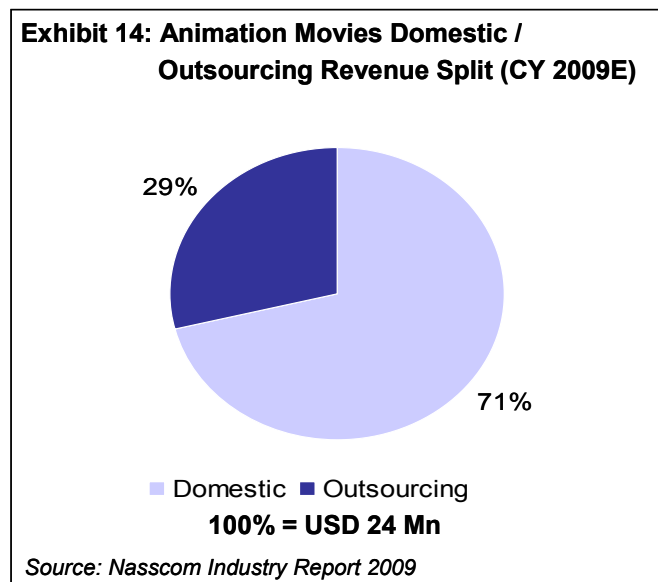
The Indian animation entertainment industry comprises four sub-segments: Movies, TV Broadcast, Advertising and Direct to DVD.



The TV Broadcast segment is estimated to be the largest one amongst all the sub segments at a percentage share of 50%, followed by Direct to DVD at 25%, movies at 20% and TV advertising at 5% of the overall entertainment revenues.

#### 4.1 Movies

The Animation Entertainment movies segment is estimated at USD 24 million for 2009. Domestic market contributes a significant USD 17 million (71%) to this USD 24 million.

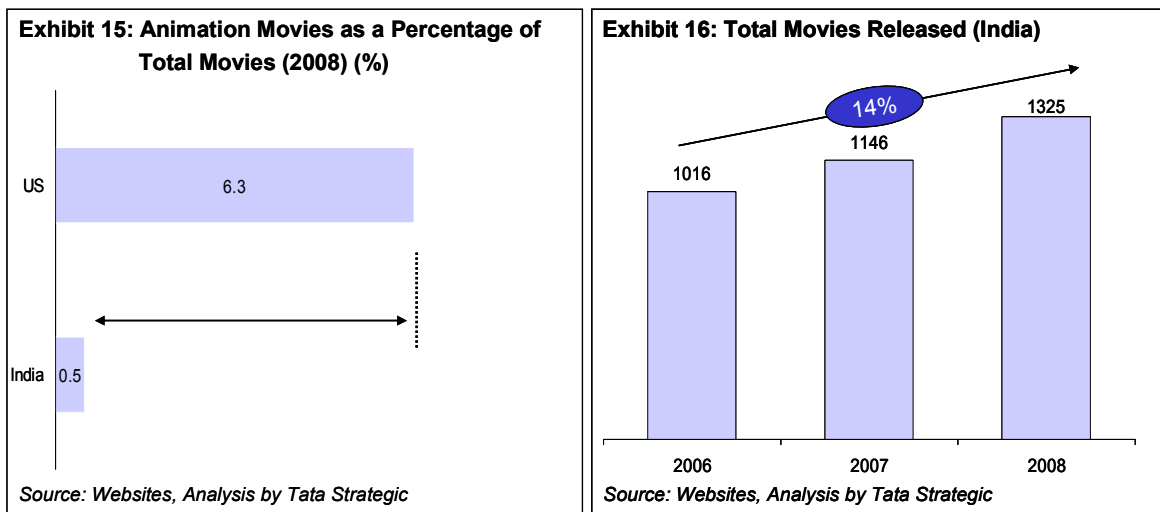


#### 4.1.1 Growth Indicators

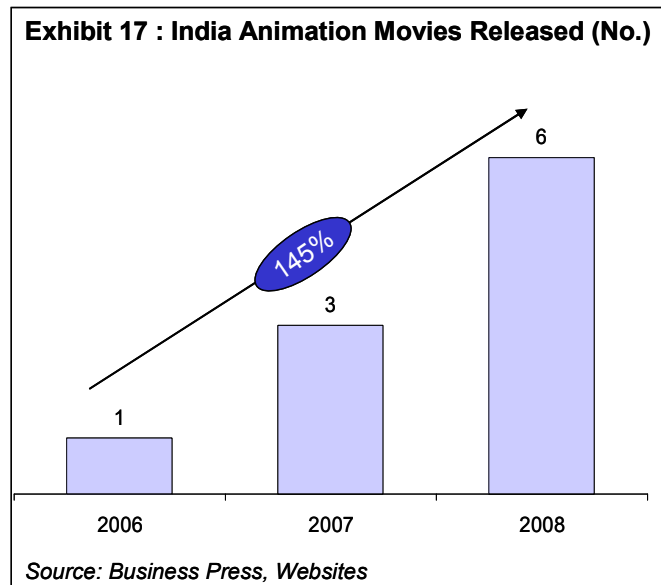
Animation movies segment is expected to show significant growth on account of demand from both domestic market and overseas.

##### Domestic Demand

Low % of animation movies in India currently and future plans of the Indian film industry indicate high growth potential for animated movies in India. <1% of the movies released in India are animated in nature. This is miniscule compared to the US, where animated movies comprise ~6.3% of the overall no. of domestic releases (*Refer Exhibit 15*).



Moreover, the no. of domestic film releases in India has been growing at a healthy 14% p.a. (FY 2006 to FY 2008) (*Refer Exhibit 16*) and is expected to continue this trend. This growth in overall movies, along with the significant scope for increase in % of animated movies signifies the large potential for animation movies in India. This is further validated by the fact that there has been an increase in the number of animation movie releases from 2006 to 2008 (*Refer Exhibit 17*).



The Indian film industry announced 85 animation movies in 2008, with almost all the major production houses trying to jump on the bandwagon. However, with the economic downturn and low success of the non mythology animation movies released last year, many announced projects have been shelved. Despite this, the entertainment industry is expected to see a significant increase in the number of animation movie releases. Compared to 6 such movie releases in 2008, there are 28 movies in the pipeline and are in different stages of conceptualization / production. Out of these, 15 movies are expected to get released in the next two years. Moreover, Comics' players' keen-ness to monetize their existing characters has resulted in their entering the animation movie market.

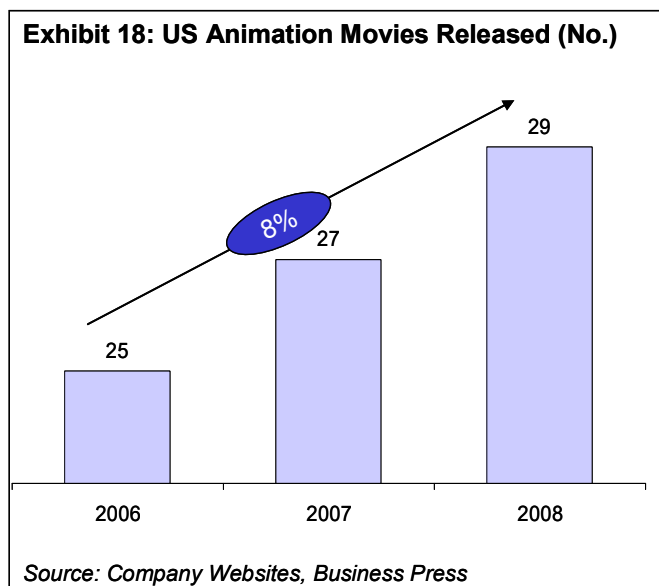
- Indian publishers like Diamond, Raj, Vimanika and Chandamama have announced plans to enter the movie space with their famous comic characters
- Toonz Animation India Pvt. Ltd is producing a full-length animated feature film based on a prime property from the library of Chandamama for an estimated amount of USD 4.5 million
- Filmmaker Anurag Kashyap has bought the rights of Raj Comics' popular character – Doga.

### **Demand from Overseas**

Overseas demand can be attributed to two factors: Increased animated content overseas and increase in work outsourced to India.

- **Increased animated content overseas**

Animation movies released in US have increased at 8% CAGR from 2006 to 2008.



This trend is expected to continue, considering the success of these animation movies. This success is reflected in the high worldwide box office earnings of these movies (Refer Exhibit 19).

**Exhibit 19: International Animation Movies – Report Card**

| Animation Film      | Year of Release | Total Cost (USD Mn) | Worldwide Box Office Earnings (USD Mn) | Gross Profit (USD Mn) |
|---------------------|-----------------|---------------------|--|-----------------------|
| <b>Finding Nemo</b> | 2003            | 94                  | 866                                    | 772                   |
| <b>Shrek 2</b>      | 2004            | 150                 | 920                                    | 770                   |
| <b>Madagascar</b>   | 2005            | 75                  | 533                                    | 458                   |
| <b>Cars</b>         | 2006            | 70                  | 462                                    | 392                   |
| <b>Shrek 3</b>      | 2007            | 160                 | 799                                    | 639                   |
| <b>Wall E</b>       | 2008            | 180                 | 533                                    | 353                   |
| <b>UP</b>           | 2009            | 175                 | 711                                    | 536                   |

Source: Websites, Analysis by Tata Strategic

This whopping success and profits of animation movies overseas are expected to propel production houses to produce more animated movies. Movies in the pipeline for the two biggest animation houses in the world – Disney Pixar and DreamWorks proves the inclination of production houses towards greater animation movies: Disney Pixar released 8 movies in the last two years. It plans to increase the number to 13 movies

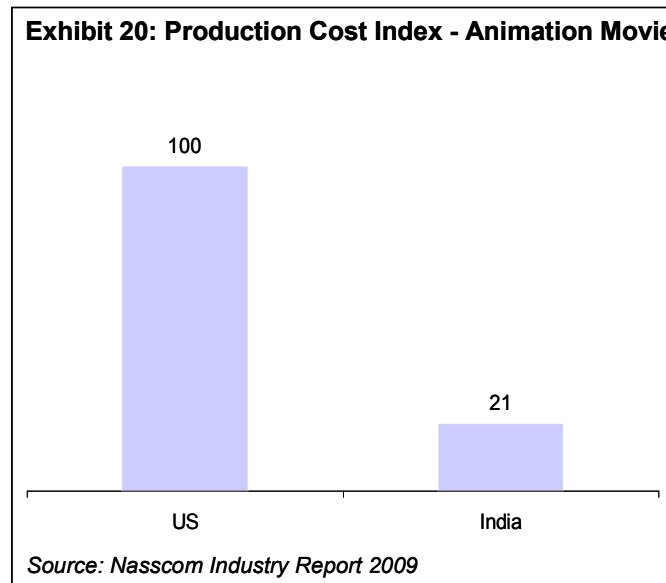
from 2009-2012. Similarly, DreamWorks plans to produce 5 movies every two years from 2009 compared to 2 movies a year previously.

Moreover, as seen in Exhibit 19, budgets for the animation movies have increased considerably from the 2006 levels. However, in view of the recent economic downturn, the budgets of animation movies are not expected to increase, rather stay at the current levels.

- **Increase in work outsourced to India**

Higher focus on 'Cost Savings' coupled with India's cost competitiveness and demonstrated capability to deliver quality work is expected to drive increase in work being outsourced to India by production houses.

The economic downturn has put cost on the top of the priority list of the production houses. Production houses are cutting their costs by outsourcing more work to Asian countries which offer significant 'Cost Savings'. India offers significant cost savings (> 75%) to production houses overseas (*Refer Exhibit 20*). Nasscom estimates that the cost of production of a full length animated movie in India is USD 13 million to USD 22 million,



where-as it costs USD 71 million to USD 106 million to produce the same movie in US. Moreover, the Indian players have showcased that they can deliver quality work, at par with their other Asian counterparts. Production houses overseas have recognized this capability of the Indian players, which is evident from the numerous co-production deals between Indian and overseas players.

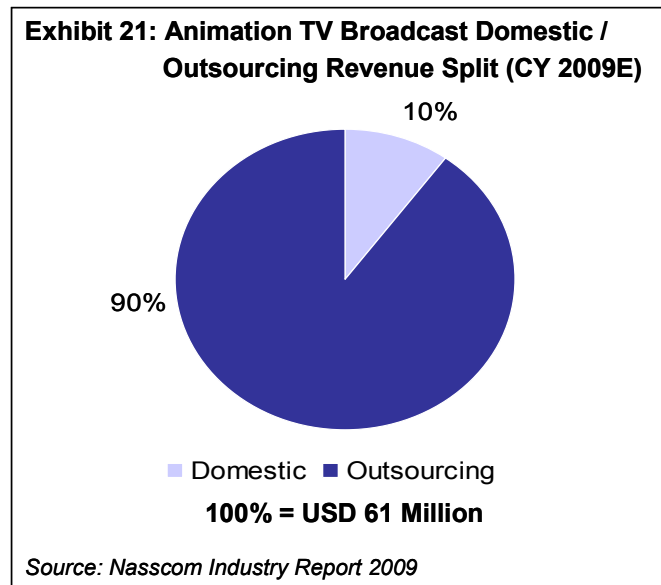
The following co-production deals have been announced in the recent past:

- Three-movie co-production deal between Crest Animation Production and Hollywood film entertainment studio Lionsgate
- Toonz Animation and South American studio, Illusion Studios
- Two-movie deal between DQ Entertainment and Paris based entertainment company MoonScoop

As the perceived capability of Indian players grows, the percentage of outsourcing to India is expected to go up.

## 4.2 TV Broadcast

The work done by animation companies for TV Broadcast is estimated at USD 61 million for 2009. More than 90% of the animation entertainment TV Broadcast accrues from outsourcing.



### 4.2.1 Growth Indicators

This segment is expected to grow on account of demand from both domestic and overseas markets.

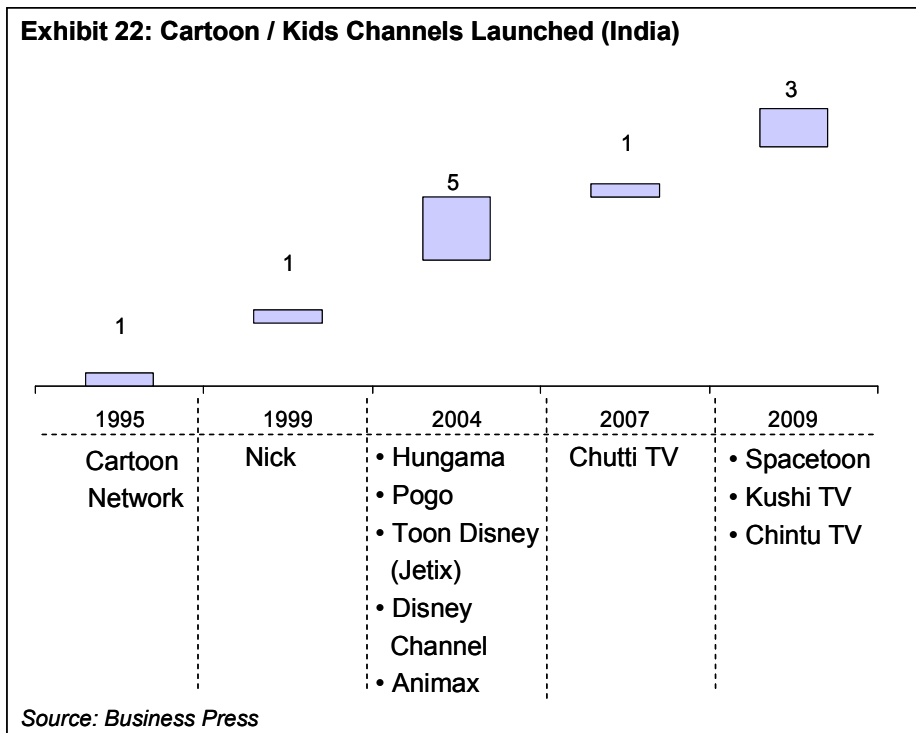
#### Domestic Demand

The increase in number of kids' channels and the resulting increase in demand for local content are expected to drive the demand from the domestic market

- **Increasing No. of Kids Channels**

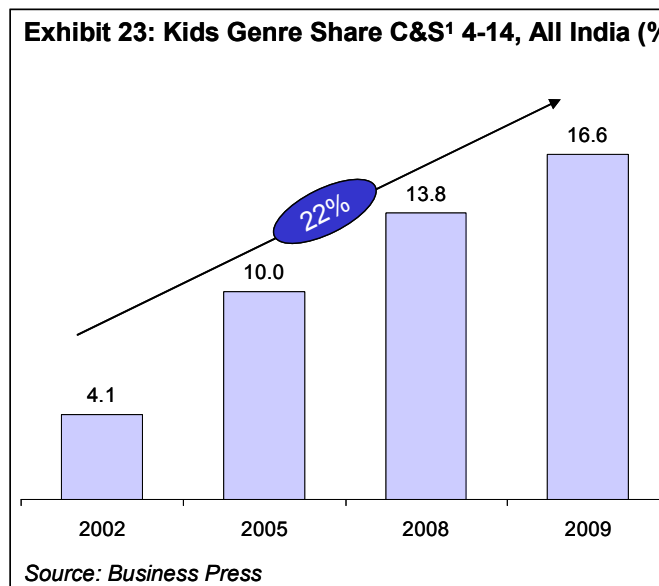
Cartoon Network was the first one to enter the Indian kids TV broadcast market in 1995. Since then, there has been a significant increase in the number of kids channels launched in India.

**Exhibit 22: Cartoon / Kids Channels Launched (India)**



The share of kids' genre in overall viewer-ship has steadily increased from 4.1% in 2002 to reach 16.6% in 2009 (Refer Exhibit 23). Sustained increase in viewer-ship would drive

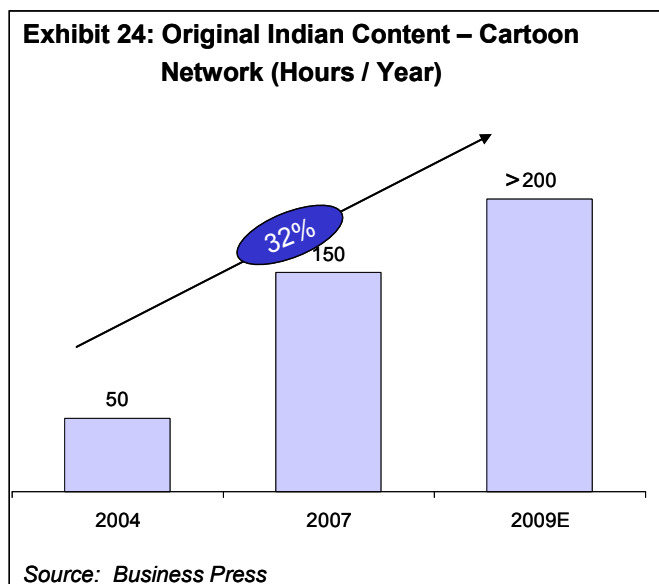
**Exhibit 23: Kids Genre Share C&S<sup>1</sup> 4-14, All India (%)**



demand for content for kids, especially animated content. Moreover, Indian comics players are planning to launch their own cartoon / kids channels. For example, Diamond comics has already announced plans to launch a TV channel targeted at the 4 to 14 year age group with both animation and live action content.

- **Increased Demand for Original Indian Content**

Demand for original Indian content by the cartoon / kids' channels has been increasing. For example, Cartoon Network– the leader in the cartoon channels' space has increased its original Indian content from 50 hours in 2004 to more than 200 hours in 2009.



Similarly, Nickelodeon, inspired by the success of the mythological serial 'Little Krishna', is looking to expand its local content. The same trend is expected to be followed by other channels as well. Growth in original local animation content is expected to get a further boost from Indian comics players like Diamond, Raj, Vimanika and Chandamama who are looking to monetize their content libraries by creating market presence in TV programs. Large production houses are also buying rights from these publishers to produce animated TV series: Big Animation Pvt. Ltd has bought rights from publishers of Chandamama to produce an animated TV series. Moreover, a significant number of non-theatrical movies are in pipeline for TV broadcast (*Refer Exhibit 25*), some of the key examples being Kul Veera, Sulochana etc.

**Exhibit 25: Non-Theatrical Movies Produced / Under Production (India)**

| Film                     | Production House          | Broadcaster   |
|--------------------------|---------------------------|---------------|
| Kul Veera                | Graphiti Multimedia       | Turner – CN   |
| Sulochana                | Miditech                  | Turner – CN   |
| Johny goes to Bollywood  | Famous House of Animation | Turner – CN   |
| The Firebirds            | Splash Communications     | Turner – CN   |
| Guide to the only planet | Shoot at Sight            | Turner – CN   |
| Bakland and Ravan        | DQ Entertainment          | Turner – Pogo |

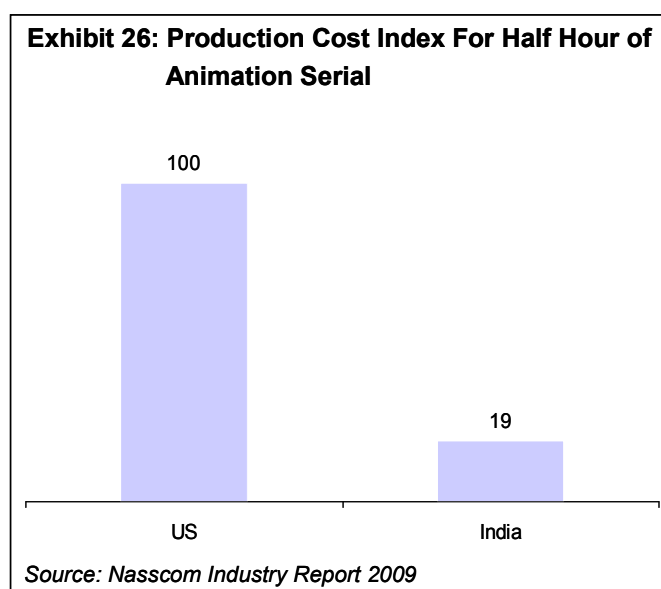
Source: Research by Tata Strategic

## **Demand from Overseas**

Increased focus on cost savings in view of the economic downturn and improved capability of Indian animation players are expected to fuel the demand for TV Broadcast animation from overseas.

- **Cost Arbitrage**

Similar to animated movies, India offers significant cost savings for production of animated TV serials. Production in India may offer savings to the extent of 78% to production houses overseas.



- **Percentage of work outsourced to India**

The proven capabilities of Indian players, with on-time delivery, excellent quality work have brought them at par with other Asian outsourcing hubs. The Indian players are now slowly moving towards the higher end of the animation TV broadcast value chain as well. Capability of the Indian players is also being increasingly recognized, as is evident from the increasing 'Co-production' deals:

- DQ Entertainment has been involved in over 30 global Co-Production deals with many leading companies like BBC UK, American Greetings Properties, USA, M6, and France and alike.
- Toonz Animation's co-production deal with Spectra Animation of Canada to co-produce 52 episodes of a Malayalam animated TV serial 'Paddy's Pages'.

- Sanraa Media's deal with UK based Endemol for the co-production of animated series – The 99.

Improved perception of the Indian animation players' capability is expected to lead to greater percentage of outsourcing to India.

### 4.3 TV Advertising

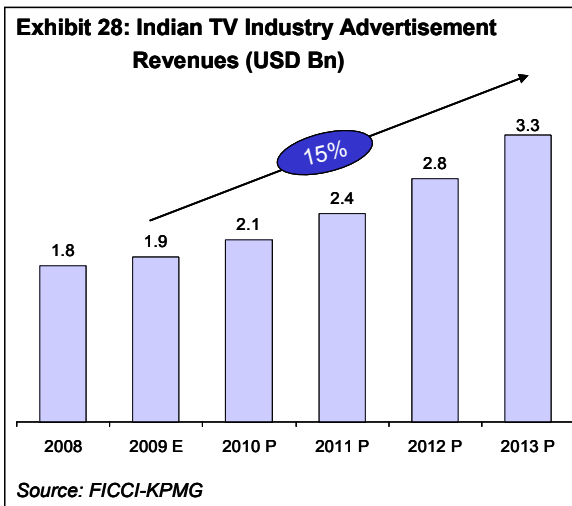
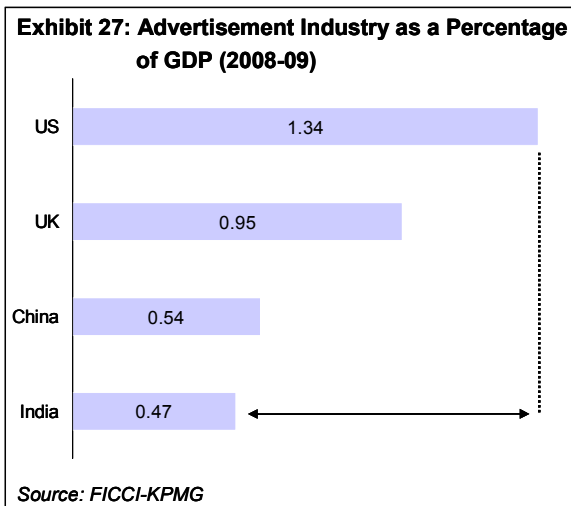
Animation Players are projected to have earned revenues of USD 6 million through work done for TV Advertisers for 2009. Most of these revenues accrued from the domestic market.

#### 4.3.1 Growth Indicators

Increasing advertising spend of the Indian companies coupled with growing popularity of animated characters is expected to drive the domestic market. Demand from overseas is also expected to start picking pace as the Indian animation players gain experience at animation for commercials.

#### Domestic Demand

Indian TV advertising spend is minuscule (0.47% of the GDP) as compared to the US (1.34%) or UK (0.95%), thus holding large potential for growth.



The Indian TV advertisement industry size is expected to increase from USD 1.9 billion in 2009 to USD 3.3 billion in 2013 at a CAGR of 15%. As the advertising industry grows, it is expected that the share of animation driven advertisements will also grow. Growing popularity of animated characters in Indian advertising illustrates the point: Animated

advertisements strike a better chord with the target group of children and young adults, can be easily understood and related to by audiences irrespective of language and cultural barriers. Some of the recent advertisements in India that have used animated characters – “Daddu” (Mentos), “Chinta Mani” (ICICI prudential), “Sukhi and Dukhi” (Tata AIG), have been quite popular. Moreover, the animation commercials also result in significant cost savings compared to advertisements with celebrities, making another point for their increased usage.

### **Demand from Overseas**

As of now, the Indian animation players do not get any significant work from overseas for advertising. However, increasing usage of animation in TV advertising in India is providing the Indian players with the required experience and capabilities. As the overseas production houses and advertising agencies face cost pressures and recognize the capabilities of Indian players, advertising outsourcing deals for India are expected to happen over a period of time.

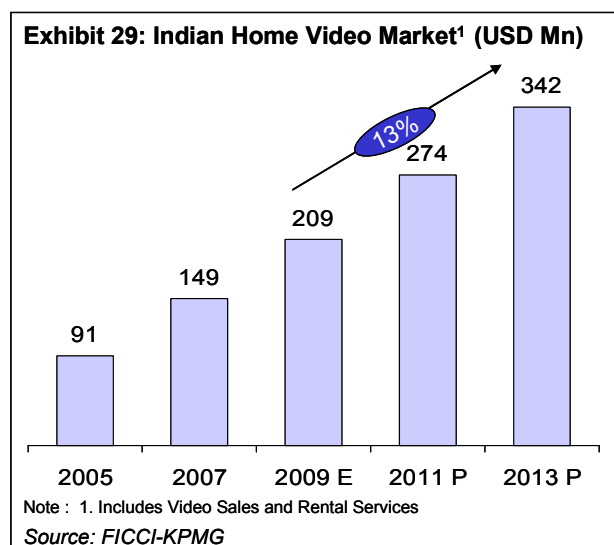
### **4.4 Direct to DVD**

Animation Entertainment Direct to DVD is estimated at USD 31 million for 2009. Domestic market contributes a miniscule 10% (USD 3 million) to this USD 31 million.

#### **4.4.1 Growth indicators**

### **Domestic Demand**

The Indian home video market has grown at 23% p.a. for 2005-2009.



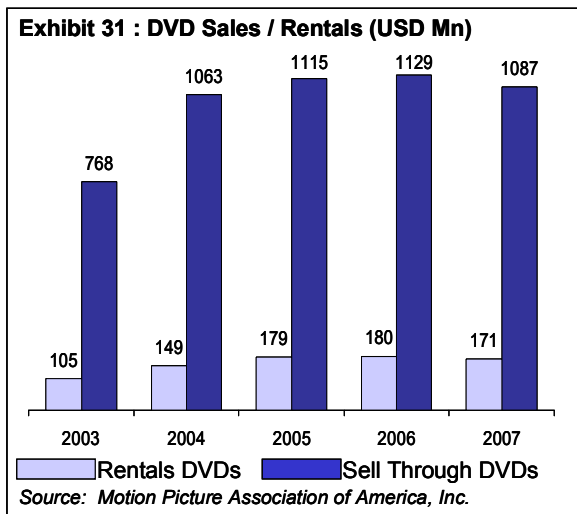
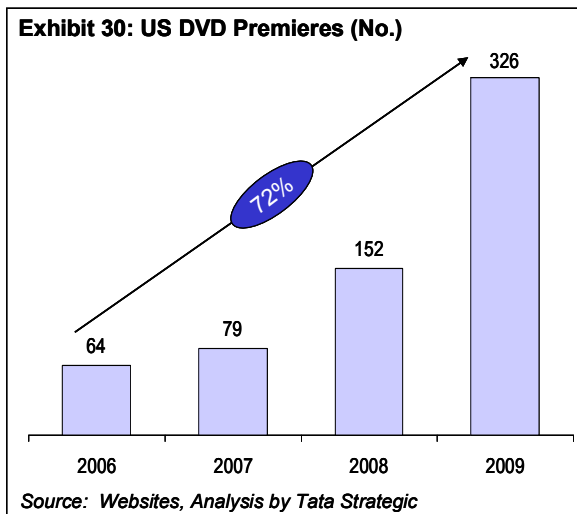
The increase is expected to impact demand for animated content also. There is increase in retail reach of DVDs in India. Moreover, falling prices of CDs / DVDs is leading to increased affordability. Improved penetration and affordability are expected to drive the growth of the Indian home video market at 13% p.a. from 2009-2013. This trend is expected to encourage greater production of direct-to-DVD content in India.

### **Demand from Overseas**

Direct-to-DVD animation content in overseas markets and the extent of outsourcing primarily determine the demand for animation services for Direct to DVD in India.

- **Lower Direct-to-DVD (DVD Premieres) Overseas**

Direct-to-DVD (DVD Premieres) in the US has seen a very high growth of 72% from 2006 to 2009. However, the DVD sales / rentals market has stagnated and is showing a downward trend from its highs of 2005-06.

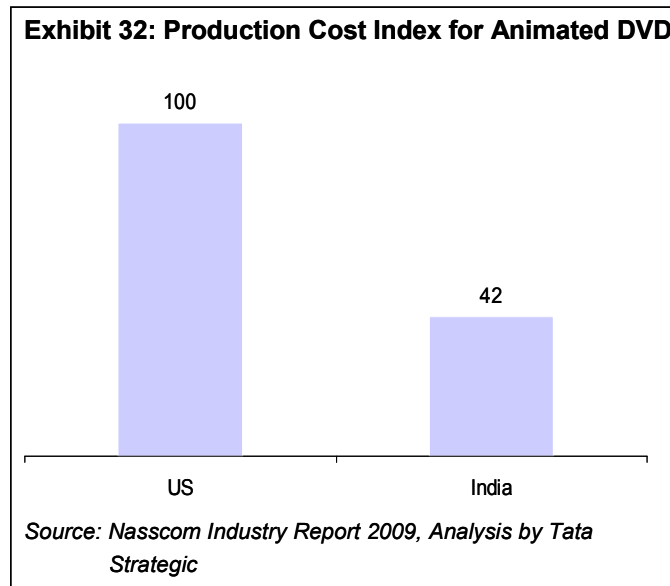


However, the advent of new channels like on demand television and online distribution is expected to keep up the demand for DVD Premiere.

- **Increased Outsourcing**

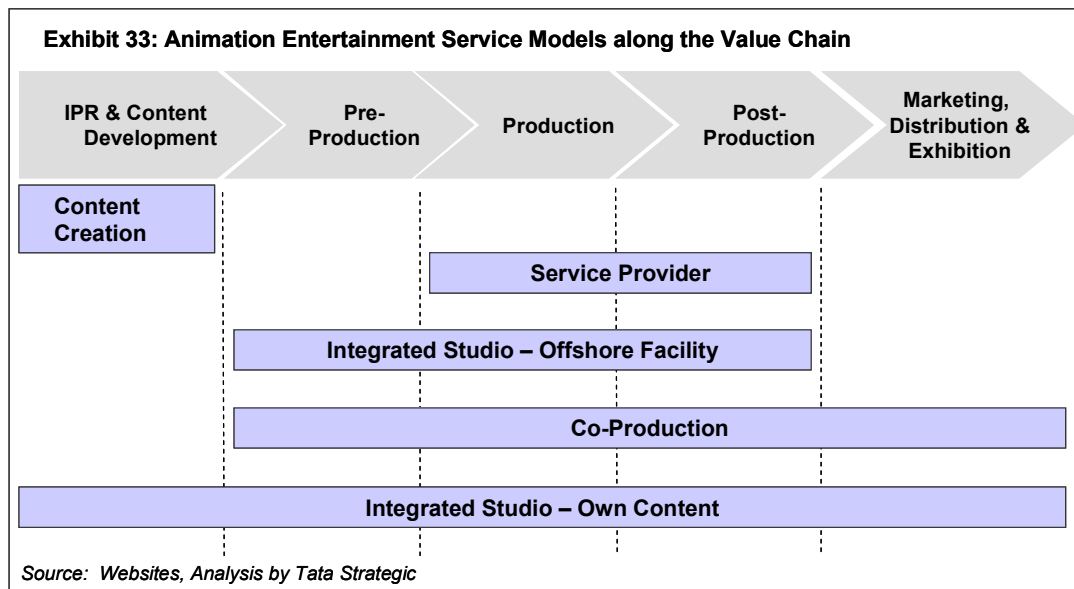
The cost differential of producing Direct-to-DVD animated content between US and India is very high. Nasscom estimates that it costs USD 3 million to USD 5 million in India for an animated DVD compared to USD 9 million to USD 12 million in the US (*Refer Exhibit 32*). As discussed earlier, the increased focus on cost savings is expected to lead to greater outsourcing to Asian countries. As capabilities of Indian players get recognized

by international studios, Indian players would gain a significant share of the outsourcing opportunity in the Direct to DVD Segment.



#### 4.5 Service Models

Players in the animation entertainment industry in India follow various service models. Every player in the industry follows one or more of these service models.



| Exhibit 34: Animation Entertainment Service Models |   |
|--|---|
| Service Model                                      | Description   |
| Integrated Studio – Own Content                    | State of the art units that enable production and development of all aspects of an animation film, from conceptualization to post-production stage.   |
| Integrated Studio - Offshore Facility              | Indian Producer: Content / IP belongs to the Indian producer<br>Foreign Producer: Content / IP belongs to the foreign producer  |
| Service Provider                                   | Indian entities provide services for the labour intensive activities which are outsourced to them.  |
| Co-Production                                      | Animation companies in India are moving up the value chain, from providing piece-meal outsourcing services to exploring the co-production model. Typically, the Indian studios bring the manpower and infrastructure to develop the animated content and the international producer will finance the marketing, distribution etc. |
| Content Creation (IP)                              | Full ownership of content, share in collections, royalty for all licensing and merchandizing  |

The animation entertainment service models lie along different parts of the value chain. Depending upon the service model that a player adopts, he can be present across the value chain or in certain specific parts of it. Players also adopt multiple service models: for e.g. the same player may operate on ‘service delivery model’ and ‘co-production’ model, varying from one deal to the other.

#### 4.6 Revenue Models

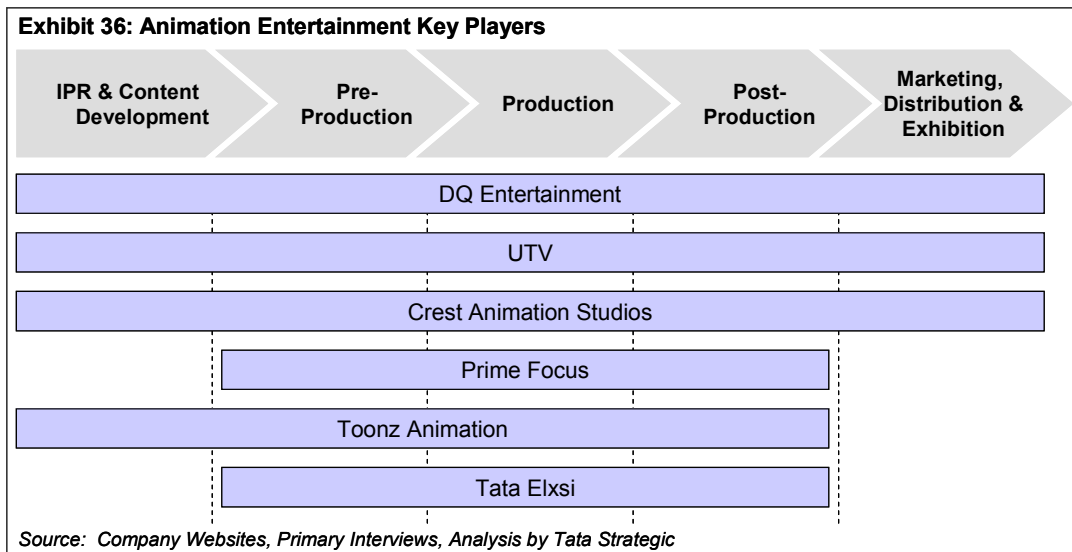
The players in the animation entertainment industry can realize revenues from different sources depending upon the model that they adopt. The different revenue models for the entertainment industry are:

| Exhibit 35: Animation Entertainment Revenue Models |   |
|--|---|
| Service Model                                      | Revenue Model   |
| Co-Production                                      | <b>Revenue Sharing</b><br>Co-production Model: Changes have been witnessed over a period of time. Initially the revenue share was based on territorial rights with Indian studios getting continental rights which generally generate less revenue. Currently, co-production deals are being struck on a global revenue sharing model.  |
| Content Creation                                   |   |
| Service Provider                                   | <b>Work for Hire</b><br>Specific activities along the value chain, for example, production, and post production are outsourced to Indian players. Revenues for these activities are generally realized on a per hour basis. As majority of the outsourcing happens in the production part most of the Indian players realize revenue on this model only.<br><br>An integrated studio offshore facility Refers to a captive of a foreign producer. |
| Integrated Studio – Offshore Facility              |   |
| Integrated Studio – Own Content                    | <b>Revenues from Multiple Streams</b><br>The integrated studios who own the IP and produce local content can realize revenues through various streams. These revenues can be from box office sales, TV and DVD/home video, merchandizing, and music rights.   |

As players adopt multiple service models, they would also have multiple revenue streams.

#### 4.7 Animation Entertainment – Key Players

The Indian animation entertainment industry is a fragmented industry, with the top 10 players contributing less than 20% of the industry revenues. Moreover, they compete along the different stages of the value chain. There are players who are present across all the stages of the value chain and there are others who provide services during specific stages of the value chain only. Some of the key players have been listed below, along with their presence in the value chain:



#### 4.8 Animation Entertainment Challenges

While the Indian animation industry holds a large potential in terms of both domestic and overseas demand, the industry needs to overcome significant challenges to realize this potential:

- **Lack of Skilled Manpower**

Skilled man-power is the key for producing animated content. The Indian animation industry is constrained on the talent supply side. As per Nasscom Industry Report 2009, manpower requirement for animation in India is expected to grow from 17,500 in 2009 to 29,500 by 2012. However, there are not enough resources available in this industry, and those who are available are not readily employable. This is primarily due to the following reasons:

- Low awareness of animation as a career option: This is especially true of Tier-2 and Tier-3 cities in India.
- Existence of only a handful of institutes that provide relevant courses / degrees in animation and gaming, the leading institutes in this domain being National Institute of Design, Toonz Academy, Maya Academy, Arena Animation.
- Lack of standardized and quality curriculum: Post-graduate / Degree / diploma courses in animation are few in no. in India. Curriculum is not up to the international standards, thus decreasing the employability of students in India.

- **Lack of Funding**

Animation Entertainment industry in India pre-dominantly comprises small and medium sized players operating across similar / different parts of the value chain. Currently, only 1 out of 5 movies in India are successful, making the production of Animation films very risky. Players are not able to raise the required finance.

- **IP Protection**

Rampant piracy of DVD-Based videos within the distribution channel eats into a major share of revenues for the producers and distributors. This along with slack IP laws and weak enforcement discourage animation players in India to produce their own IP. Moreover, it also discourages International Players, who are generally very protective of their IPs, to outsource to India.

- **Cultural Constraint**

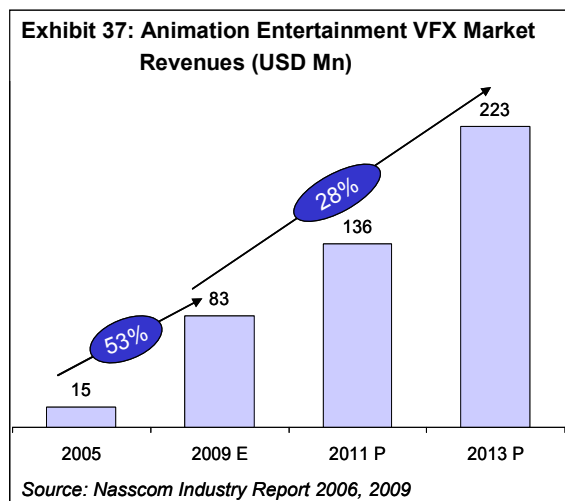
Unlike mature markets abroad, where animation is seen by everyone, Indians still have the animation-is-for-kids mindset. This impedes the growth of domestic market in India.

- **Lack of Government Support**

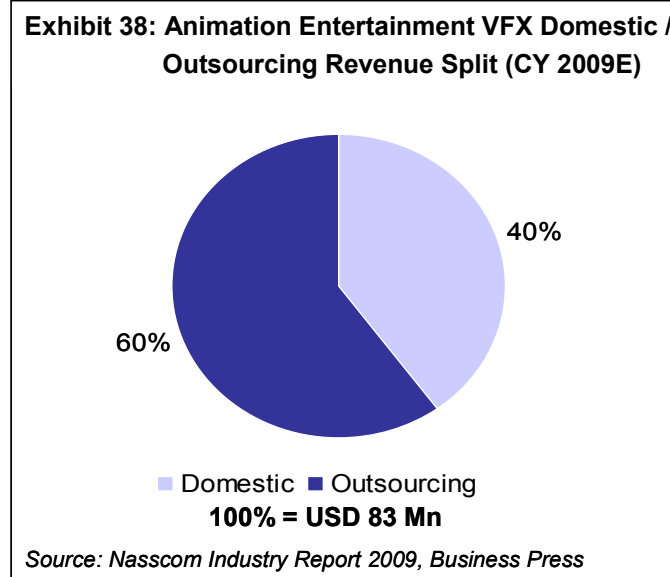
Competing outsourcing destinations e.g. Canada, UK have signed tax treaties with the US. This encourages growth of animation in the country. Indian animation players lack any such Government support either through tax rebates or grants.

## 5. Animation Entertainment (VFX)

The Entertainment Visual Effects (VFX) industry has registered an unprecedented



growth of 53% over 2005-2009 and is estimated at USD 83 million in 2009. This segment is further expected to grow at 28% p.a. to reach USD 223 million by 2013. 40% of revenues of VFX Players accrue from work done for domestic market.



## 5.1 Growth Indicators

VFX growth is expected to be propelled by demand from both the domestic market and the overseas market.

### Domestic Demand

Increased adoption of VFX and an increase in VFX budgets in movies are expected to drive the domestic demand.

- **Increasing no. of movies with greater VFX Usage**

Success of movies with VFX Usage and entry of comics players in the movie space are

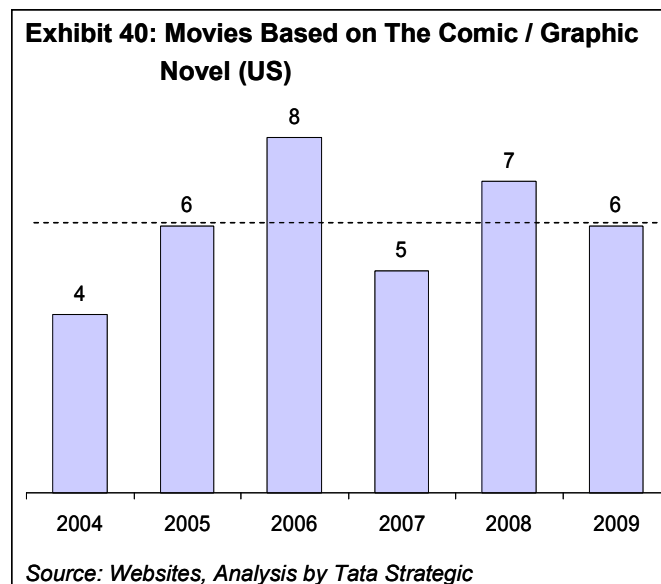
**Exhibit 39: VFX Extensive Movies (India) – Report Card**

| Movie               | Year of Release | Top Grossing Movies Ranking | Production Budget (USD Mn) | Box Office Collections India (USD Mn) | IIFA VFX Winner  |
|---------------------|-----------------|-----------------------------|----------------------------|---------------------------------------|------------------|
| <b>Main Hoon Na</b> | 2004            | 2                           | 5.3                        | 10.1                                  | Yes              |
| <b>Dus</b>          | 2005            | 11                          | 4.3                        | 6.2                                   | Yes              |
| <b>Krrish</b>       | 2006            | 2                           | 9.6                        | 24.7                                  | N/A <sup>2</sup> |
| <b>Om Shanti Om</b> | 2007            | 2                           | 7.4                        | 23.2                                  | Yes              |
| <b>Ghajini</b>      | 2008            | 1                           | 10.6                       | 36.2                                  | Yes              |

Note : 1 International Indian Film Academy 2. Not Available  
Source: Business Press, Analysis by Tata Strategic

expected to drive the usage of VFX in movies in India. Indian film industry produces maximum number of movies in a year globally. 1325 movies were released in 2008, this no. having grown from 1016 releases in 2006 (*Refer Exhibit 16*). Usage of VFX in Indian films has considerably increased: VFX has been used in a lot of recent releases e.g. New York, Taare Zameen Par, Rab Ne Bana Dee Jodi, Jodhaa Akbar. Moreover, the movies which have used VFX extensively have been amongst the top grossers of their respective launch years (*Refer Exhibit 39*). The success of these movies at box office is expected to be a strong driver for production houses to have significant VFX content in their upcoming movies.

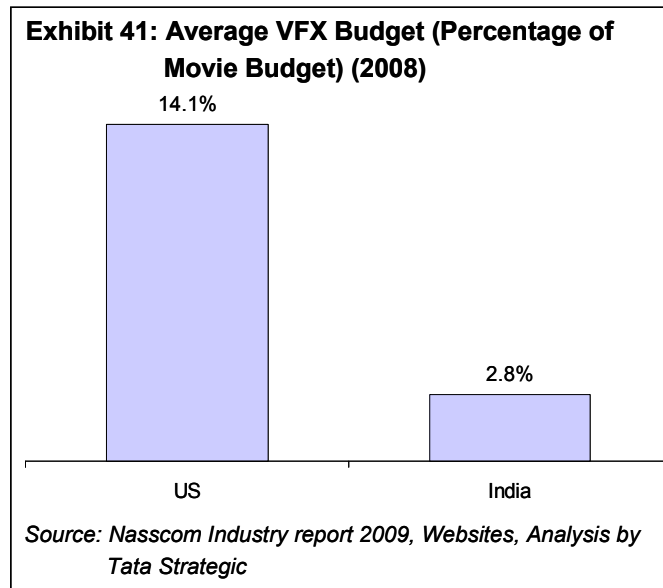
**Entry of comics players in the movie space:** In the US, on an average (2004-2009), six movies have been produced every year, which are based on comics or graphic novels.



This trend could catch up in India as well, as some players are already planning to make movies based on comic characters.

- **Increase in VFX budgets**

The Indian movies have very low budgets for visual / special effects. On a VFX budget index, India is way below the US levels. The VFX budget in Hollywood ranges from 3.5 million to 8.8 million, whereas the Indian film industry is typically spending a maximum of USD 0.20 million only for Visual Effects. Increase in VFX Budgets for the Indian movies is expected to boost the Entertainment VFX segment in India.



- **Pre-Visualization Trend**

Pre-Visualization trend is a technique where-in the shots can be visualized on computers before they are actually shot. This increases the efficiency of production and reduces cost of production. Growth of this trend would contribute to increased overall usage of visual effects.

- **Increased usage in broadcast and advertising**

Usage of VFX in broadcast helps in significant reduction of costs. Its usage brings down the set creation costs for a broadcast by almost 60-65%, particularly for mythological shows. It also helps in costs savings of 30-40% for commercials.

### **Demand from Overseas**

Increased usage of VFX and increased outsourcing are expected to drive higher demand from overseas markets:

- **Increased VFX Usage**

The VFX extensive movies overseas have done exceptionally well at box office. Most of the movies which had significant VFX were amongst the top five grosser for that year (*Refer Exhibit 42*). Whopping success of the VFX extensive movies is expected to drive the VFX usage in other movies as well.

**Exhibit 42: VFX Extensive Movies (US) – Report Card**

| Movie   | Year of Release | Top Grossing Movies Ranking (Top 5) | Production Budget (USD Mn) | Box Office Collections US (USD Mn) | VFX Oscars Nominee |
|---|-----------------|-------------------------------------|----------------------------|------------------------------------|--------------------|
| <b>Transformers</b>                                       | 2007            | 3                                   | 151                        | 319                                | Yes                |
| <b>Pirates of the Caribbean: At World's End</b>           | 2007            | 4                                   | 300                        | 309                                | Yes                |
| <b>The Dark Knight</b>                                    | 2008            | 1                                   | 185                        | 533                                | Yes                |
| <b>Iron Man</b>   | 2008            | 2                                   | 186                        | 318                                | Yes                |
| <b>Indiana Jones and the Kingdom of the Crystal Skull</b> | 2008            | 3                                   | 185                        | 317                                | Yes                |
| <b>Hancock</b>  | 2008            | 4                                   | 150                        | 227                                | Yes                |
| <b>Transformers: Revenge of the Fallen</b>                | 2009            | 1                                   | 210                        | 402                                | Yes                |
| <b>Avatar</b>   | 2009            | 2                                   | 237                        | 450                                | Yes                |
| <b>Harry Potter and the Half-Blood Prince</b>             | 2009            | 3                                   | 250                        | 301                                | Yes                |

*Source: Websites, Analysis by Tata Strategic*

- **Increased outsourcing**

Increasing cost pressures on production studios overseas, coupled with the 'cost savings' offered by Indian players and growing capability of Indian players in VFX is set to increase the outsourcing of VFX work to India. The Indian players are also increasing their presence overseas to tap the international market and build an outsourcing pipeline for their Indian studios:

- Century Communications Limited (CCL) promoted Pixion has acquired two London-based studios, Men-From-Mars and Molinare
- Pixion also plans to acquire a studio in Los Angeles.
- The Tata Group promoted Tata Elxsi has launched a new facility of Visual Computing Labs (VCL) in Los Angeles, aiming to expand its footprint in the overseas markets.

## 5.2 Revenue Model

The revenue model used for Animation VFX is 'Work for Hire' model, where revenues are generally realized on a per hour basis.

### 5.3 Key Players

Indian VFX is a fragmented industry, with the top 5 players commanding ~ 20% of the overall industry. They key players in Animation VFX in India are:

- Tata Elxsi
- Prime Focus
- DQ Entertainment
- Pixion
- Prana

### 5.4 Challenges

Major challenges faced currently by the VFX industry are:

- **Lack of Skilled Manpower**

Similar to animation entertainment, there is a considerable shortage of skilled manpower for VFX in India. There are very few institutes that provide formal courses on VFX. The studios therefore have to employ people with inadequate skills, which lead to an inferior quality of work.

- **Lower budgets for VFX in India**

The average budget for VFX in Indian movies is almost one fifth of that in a Hollywood movie. The average budget of a Hollywood movie ranges from USD 3.5 million to USD 8.8 million, whereas, the Indian movies have an average VFX budget of USD 70,000 to USD 150,000. This limits the quality of VFX in the movie.

- **Categorization of VFX in India as a post production activity**

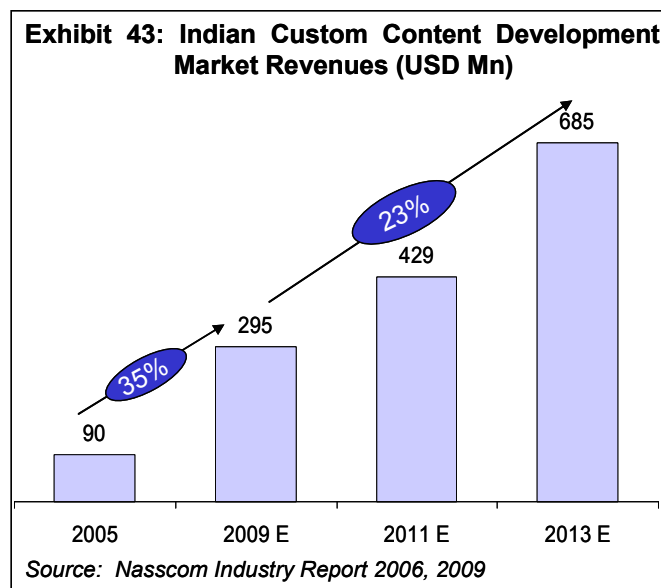
VFX is used at all stages in Hollywood, whereas, it's still considered as a 'post-production' activity in India. The quality difference between a Hollywood movie and an Indian movie can be attributed to some extent to the limited usage of VFX in Indian movies. The limited usage of VFX results in limiting its scope and ability to deliver high quality.

- **Lack of Government Support**

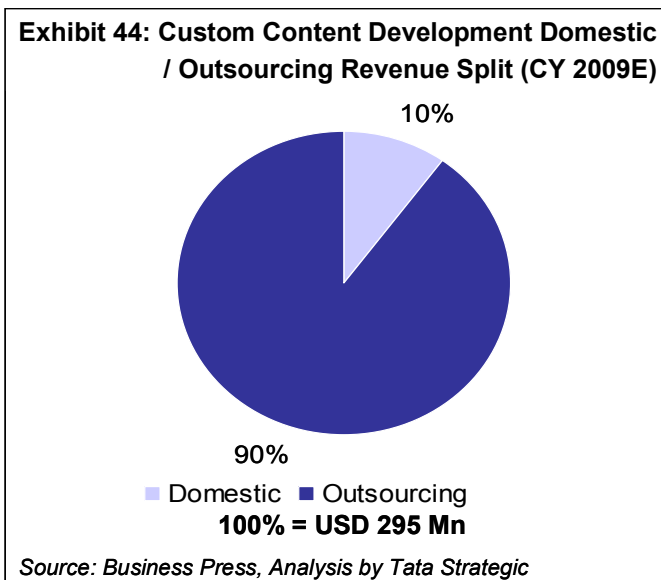
Similar to Animation Entertainment, the Entertainment VFX segment may be boosted by Government support in the form of tax rebates or grants.

## 6. Custom Content Development

Custom Content Development, estimated at ~ 295 USD Million (2009) has grown at 35% p.a. (2005-09) and is expected to continue its growth at a healthy rate of 23% p.a. (2009-13) to reach USD 685 Million by 2013.

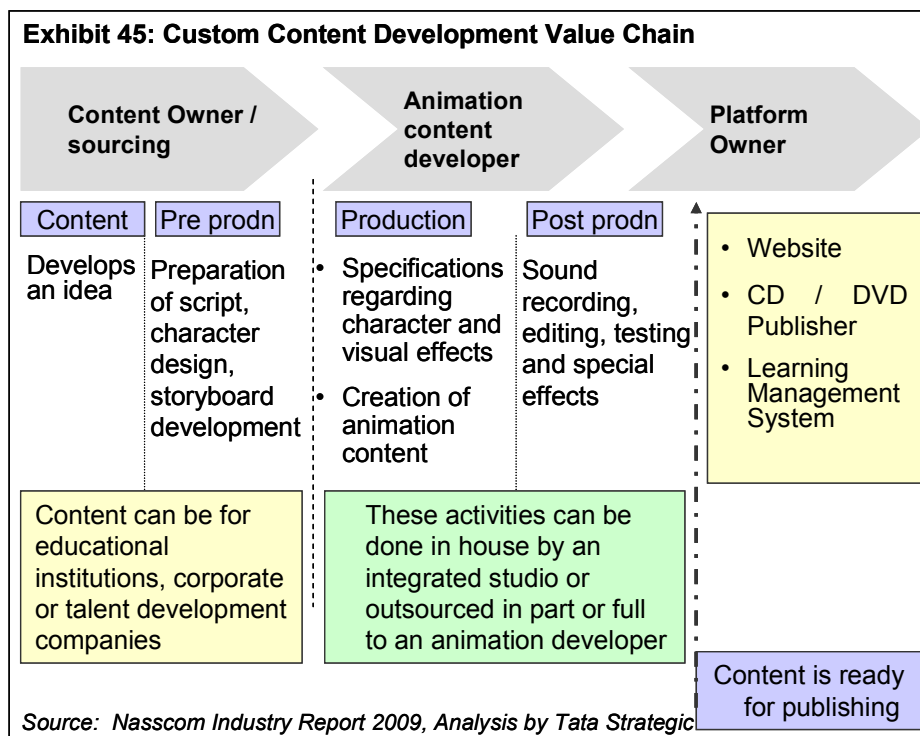


As per leading players in the industry, >90% of custom content development in India is outsourcing work.



Custom Content Development initiates with sourcing of the content and preparation of the script / storyboard followed by creation of the content and migration of the same on the required platform. The platform on which the content finally resides may be a CD / DVD, website, or a Learning management System depending upon the customer's requirements.

Educational institutes: Schools (K-12), Higher Education Institutes for their e-Learning requirements, Corporate for their employee training / internal communication / web-site designing services / marketing collateral and industries such as Aviation, Defence, for special training requirements are customers of this segment.



## 6.1 Growth Indicators

Demand from overseas is expected to be driven by greater outsourcing of custom content development. The domestic market which constitutes only 10% of revenues currently (*Refer Exhibit 44*), is expected to increase its share, driven by increased adoption of e-Learning by corporate and higher education institutes in India.

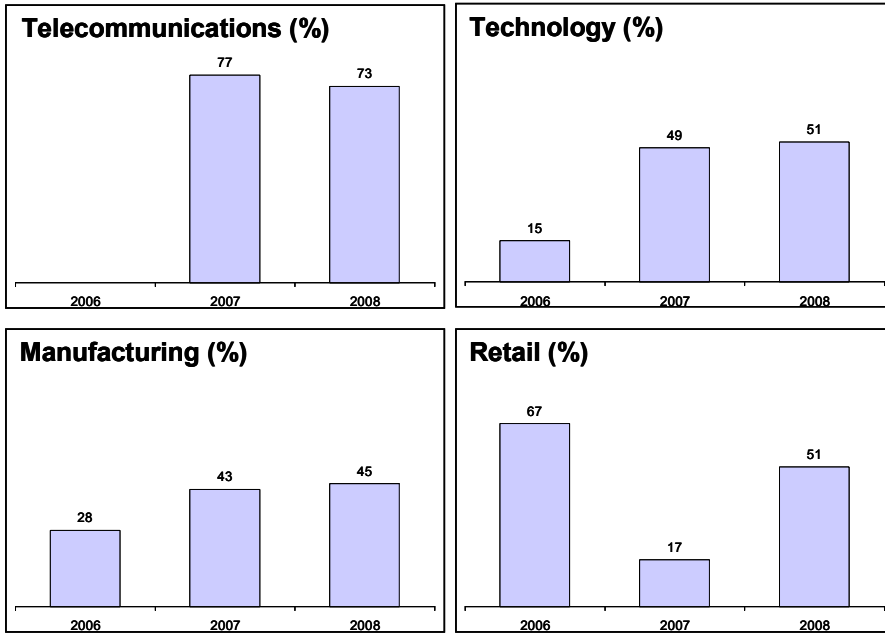
### Demand from Overseas

Major markets for e-Learning globally are the US and select European nations across both educational institutions and Corporate Sector for training purposes. Demand from overseas is expected to increase on account of the following factors:

- Increased outsourcing of Learning Content Development by Corporate Sector

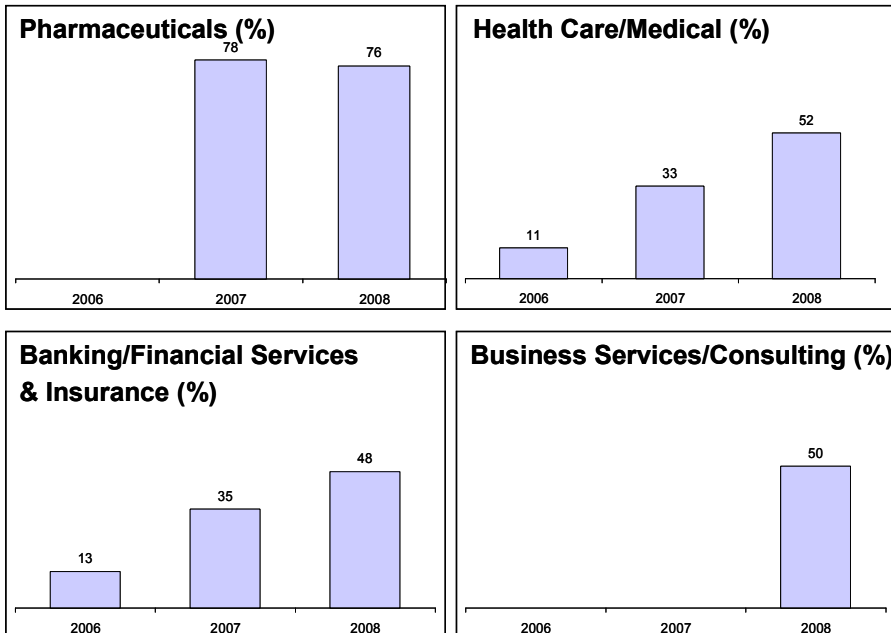
Custom Content Development outsourcing by the Corporate Sector in the US has seen an increasing trend from 2006 to 2008. *Exhibit 46(a) and 46(b)* show the percentage of organizations across specific sectors, which outsourced their training content development requirements.

**Exhibit 46(a): Custom Content Development Outsourcing by Corporate US**



Source: Bersin & Associates' Report

**Exhibit 46(b): Custom Content Development Outsourcing by Corporate US**

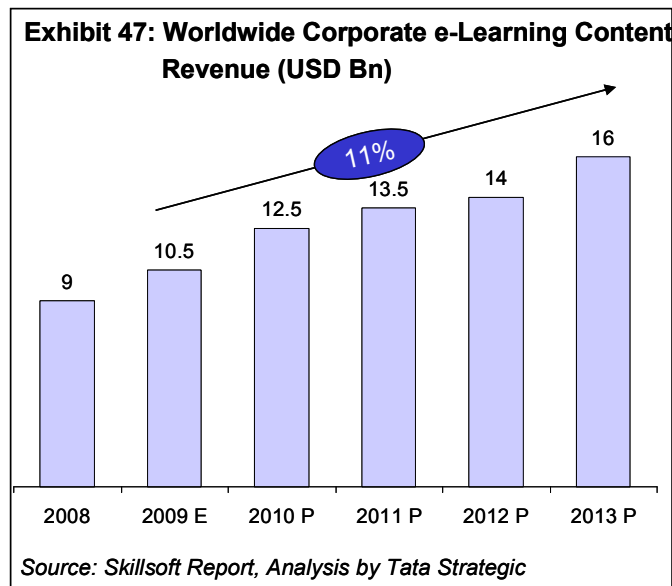


Source: Bersin & Associates' Report

These exhibits clearly show: While the outsourcing trend for certain sectors has stayed the same, outsourcing trend for certain other sectors viz. Healthcare / Medical, BFSI and Business Services / Consulting has increased significantly. As the organizations focus more on 'Cost Savings', this trend is expected to continue.

- **Increased requirement for content**

Content requirement for corporate e-Learning is expected to grow at 11% p.a. (2009-13).



This increased requirement for content, along with greater propensity of corporate in the US to outsource custom content development promises a large opportunity for custom content development companies in India.

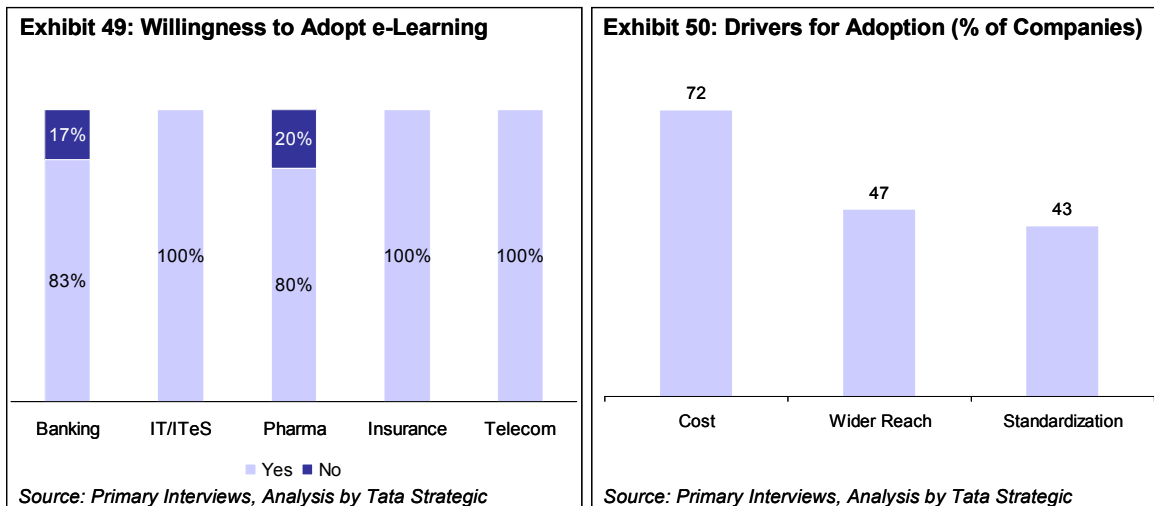
### Domestic Demand

- **E-Learning Demand from the Corporate Sector**

As per a survey conducted by Tata Strategic Management Group for specific industry



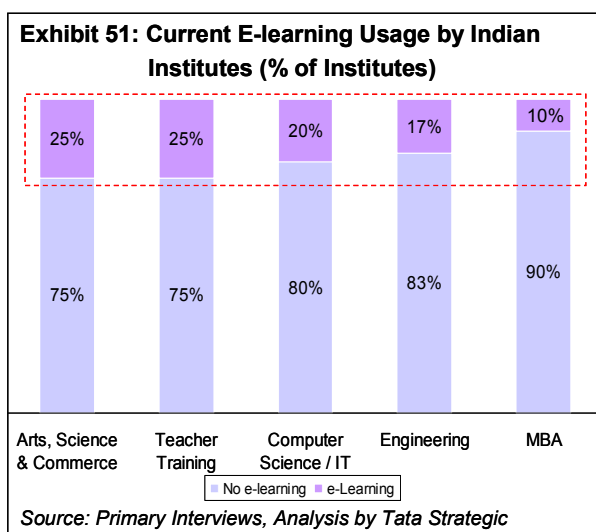
verticals, adoption of e-Learning among small and mid-sized organizations in India is very low. However, most of these small and mid sized companies have shown willingness to adopt e-learning, the main drivers being cost savings and wider reach.



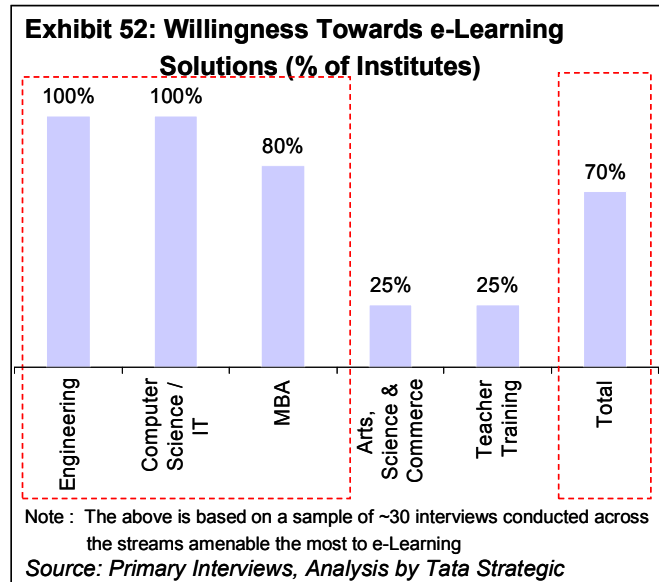
This clearly shows the immense potential that e-learning holds in India among corporate.

- Adoption of e-Learning by Higher Education Institutes**

Current adoption of e-Learning by higher education institutes in India is abysmally low. Compared to the US where close to 95% of the higher education institutes have adopted e-learning solutions, a sample survey across a Tier 1 city in India reveals the adoption of e-Learning to be less than 15% by Indian institutes. With increasing awareness of the e-learning models and its associated advantages, adoption of e-learning is expected to increase in Indian higher education institutes.



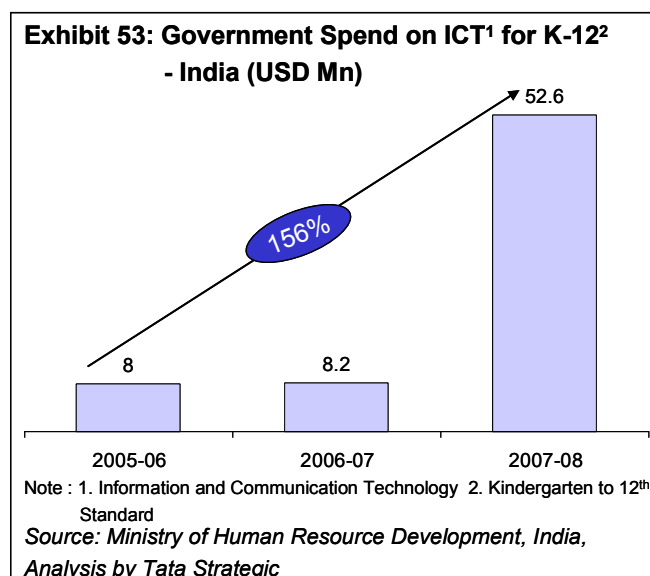
In fact, a large percentage of Institutes offering professional courses showed high willingness towards adoption of e-learning solutions. These e-Learning solutions are expected to improve quality of learning and differentiate the Institute from the others.



This clearly shows the large potential that higher education institutes hold for e-Learning players in India. Such increased adoption of e-Learning solutions would lead to requirement of content that would positively impact animation players' revenues.

- **Increased Government focus on Information, Communication, Technology (ICT) for schools**

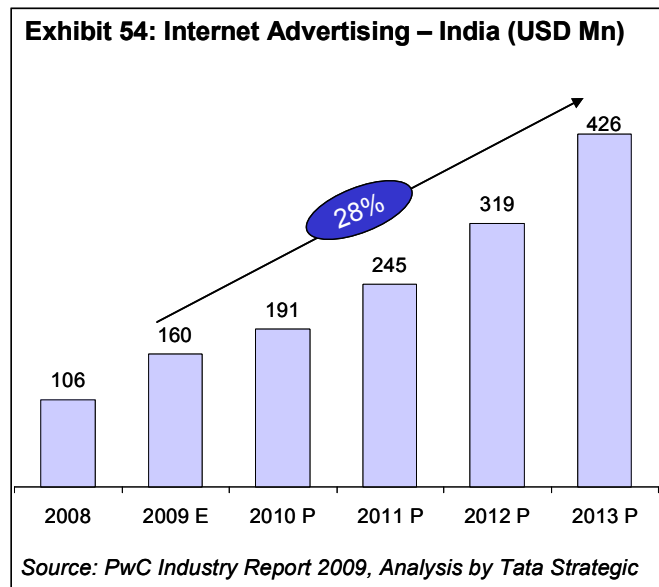
The Indian Government has been focusing on ICT in schools, which is seen in their increasing spends (*Refer Exhibit 53*). This spend is expected to move up even further,



thus presenting an increased business opportunity for the e-learning players and content providers.

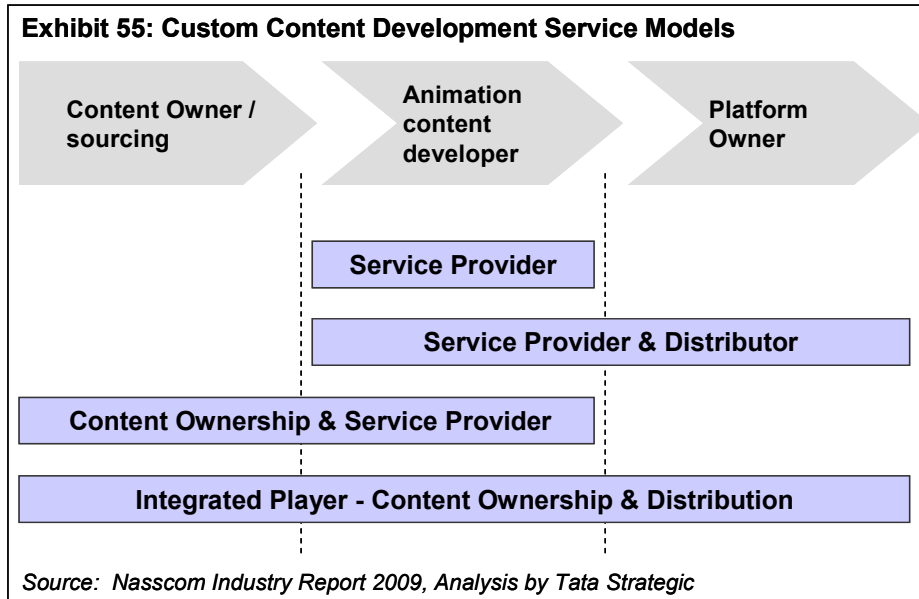
- **Increased Online Advertising**

Online advertising in India is expected to show a growth of 28% p.a. (2009-2013). This is expected to lead to greater demand for web-design services. Animation players providing such web-design services would find this a positive development.



## 6.2 Service Models

Players providing custom content development follow different service models, which lie along different parts of the value chain. Depending upon the service model that a player adopts, he can be present across the value chain or in certain specific parts of it.



| Exhibit 56: Custom Content Development Service Models  |  |
|--|--|
| Service Model  | Description  |
| Service Provider                                       | Pure service delivery : Content is sourced from the Client. Custom content developer player creates content in the customized format and migrates the same to the required platform.   |
| Service Provider & Distributor                         | Content is sourced from the Client. Custom content developer, in addition to creation and migration of custom content, also provides the platform for content e.g. Learning Management System.   |
| Content Co-ownership, Service Provider                 | In this model, the custom content developer, in addition to creation and migration of custom content, sources relevant content for the Client. The service provider typically enters into a tie-up with an institution, university or publisher for sourcing this content. |
| Integrated Player – Content Ownership and Distribution | In this model, the player plays an end-to-end role across the value chain – right from sourcing the content, creating and migrating the custom content, to providing the self-developed platform   |

Companies typically follow different service models, varying from one project to the other.

### 6.3 Revenue Model

Players in the Custom Content Development space can realize revenues from different sources, depending upon the model that they adopt:

| Exhibit 57: Custom Content Development Revenue Models  |   |
|--|---|
| Service Model  | Revenue Model   |
| Service Provider                                       | Work for Hire<br>Revenues are generally realized on a per hour / per man day basis.             |
| Service Provider & Distributor                         | 'Work for Hire' for services provided and License Fee for Providing platform OR Revenue Sharing |
| Content Co-ownership, Service Provider                 |   |
| Integrated Player – Content Ownership and Distribution | Revenue Sharing from sale of the final product  |

### 6.4 Key Players

| Exhibit 58: Custom Content Development Key Players |  |  |
|--|--|--|
| Key Players  | Target Segment                         | Presence in Geography  |
| Tata Interactive Systems                           | Corporate, Higher Education Institutes | US, UK, Europe, Mainland Europe, Australia, Middle East, Japan |
| Educomp  | K-12                                   | India, Canada, US, SriLanka, Singapore                         |
| Everonn  | K-12                                   | India  |
| Learning Mate                                      | Corporate, Higher Education Institutes | US, UK   |
| NIIT Ltd.  | K-12, Corporate                        | India  |

## **6.5 Challenges**

While custom content development holds a large potential in India, there are numerous challenges which need to be overcome for it to realise its potential:

- **Lack of subject matter experts**

Engagements for custom content development may be specific to a particular subject / course. To make the content / instructional design relevant and interesting, the e-Learning custom content developer ropes in subject matter experts. It becomes challenging for the service provider to recruit or empanel subject matter experts for niche courses.

In addition, growth of the domestic sector faces the following challenges:

- **Cultural Constraint**

The Indian mindset lays significant importance on human interface for teaching or training. Therefore, they find it difficult to accept an e-learning product replacing face-to-face interaction, partially or fully.

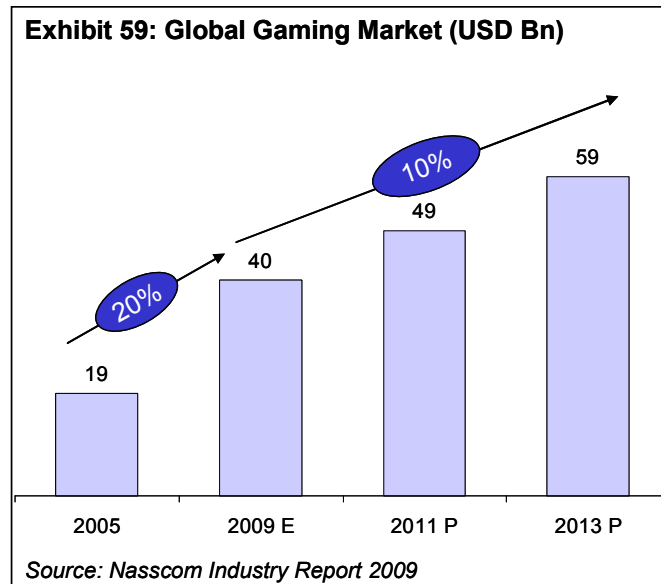
- **Lack of Government Thrust**

Most of the institutes that are government aided do not have enough budgets to afford e-learning. As there is a cap on the maximum fee that may be charged by these institutes, this extra cost of e-learning cannot be passed on to the students. Such institutes shall be able to adopt e-Learning only if there is enough thrust from the Government towards the same.

## 7. Gaming Industry

### 7.1 Global Gaming Industry

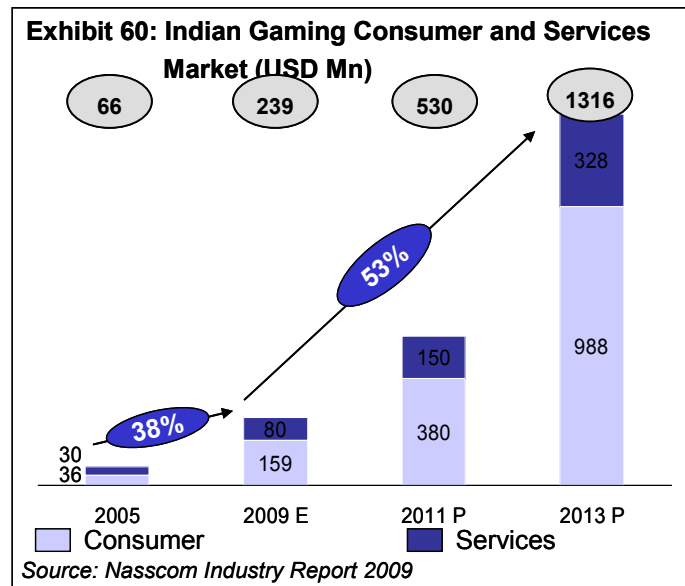
The global gaming industry is estimated at ~ USD 40 billion (CY 2009E) and is expected



to grow at 10% p.a. to reach USD 59 billion by 2013. Key segments for gaming are Console Gaming, PC Gaming, Online Gaming and Mobile Gaming. North America, Western Europe and Japan lead the gaming market. However, China is the fastest growing market especially for online gaming.

### 7.2 Indian Gaming Industry

The Indian gaming market is estimated at ~ USD 239 million (CY 2009) and expected to show a CAGR of ~ 53% to reach USD 1.3 billion by 2013.



This includes the work done by the Indian operations of the Gaming Players. This represents revenues from both the consumer market and gaming services.

Gaming consumer market in India comprises:

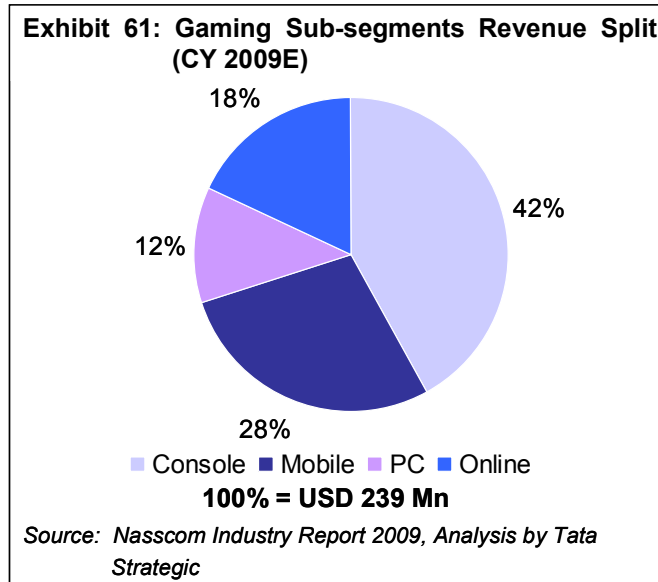
- PC Gaming: Revenues from the gaming software sold through CDs (including legitimate, grey and pirated markets)
- Mobile Gaming: Software revenues through mobile downloads
- Console Gaming: Revenues from sale of hardware such as gaming consoles (legitimate and grey markets)
- Online Gaming: Advertising and subscription revenues from online games

Gaming services market in India comprises:

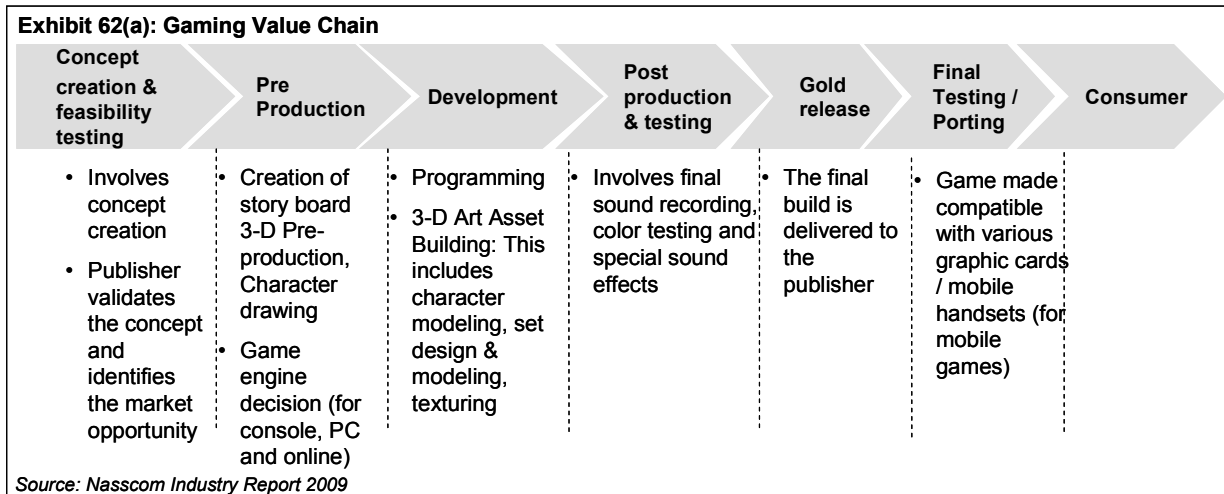
- Outsourcing development services
- Ancillary services such as voice and email BPO support to MMOG (Massive Multiplayer Online Games) gamers worldwide, porting, testing, etc.

### 7.2.1 Key Segments and Value Chain

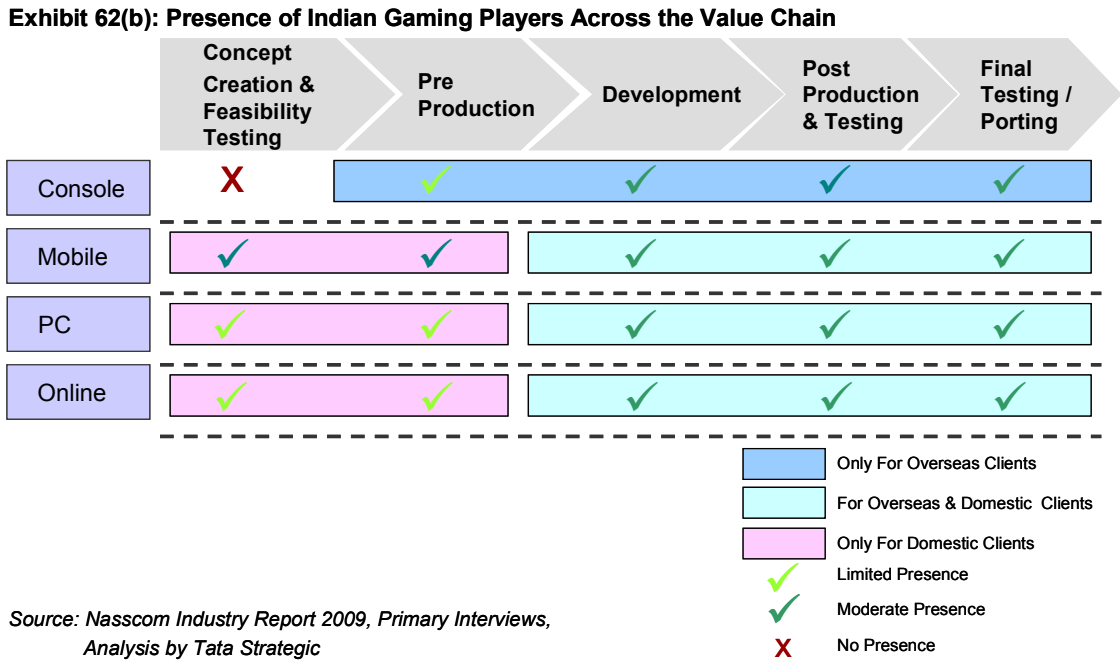
Among the various segments, in India, Console Gaming is the largest with 42% of the market share (CY 2009).



There are multiple stages involved in gaming, right from concept creation and feasibility testing to final testing.

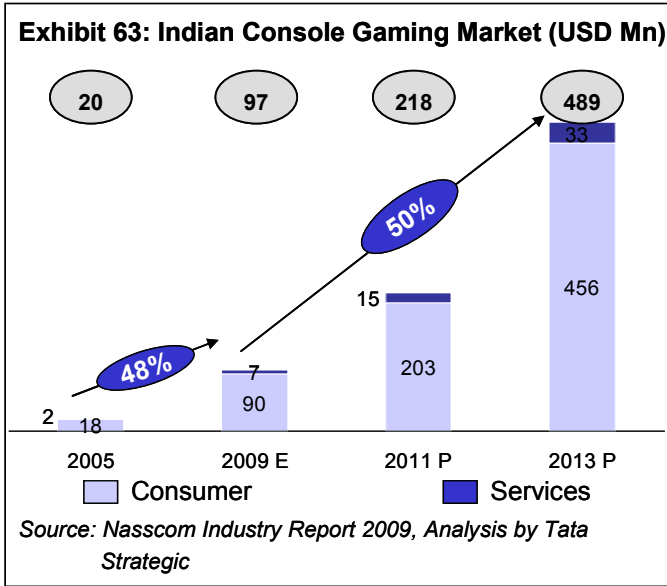


It is the development and post development activities, as shown in *Exhibit 62(a)* which are outsourced. The Indian gaming players play a limited role in concept creation and pre-production. It is limited to a handful of players, who develop their own games, primarily for the Mobile and Online platforms.



### 7.3 Console Gaming

Indian console gaming market is estimated at ~ USD 97 million (2009) and expected to grow at 50% p.a. to reach ~ USD 489 million by 2013. A significant percentage of the console gaming consumer revenues (Refer Exhibit 63) is shared with the console



hardware manufacturers / software publishers: International Players viz. Sony, Microsoft, Nintendo, Ubisoft, Electronic Arts etc. Moreover, the margins involved in this distribution

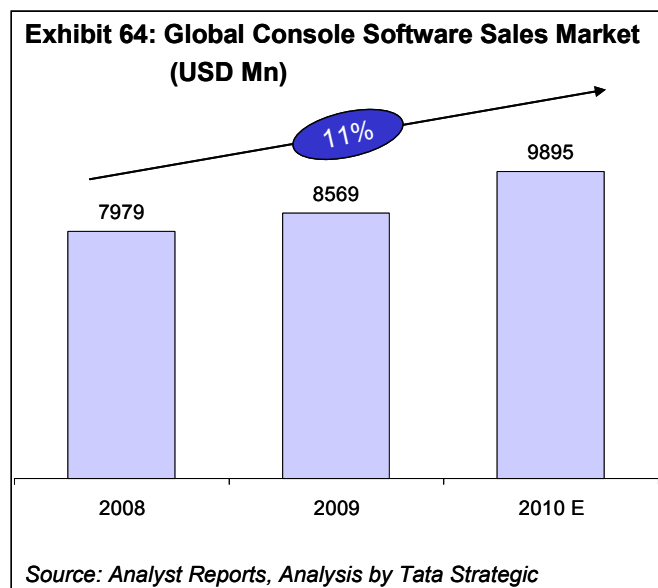
business are very low. Hence, it is the 'Consumer Gaming Services' market which has been analysed from the growth perspective.

### 7.3.1 Growth Indicators

Currently, the revenues from console game development services are only ~ USD 7 million. These revenues are completely derived from providing services to international companies. It is the growth of console gaming overseas and extent of outsourcing to India, which would determine the growth of console gaming services in India.

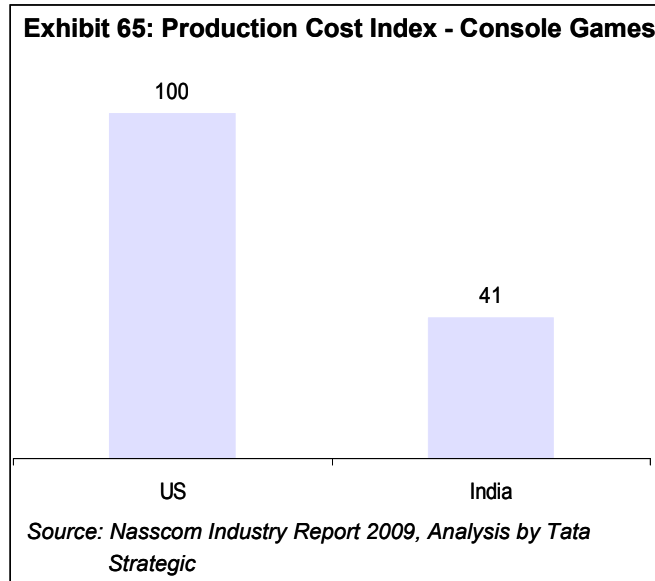
- **Increase in production of console games overseas**

Global console software market is expected to grow at 11% p.a. till 2010 (*Refer Exhibit 64*). This implies a greater need for game development services, which indicates a growing opportunity for Indian console gaming services' players.



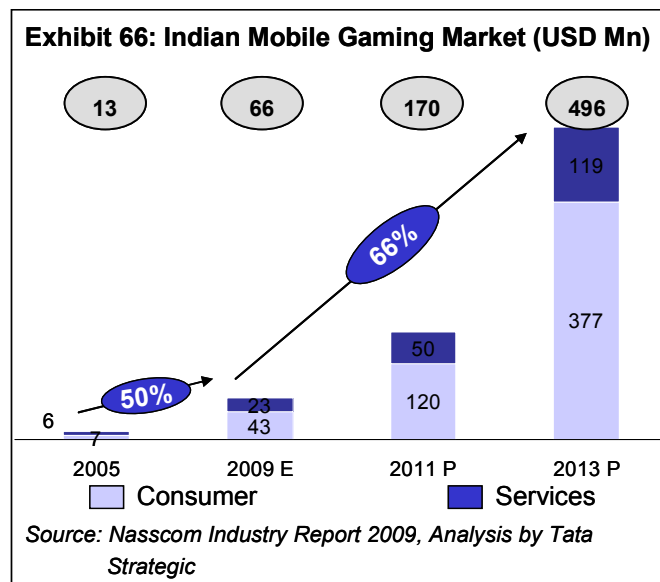
- **Increase in outsourcing to India**

There is a significant cost differential between the production costs in India and that in US. Nasscom estimates that it costs USD 11 million to 18 million in India for a console NGN (Next Generation) game development compared to USD 18 million to 44 million in US for the similar work. Growth of console software globally coupled with the high cost savings offered by Indian console game services indicates large opportunity for gaming service providers in India.



#### 7.4 Mobile Gaming

Indian mobile gaming market is estimated at ~ USD 66 million (2009) and expected to grow at 66% p.a. to reach ~ USD 496 million by 2013. Unlike console gaming, which is completely dominated by games from international publishers, mobile gaming consumer market in India comprises games from both the Indian publishers (e.g. Indiagames, Mobile2win) and overseas publishers. Mobile consumer gaming revenues in India (*Refer Exhibit 66*) includes the consumption of games from international and Indian publishers.



In India, Indian mobile gaming players earn revenues from Distribution of mobile games for international publishers (Small percentage of the overall revenue accrues to the Indian gaming player with a low profit margin) and Publishing their own games and

distributing through telecom operators (~70% revenue from sale of the game is shared with telecom operators in India).

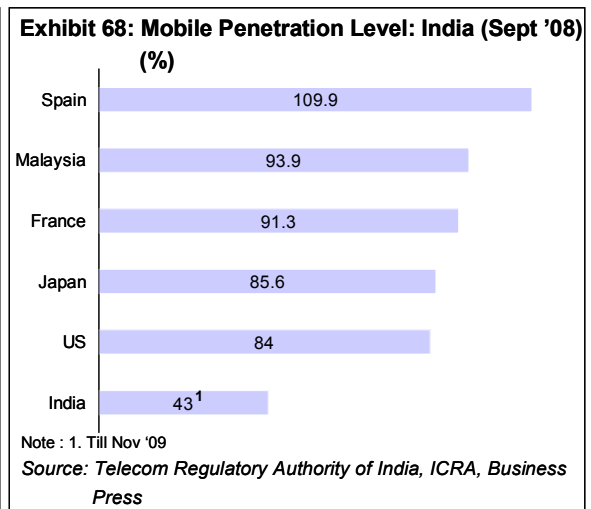
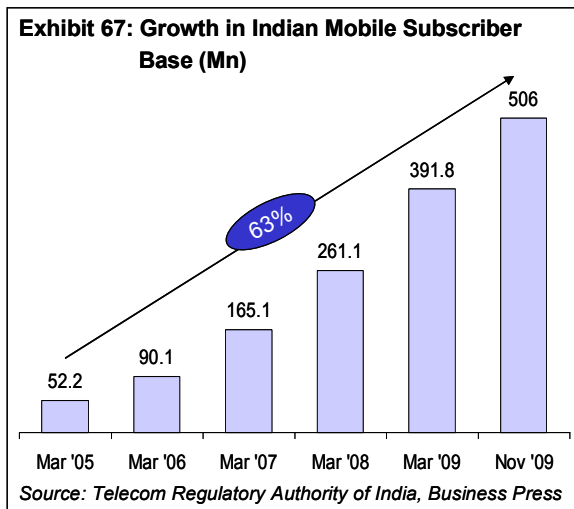
### 7.4.1 Growth Indicators

#### Domestic Demand

Mobile is the platform with the largest reach in India. It is believed that over 3 million users are engaged in mobile gaming every month. The top categories of games include cricket, Bollywood and action based games. Increasing mobile penetration, introduction of 3G in India, falling price points of mobile games and increased adoption of Value Added Services by telecom operators are expected to drive the mobile gaming consumer market in India and demand for mobile gaming services from domestic players.

- **Increased mobile subscriber base**

The Indian mobile subscriber base has been growing at a high rate of > 60% p.a. This growth rate is expected to continue as the overall mobile penetration in India continues to be way below that of the developed countries (*Refer Exhibit 68*).

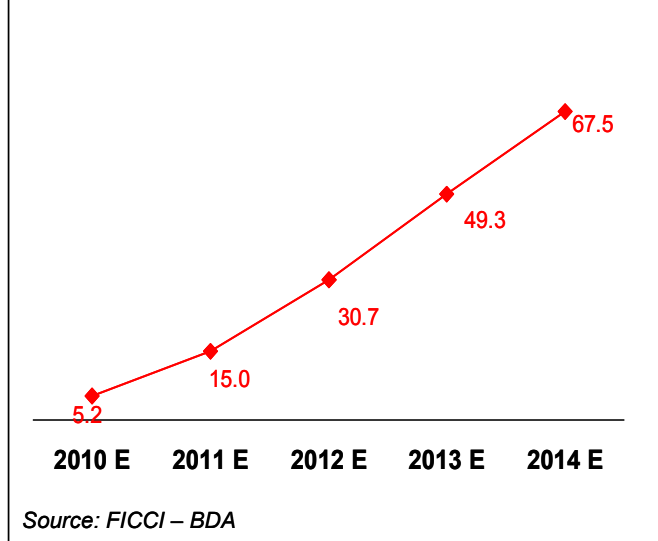


As the mobile penetration increases, more and more people will get exposure to mobile games, which is expected to lead to greater mobile game downloads.

- **Introduction of 3G enabled handsets**

The demand for 3G enabled handsets is expected to be at 67.5 million by 2014 (assuming 3G services are launched in India in 2010) (*Refer Exhibit 69*).

**Exhibit 69 : Total 3G Handsets - India (Mn)**

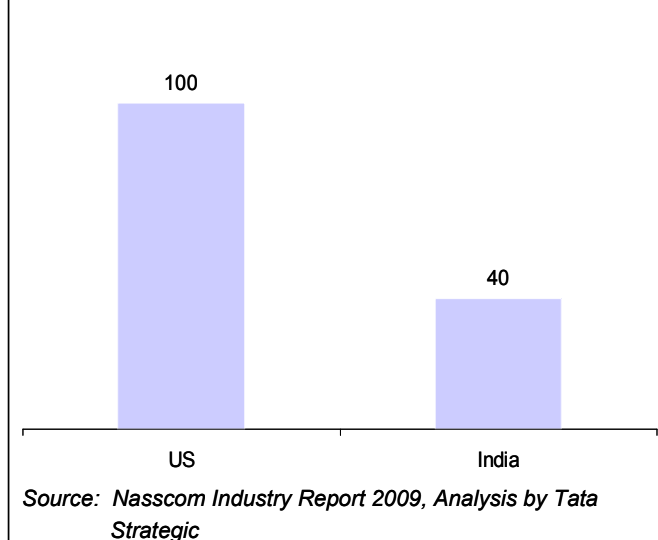


Introduction of advanced handsets will facilitate development of advanced mobile games and rollout of 3G services will provide efficient, high speed data networks to mobile gamers, thus driving consumption of mobile games.

- **Falling price points**

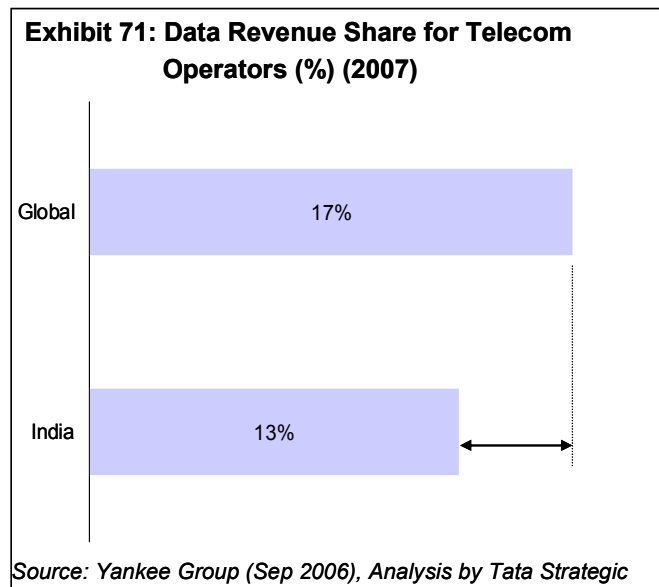
There has been a significant fall in the prices of the mobile games from USD 3.33 to current average of USD 1. Increased affordability is expected to drive greater usage of mobile games.

**Exhibit 70 : Production Cost Index - Mobile Games**



- **Increased focus on 'Value Added Services' by telecom operators**

Reducing profitability on account of decreasing voice tariffs in India is expected to drive telecom operators towards more value added services. Moreover, VAS as a % of overall revenue contribution lags behind the global %, indicating scope for growth.



These services also include games which are generally developed by the local developers, hence presenting a significant market opportunity for organizations developing their own mobile games.

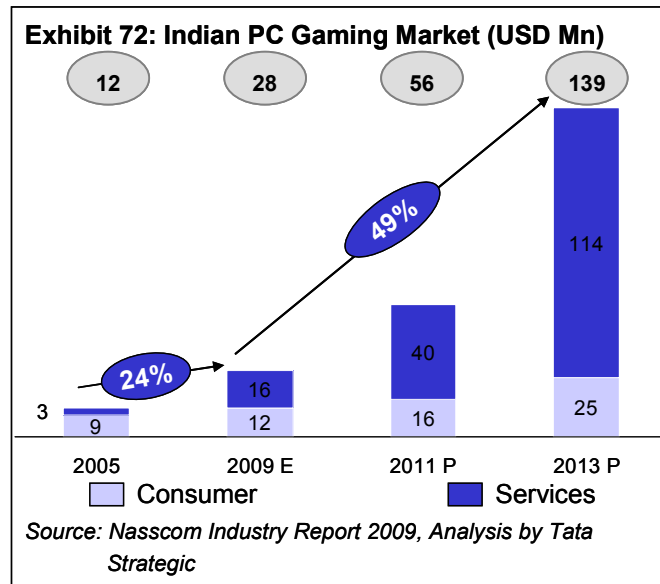
Increased exposure to gaming, increased affordability and greater demand for games are expected to drive the demand for mobile games in India. This is expected to encourage the Indian players to increase developing and publishing their own games, which, in turn, will drive the demand for mobile gaming services from domestic market.

### **Demand from Overseas**

International off-shoring accounts for more than 90% of the mobile gaming services market. Significant cost savings offered by Indian mobile gaming services is expected to drive the overseas demand for mobile gaming services. Nasscom estimates that it costs USD 2 million – 5 million in the US compared to USD 1 million – 2 million in India for a mobile game. Hence, foreign companies can save around 50% of their development costs by outsourcing the work to India.

## 7.5 PC Gaming

The Indian PC gaming market is estimated at ~ USD 28 million (2009) and expected to grow at 49% p.a. to reach ~ USD 139 million by 2013. A significant percentage of the PC



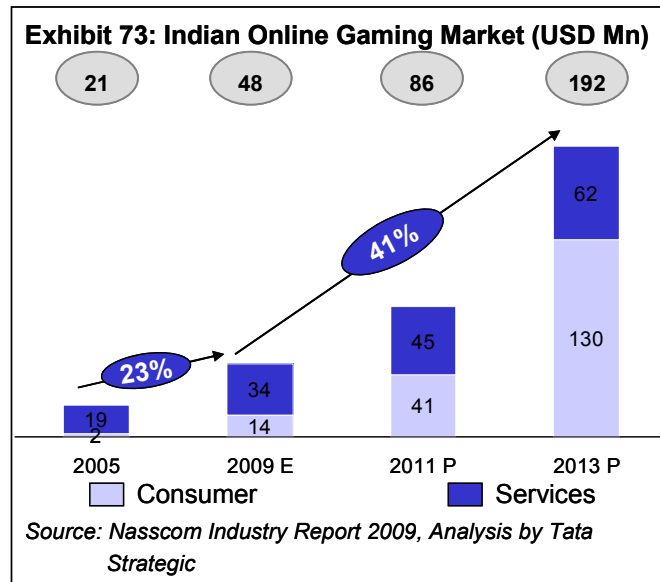
consumer gaming revenues (*Refer Exhibit 72*) is shared with the international PC Game publishers, who own the IP for the PC game. Moreover, the margins involved in this distribution business are very low. Hence, it is the 'Gaming Services' market which has been analysed from the growth perspective.

### 7.5.1 Growth Indicators

The Indian PC Gaming Services revenues are completely derived by providing services to international companies. It is the growth of PC gaming overseas and extent of outsourcing to India, which would determine the growth of PC gaming services in India. Skill sets required to develop PC Games are relatively easier to master: Thus, the Indian gaming players look at this as a significant opportunity.

## 7.6 Online Gaming

The Indian Online gaming market is estimated at ~ USD 48 million (2009) and expected to grow at 41% p.a. to reach ~ USD 192 million by 2013.



Currently, advertising forms the major chunk (85%) of the revenues from online games consumer market in India. However, as penetration of the internet in India and consumption of online games increases, this percentage is expected to change favourably towards subscription.

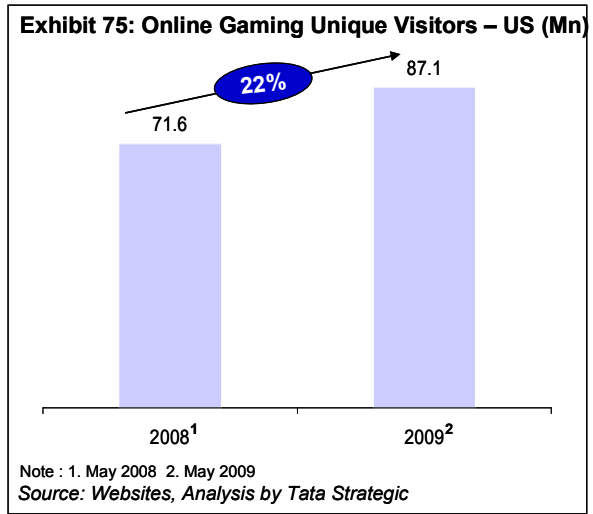
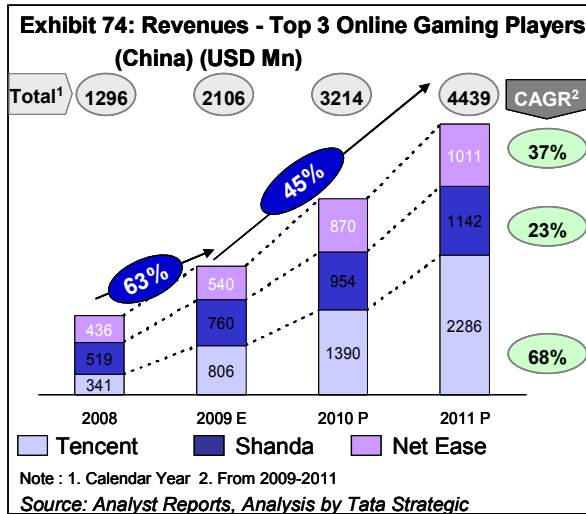
### 7.6.1 Growth Indicators

#### Demand from Overseas

More than 95% revenues of the Indian online gaming services come from the international market.

- **Increasing MMORG Trend Globally**

Increasing demand for MMORG globally is expected to drive the growth of this market. China is the fastest growing online gaming market, primarily due to growth of MMORG (Refer Exhibit 74). This trend is catching up with North America and European countries as well. The 22% growth in online gaming (Refer Exhibit 75) is expected to grow at a faster rate with greater MMORG adoption. With an increase in these games, more development, testing and porting work can be expected to get outsourced to India.



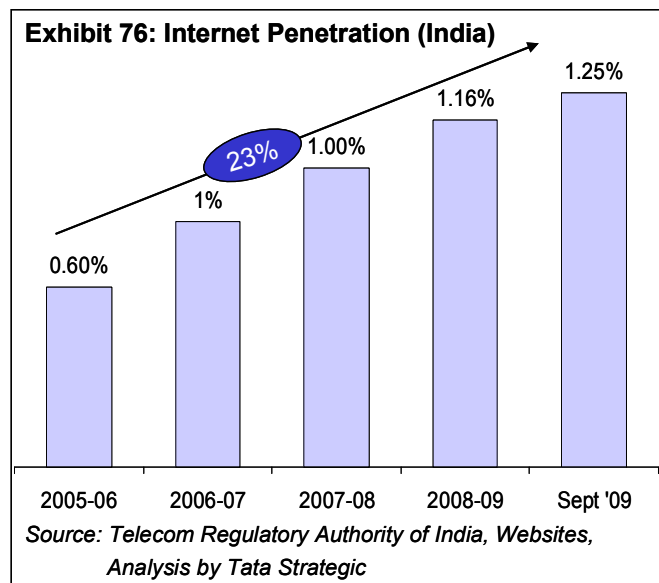
- **Improving skill sets of Indian Gaming Players**

The Indian gamers are improving their skill-sets for developing casual online games. As the Indian players improve their capabilities, India can be an attractive destination for third-party volume off-shoring work.

**Domestic Demand**

Increasing internet penetration and higher adoption of MMORG (Massive Multi-player Online Role Playing Games) Games are expected to drive growth of online gaming consumer market in India.

- **Increased internet penetration**



There has been a significant growth in the internet penetration in India. The internet penetration has increased from a mere 0.6% in 2005-06 to 1.25% in 2008-09. This increased penetration along with the introduction of 3G services will facilitate playing of high end online games in India.

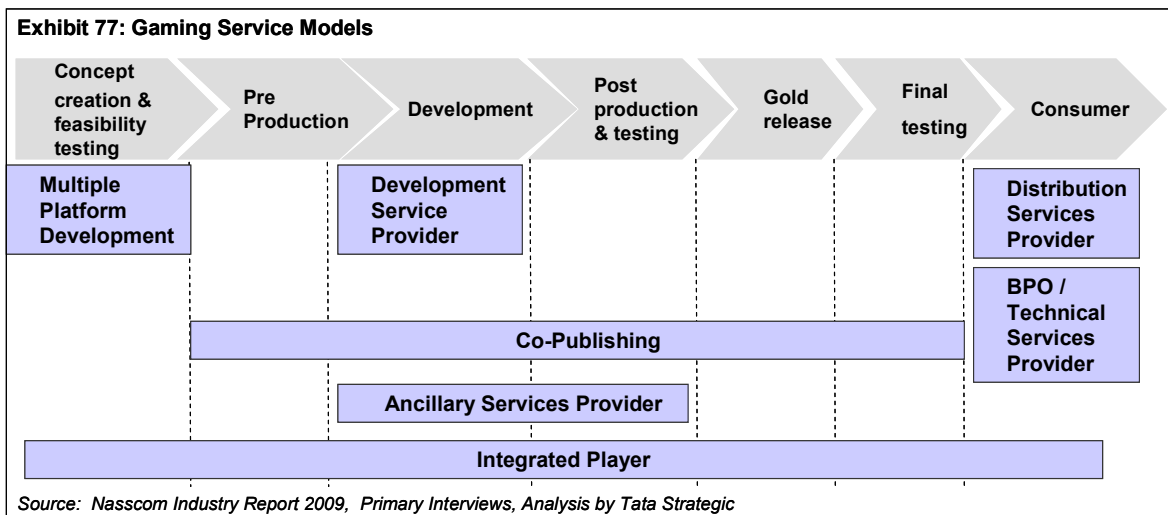
- **Increasing trend of MMORG in India**

MMORG (Massive Multiplayer Online Role Playing Games) is the leading trend world-wide. As this trend catches on in India, online gaming consumer market is expected to get a big boost.

This increased demand for online gaming in India is expected to encourage the Indian players to increase developing and publishing their own games, which will drive the demand for online gaming services from domestic market.

### 7.7 Service Models

Gaming Players in India follow different service models. These service models lie along different parts of the value chain. Depending upon the service model that a player adopts, he can be present across the value chain or in certain specific parts of it. Most of the players in India follow a hybrid model.



| <b>Exhibit 78: Gaming Service Models</b>             |   |
|--|---|
| <b>Service Model</b>                                 | <b>Description</b>  |
| Integrated Player                                    | Integrated companies that have presence in the complete gaming value-chain – from conceiving a gaming idea, to publishing it. They also take care of developing the complete game to distributing it across geographies.<br>Indian Players have a very limited presence in this model that too restricted to mobile gaming. |
| Co-Publishing  | Company invests in the development of the game, along with the publisher, in addition to providing one or more services along the value chain.  |
| Multi-Platform Development                           | Companies may publish / develop gaming content for multiple platforms.  |
| Development Service Provider (Third Party / Captive) | Third party developers or captive centres develop the game conceived by publisher / developer.  |
| Ancillary Services Provider (Third Party / Captive)  | Third party or captive centres of a gaming company that serves the other parts of the gaming value chain such as the development of game art for all gaming platforms, porting and testing of mobile games etc.   |
| Distribution Services                                | Distributing the gaming products to the end consumer – May distribute the hardware (consoles) OR / And the software / Game  |
| BPO/Technical Service Providers                      | Companies offering technical support services online to customers of various gaming platforms   |

### **7.8 Revenue Models**

Players in the gaming industry can realize revenues from different sources depending upon the service model that they adopt. The different revenue models for the gaming players are as follows:

| <b>Exhibit 79: Gaming Revenue Models</b>              |  |
|---|--|
| <b>Service Model</b>                                  | <b>Revenue Model</b>   |
| Integrated Model                                      | Revenues can be from sale of the games, advertising, IP licensing etc.   |
| Co-Publishing   | Revenue Sharing  |
| Multi-Platform Development                            | IP Licensing / Sale of content   |
| Development Service Provider (Third Party / Captive ) | Work for Hire  |
| Ancillary Services Provider (Third Party / Captive)   | Revenues are generally realized on a per hour basis. Most of the Indian players realize revenue on this model. |
| BPO / Technical Services Provider                     |  |
| Distribution Services                                 | Revenue from the sale of the game / hardware. Distributors earn distribution margins in this model.            |

### 7.9 Key Players

| <b>Exhibit 80: Gaming Key Players</b> |  |
|---------------------------------------|--|
| <b>Service Model</b>                  | <b>Players</b>   |
| Integrated Player                     | Indiagames -> Mobile games; Plays the role of developer, publisher and distributor for its mobile games in India |
| Co-Publishing                         | Trine Entertainment  |
| Multiple Platform Development         | -  |
| Development Service Provider          | Dhruva Interactive, Trine Entertainment Games, FX Labs, Lakshya Digital, Jamdat                                  |
| Ancillary Services Provider           | The Porting Lab, RZ2 Games   |
| Distribution Services                 | Indiagames   |
| BPO / Technical Services Providers    | 'Milestone eExpress, I-Energizer   |

## 8. Challenges

Gaming industry faces challenges due to lack of skilled manpower, low consumer propensity towards gaming, high standards already set by international players and unfavourable revenue sharing arrangements.

- **Skilled Manpower**

The Indian gaming industry is constrained on the talent supply side. Manpower requirement for gaming in India expected to grow from an estimated 2,300 in 2009 to 13,000 by 2012. However, there are not enough resources available and those who are available are not readily employable.

While the constraints on quality of manpower remain, the development of domestic consumer market faces specific challenges

- **Cultural Constraint**

There is low awareness in India for gaming as an entertainment option. Parents generally consider playing games as a waste of time as compared to reading books, watching educational programs, or playing other recreational games. Until and unless this mindset change, gaming will not be adopted by masses and hence will be a big deterrent for the development of the industry.

- **Higher standards set by the International players**

The Indian consumers have had significant exposure to the international games. They expect similar quality from the Indian games as well. Therefore, there is a benchmark set for the local developers. Indian companies who are looking to develop their own IP have to reach that quality level for achieving success in the Indian market. So far, none of the Indian players have been really successful in the PC or console gaming. There are successful Indian games on the mobile and online, but they are quite limited as well.

- **Revenue Sharing With Telecom Operators**

Telecom operator keeps 60% to 70% of the revenues that accrue from the mobile game downloads. With mobile game developers getting only a small share of the overall revenues, there is not much incentive for them to develop IPs and distribute them.

## 9. International Outsourcing Trends – Implications for India

- **Increased focus on cost containment**

As a result of the recent economic slowdown, International Studios (Animation Entertainment), Gaming Publishers (Gaming), Corporate Sector (Custom Content Development) all are expected to increase their focus on cost containment. This is expected to lead to:

- Higher propensity to outsource work to cost-effective destinations: The Indian animation industry captures a miniscule 8% of the total outsourced work while the Indian gaming industry is limited to an estimated ~1% of the outsourced work. As the adoption and extent of outsourcing by international players increases, Indian players need to leverage this opportunity and increase their share in the outsourcing market.
- Greater inclination towards countries which offer tax treaties: For example, “The South East England Development Agency” (SEEDA) awarded grant of GBP 950,000 to NCsoft, a Korean online gaming developer and publisher, to expand and create over 100 new high skilled jobs in UK. Similar grants and rebates are provided by Canada as well. The combined effect of tax rebates, grants and captive revenue streams gives a 20-30 percent cost differential for Canada. This is a negative sign for the Indian players as it reduces their cost competitiveness.
- Setting up of captives in countries which international players deem fit on cost and quality parameters: For example, Rhythm and Hues India added a second centre in Hyderabad and has expanded its employee count from 160 to 300 in last 2 years. This is a threat as well as an opportunity for the Indian players –While the captives eat into the opportunity available for Indian gaming and animation developers, it also helps the Indian companies demonstrate that India as a country has developed the requisite skills and the infrastructure to provide a quality output.

- **Increased Risk Sharing – Co-Production Deals**

International players are entering into more and more co-production deals for animation movies to share the inherent risks involved. Moreover, the nature of the co-production is also undergoing a transition – Initially, the co-production deals were limited to territorial revenue sharing; now more deals are being signed for sharing global revenues.

- **Increasing usage of 3D effects / VFX in movies**

The usage of 3D Effects in animation movies is increasing to enhance the visual appeal. Most of the recent hits like Ratatouille, Finding Nemo, The Incredibles and Avatar have made extensive usage of 3D animation techniques. The Indian players though well established in the 2D animation outsourcing, are yet to showcase their capabilities in 3D animation. Thus there exists a case for Indian players to upgrade their skill sets and compete in the 3D outsourcing market as well.

- **Development of cross platform content in gaming**

Due to the high costs involved in development of games, publishers are looking to develop cross platform games to increase the sales volume and thus recover the cost. This opens an opportunity for the Indian players to attract more outsourcing work by showcasing their capabilities in cross platform development of content and porting services.

- **Signs of interest for Indian content overseas**

There are signs of Indian content finding audience overseas. Motion Pixel Corporation (MPC) – an animated studio in America has taken licenses to develop, produce and distribute a theatrical film release based on popular Raj Comics property – ‘Nagaraj’. 13 episodes of the popular Indian TV Series – Chhota Bheem have been acquired by Cartoon Network, Japan. With the presence of large Indian diaspora across the globe, Indian companies may enter into specific deals to target this segment.

## 10. Domestic Trends – Implications for India

- **Emerging trend of IP/Content development by Indian companies**

The Indian animation companies are moving up the value chain by increasingly developing their own IPs which can be monetized through various revenue streams. Similarly, increasing presence of the mobile screen and introduction of 3G are expected to encourage organizations (e.g. Indiagames) to develop their own mobile games.

- **Increase in demand for local content**

There is a significant increase in the demand for local content, be in the form of movies or TV Broadcast. The kids and cartoon channels eg. Cartoon Network and Pogo are looking for local content which can easily strike chord with the children. For example, the success of animation TV series ‘Little Krishna’ has spurred the demand for local content by the kids and cartoon channels.

- **Leveraging IPs across platforms**

The Indian animation and gaming companies are trying to leverage their successful IPs for all the platforms. For example:

- Short stories that are generally found in the story books are now been published on DVDs, distributed over mobile and their characters are getting used in commercials as well.
- Comics Publishers looking to monetize their content across platforms: The Indian Comics Publishers are planning to monetize their content libraries by introducing famous characters across platforms. Some of the examples are –
- Diamond Comics plans of launching a children TV channel targeted at the age group of 4 to14 years. The content broadcasted will include both animation and live action.
- Diamond Comics tie-up with Loop mobile and Vodafone to push its mobile applications and its plans for tie-up with other mobile operators as well.
- Indiagames has recently secured the mobile content rights for ‘Nagaraj’ and ‘Bankeylal’ – the two most popular characters of Raj Comics.
- Toonz animation India Pvt. Ltd. is producing a full length animated movie on one of the popular characters of Chandamama.

- **Proposed government mandate for broadcasting local content**

A proposal to fix the minimum percentage of local content to be shown on the channels has been floated and is expected to see some action from the ministry of information and broadcasting in the coming year. If a minimum percentage is fixed for broadcasting the local content, then it will open up opportunities for the local players to develop more IPs.

## **11. Supply Side Constraints**

Lack of employable skilled talent is the primary constraint impeding the growth of the Indian animation and gaming industry.

- **Lack of standardized courses and curriculum**

Post-graduate / Degree / diploma courses in animation are very few in no. in India. Curriculum is not up to the international standards, thus decreasing the employability of students in India. Moreover, accreditation of these courses is also a concern.

- **Limited number of institutions providing animation / gaming education**

There are only a handful of institutes that provide relevant courses / degrees in animation and gaming, the leading institutes in this domain being National Institute of Design, Toonz Academy, Maya Academy, Arena Animation.

- **Awareness amongst students for animation and gaming as a career opportunity**

Indian students still prefer engineering, medical and commerce fields when it comes to a professional career choice making. The students have very low awareness of animation and gaming as a career option, especially in Tier-2 and Tier-3 cities in India.

## 12. Recent Deals in the Animation and Gaming Industry

Quite a few deals have been signed in the Indian Animation and Gaming Industry recently, which indicates that the immense potential the Indian industry holds is being increasingly realised:

| Exhibit 81: Recent Deals in Animation and Gaming Industry - India |                        |   |                                 |   |
|---|------------------------|---|---------------------------------|---|
| Announcement Date   | Target Name            | Acquirer / Investor Name                  | Deal Amount (USD) and Stake     | Comments  |
| February 2009   | Studio Brahma          | India TV Interactive's (ITVI) digital arm | Undisclosed – Controlling stake | Studio Brahma is a design, development and production company having clients across graphic design, web design, multimedia and 3D animation |
| January 2009  | Laser Infomedia Ltd.   | Compact Disc India                        | 20.6 million –50% stake         | Laser Infomedia is a gaming development firm with multi-platform gaming development projects  |
| August 2008   | True Games Interactive | UTV Software Communications               | Undisclosed –80% stake          | True Games Interactive is a US based online game publishing group   |
| August 2008   | Indiagames Ltd.        | UTV Software Communications               | Undisclosed –51% stake          | Indiagames is a mobile and online gaming publisher  |

|               |                  | ons   |                         |  |
|---------------|------------------|---|-------------------------|--|
| July 2008     | Babel Media Ltd. | Quattro BPO Solutions and D.E. Shaw Group             | Undisclosed             | Babel Media Ltd. is a UK based provider of specialist services to the online games and interactive entertainment industry    |
| March 2008    | Frameboxx        | Manmohan Shetty and Chandir Gidwani (Centaur Capital) | 8.8 million – 51% stake | Frameboxx provides training for animation and visual effects through a network of more than 40 training centers across India |
| February 2008 | Method Films SA  | DQ Entertainment Plc.                                 | Undisclosed –20% stake  | Method Films SA has been a co-producer with DQ Entertainment in a number of productions                                      |

The above investments indicate the growing confidence of the corporate / media players in the animation and gaming industry.

### **13. Future Outlook**

The Indian animation and gaming industry is currently at a nascent stage, with a miniscule 1% share of the global animation and gaming industry and ~8% share of the outsourcing work. This industry has demonstrated its capability in delivering high quality, on time work and holds a promising potential both from the domestic and the overseas demand market perspective. Increasing no. of co-production deals, overseas expansion, increasing focus on IP development, attracting investments from Private Equity / Other Funds – All these recent developments by Indian players bode positive for the industry. Adequate supply of talent will need to be ensured to achieve the promise that this segment holds. Tax incentives / Government grants would also help in improving competitiveness of the industry.

## 14. Player Profiles

Animation and Gaming Industry in India is a highly fragmented market. We have profiled the leading players across Animation Entertainment, Entertainment VFX, Custom Content Development and Gaming.

The following players have been profiled across the various segments of the Animation & Gaming Industry:

| <b>Exhibit 82: Players Profiled</b>        |  |                                   |   |
|--|--|-----------------------------------|---|
| <b>Animation Entertainment</b>             | <b>Entertainment VFX</b>   | <b>Custom Content Development</b> | <b>Gaming</b>   |
| 1.Crest Animation<br>2.Toonz Entertainment | 1.Prime Focus<br>2.Visual Computing Labs, a division of Tata Elxsi | 1.Tata Interactive Systems        | 1.Indiagames<br>2.Dhruva Interactive<br>3.Trine Entertainment |

## **14.1 Crest Animation Studios Ltd.**

### **14.1.1 Company Description**

Crest Animation was founded in 1990 by Shyam Ramanna as an Advertising Commercial Production Company. The organization is widely acknowledged in India to have introduced animation and special effects to the Indian market. It is one of the first players in the Asian region to service the mainstream entertainment industry in the U.K. and the U.S. In 1995 it started a Post Production Studio with state-of-the-art equipment. However, in 2000, it reinvented the business to focus only on Computer Generated Imaging (CGI) Animation.

### **14.1.2 Geographical Presence**

The company is based out of Mumbai. It also has a U.S. subsidiary named Crest Animation Productions based out of Los Angeles.

### **14.1.3 Holding Structure**

The Company's shares are listed on the Stock Exchanges at Mumbai, (BSE), and on the National Stock Exchange of India Ltd. (NSE). The Global Depository Receipts (GDRs) of the Company are listed on the Luxembourg Stock Exchange. The holding structure as on March 31st, 2009 is as under –

|                                    |        |
|------------------------------------|--------|
| Indian Public -                    | 43.39% |
| Foreign Companies -                | 14.99% |
| Promoters – Individuals -          | 11.30% |
| Corporate Bodies -                 | 9.39%  |
| Foreign Institutional Investors -  | 6.78%  |
| GDR Holdings -                     | 6.64%  |
| Promoters / Associated Companies - | 4.62%  |

### **14.1.4 Employee Details**

Crest Animation has an employee base of around 460 people as on December 2009 with most of them based out of their Mumbai office. The company has strategic tie-ups with all the leading animation schools in the country to acquire the best talent.

#### **14.1.5 Service Offerings**

➤ Animation Services

Crest Animation is an integrated studio specializing in the development and production of 3D digital animated properties for theatrical, television and home entertainment for the global entertainment industry. In addition to providing work-for-hire animation production services, it is building its own production including development, rights acquisitions and production for the film and DTV Markets. Crest offers outsourcing services from its Mumbai office (Crest Animation Studio) whereas the in-house production work is mainly done by the Los Angeles arm.

➤ Gaming

Crest forayed into the gaming space in 2007-08 and provides game arts services, including Art & Asset Creation, Cut-scene Animation, Backgrounds & Sets and Character Modelling. However, the company has not done any work in this space in 2008-09.

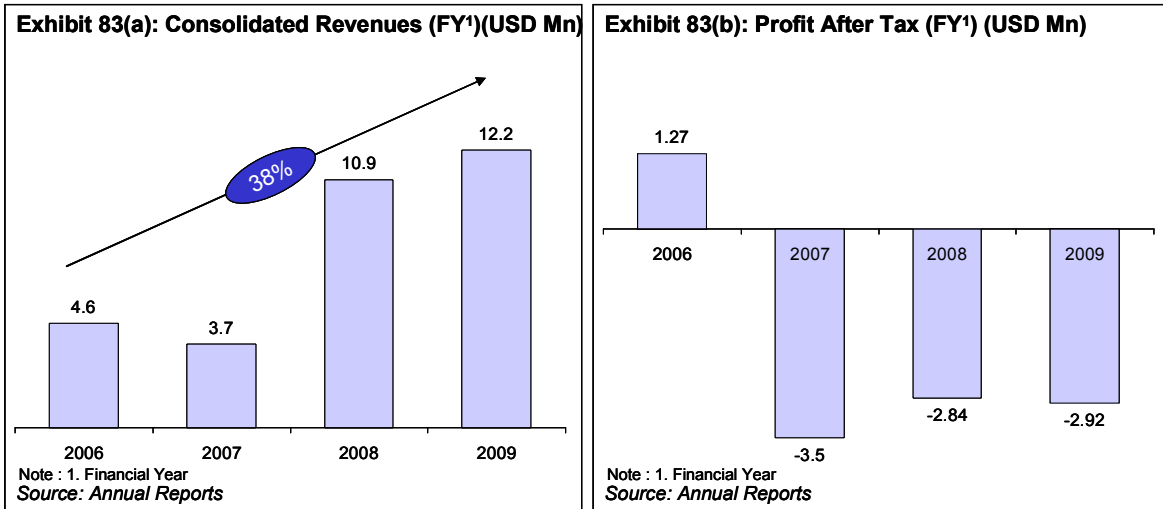
#### **14.1.6 Revenue Models**

The company has multiple revenue models:

- Work for Hire: Services rendered on a man-day basis.
- Co-Production: Revenue-sharing model - Crest recently tied up with Lions Gate Family Entertainment to co-produce three movies.
- IP model: Revenues accruing from ownership of the IP (Partially or completely).

### 14.1.7 Revenues

Revenues for Crest Animation are USD 12.2 million (FY 2009). The organization has grown at 38% p.a. from 2005-06 to 2008-09. Profits (PAT) for Crest Animation has declined from USD 1.27 million (FY 2006) to USD (2.92) million (FY 2009), thus registering de-growth of 132%.



### 14.1.8 Future Plans

The company is focusing on broad basing the revenue structure. It plans to achieve the same through greater adoption of Co-Production Model and IP model in addition to the currently dominant work-for-hire model.

## **14.2 Toonz Animation India Pvt. Ltd.**

### **14.2.1 Company Description**

Toonz Animation India Pvt. Ltd. (Toonz Animation) was founded in 1999 and has evolved as a leading animation company, delivering animation content across the global markets for multiple platforms, viz. Films, TV Broadcast, TV Advertising and DVD. It has a division, Toonz Academy, which offers diploma courses for animation.

### **14.2.2 Geographical Presence**

The company is based out of the IT hub Technopark, Trivandrum in Kerala. It has marketing offices in Los Angeles, London, Tokyo, Sydney and Singapore.

### **14.2.3 Holding Structure**

It is a fully owned subsidiary of Toonz Entertainment Pte Ltd Singapore.

### **14.2.4 Employee Details**

Toonz Animation has an employee base of around 600 people, as on December 2009, with most of them based out of their Trivandrum development centre. It has around 70 people based in Los Angeles on project specific assignments. The company conducts in-house training for its employees.

### **14.2.5 Service Offerings**

#### **➤ Animation Services**

The company offers 3D and 2D animation services in digital and traditional formats; Flash and Stop Motion for Movies, TV Broadcast, TV Commercials and DVD. 3D Animation is the major contributor to the company's revenues. The work done is predominantly in the production part of the animation value chain. As far as platforms are concerned, TV and DVD have been the largest contributors. However, the organization is focusing more on international films and plans to significantly increase its revenues from this segment.

➤ Training

Toonz Academy, the training division of Toonz Animation India Pvt. Ltd. offers a portfolio of short-term courses in animation and visual effects (Refer 14.2.8 for details on Toonz Academy)

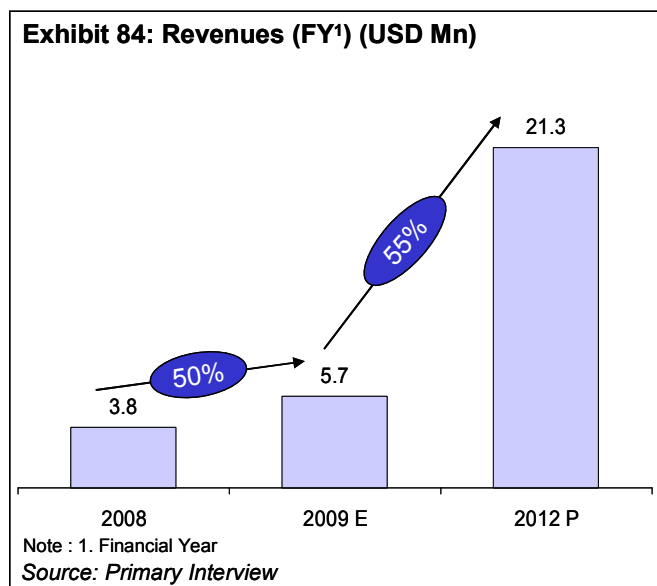
### 14.2.6 Revenue Models

Animation Services: Toonz Animation has adopted multiple revenue models:

- Work for Hire : Services rendered on a man-day basis
- Co-Production : Has inked a co-production deal with South American studio, Illusion Studios for a 90-minutes 3D animated feature film 'Gaturro' based on the famous Argentine comic strip 'Gaturro'
- IP model: Revenues accruing from ownership of the IP (Partially or completely). These revenues are realized by Toonz Entertainment Pte Ltd. Singapore directly and not by Toonz Animation India Pvt. Limited

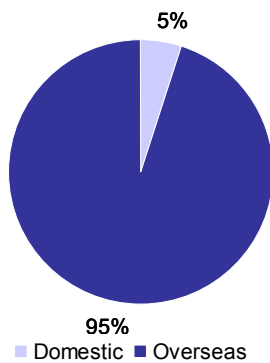
### 14.2.7 Revenues

Revenues for Toonz Animation are estimated at ~USD 5.7 million (FY 2009). The management expects the revenues to continue their growth at 55% p.a. for 2009 to 2012 (This revenue only refers to studio work done in India and does not include the revenues derived from own IP; that revenue is realized by the Toonz Singapore).



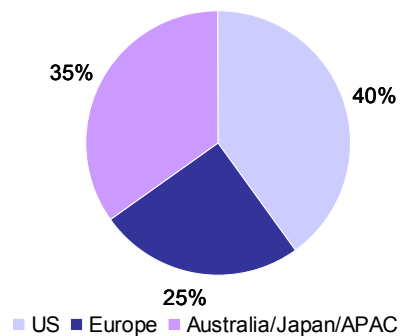
Currently, Toonz Animation derives its revenues pre-dominantly from the overseas market (~95% of revenues) (*Refer Exhibit 85*). US is the largest market followed by Europe and Asia Pacific. Of the overseas revenues, US accounts for 40% with Europe accounting for 25%. The remaining 35% of the revenues comes from Australia, Japan and other Asia Pacific countries. Within Europe, UK, Germany, France and Italy are the main markets.

**Exhibit 85: Geographical Revenue Split**



Source: Primary Interview

**Exhibit 86: Overseas Revenue Split**



Source: Primary Interview

### 14.2.8 Toonz Academy

Toonz Academy is the training division of Toonz Animation India Pvt. Ltd. It is one of Asia’s leading media academies with access to real time production, international faculty and a world class curriculum. The first centre of the academy was established in Trivandrum near the Technopark campus during the year 2003 and has expanded to nine centres currently. It has presence in Delhi, Nagpur, Hyderabad, Indore, Ahmedabad, Chennai, Bhopal, Jabalpur and Calicut. The Trivandrum centre is the self-owned centre whereas the other centres are on franchisee model. Current intake of the academy per year is 500 students. The academy offers 12 months Advanced Diploma course in animation. The Academy also offers a portfolio of short-term courses in animation and visual effects. The fee charged per student lies in the range of USD 2100 – USD 3200. At the current intake and fee structure, the Academy earns revenues of ~USD 1.2 million on an annual basis.

#### **14.2.9 Future Plans**

- Toonz Animation is planning to increase its focus on animation movies, for the overseas markets. It also plans to form a separate distribution division to tap the overseas market.
- The company also plans to enter the Visual Effects market from the current year itself.
- The Toonz Academy has signed Memorandum of Understanding (MOUs) with leading Chinese Universities to set up animation training centres in China and plans to expand its operation to West Africa, Middle East and South East Asia.

### 14.3 Prime Focus

#### 14.3.1 Company Description

Prime Focus was formed in 1997 by the merger of 2 proprietary concerns – Video Works and Video Workshop. Over the last 13 years, it has evolved to be a global Visual Entertainment Services group, offering a range of services in post-production and visual effects.

#### 14.3.2 Geographical Presence

The Company has a strong presence globally: It is present across North America, UK and India. It operates out of 16 facilities spread across India (8), UK (4) and North America (4). A brief snapshot of the locations is as follows:

| <b>Exhibit 87(a) : Prime Focus India Geographical Presence</b> |   |
|--|---|
| <b>Location</b>  | <b>Description</b>  |
| Mumbai   | 4 facilities across Mumbai, including the headquarters for Prime Focus in India.<br>Facility 1: Headquarters for India housing the management and a post production facility, specializing in broadcast packaging, commercials and music videos<br>Facility 2: Specializes in commercials: Renowned as the No.1 commercials post facility in India<br>Facility 3: Computer Graphics Imaging (CGI) & Visual Effects (VFX) facility, employing over 180 VFX Artists<br>Facility 4: Focused on equipment rental services |
| Hyderabad  | VFX and Digital Intermediate (DI) facility, catering to films from Andhra Pradesh   |
| Chennai  | VFX and DI facility, catering to films from Tamil Nadu  |
| Goa  | Home to Prime Focus' restoration division in India.   |
| Bangalore  | Main technology hub of the group. Develops and maintains CLEAR, the group's digital asset management system   |

**Exhibit 87(b): Prime Focus UK Geographical Presence**

| Location       | Description  |
|----------------|--|
| Old Compton ST | Home to the UK Broadcast division of Prime Focus, offers a complete broadcast post-production solution from storyboard to final delivery   |
| Dean ST        | Houses 2 facilities<br>Facility 1 : Specialist commercials facility, offering VFX, CG Animation, DI and Telecine services to the advertising and music video industries<br>Facility 2 : Offers wide-range of visual effects' offerings, spanning high-end visual effects work for feature films to specialized services for the broadcast market |

**Exhibit 87(c): Prime Focus Geographical Presence – North America**

| Location    | Description   |
|-------------|---|
| Los Angeles | Headquarters for Prime Focus in North America<br>Houses the main Film VFX and Post Production divisions of Prime Focus in North America |
| New York    | Focuses on the finishing and downstream services for the US market  |
| Vancouver   | Caters primarily to Film VFX for North American market  |
| Winnipeg    | Houses the Prime Focus R&D team and the Prime Focus VFX Software Division   |

**14.3.3 Holding Structure**

Prime Focus is a listed company on Bombay Stock Exchange (BSE) and National Stock Exchange (NSE), India and Alternate Investment Market (AIM), London. As on March 31st, 2009 the promoter and promoter group holds ~54% of the stake with corporate bodies having 19% of the stake. FII' and individuals are the other major stake holders

with 12% and 14% stake respectively. Other stake holders are Mutual Funds, Clearing members and non resident Indians.

#### 14.3.4 Employee Details

Prime Focus has an employee base of around 1200 people as on December 2009, with nearly 800 people operating from India offices and around 200 each from UK and North America.

#### 14.3.5 Service Offerings

Prime Focus provides end-to-end solutions from pre-production to final delivery for the Film, Broadcast, Commercials, Gaming, and Internet and Media industries. Its services are as described in the exhibit below:

| <b>Exhibit 88: Prime Focus Geographical Presence – North America</b> |   |
|--|---|
| <b>Location</b>  | <b>Description</b>  |
| Telecine   | This is the process of transferring motion picture film into electronic form by scanning. Telecine enables a motion picture, captured originally on film, to be viewed on standard video equipment, such as televisions, video cassette decks or computers. |
| Digital Intermediate   | Digital intermediate (often abbreviated as DI) is the process of digitizing a motion picture and enhancing colour and other image characteristics for the right look.   |
| Offline Editing  | In offline editing, all the original footage is digitized at a low resolution. The editor then does the basic sequencing of the frames to arrive at the final cut.  |
| Online Editing   | When the offline edit is complete, the pictures are re-assembled at full or 'online' resolution. The offline edited version goes on for adding visual effects, if any.  |
| Visual Effects   | This involves the integration of live-action footage with CGI (computer generated imagery) to create scenes which look realistic, but would be dangerous, costly, or impossible to capture on film.   |

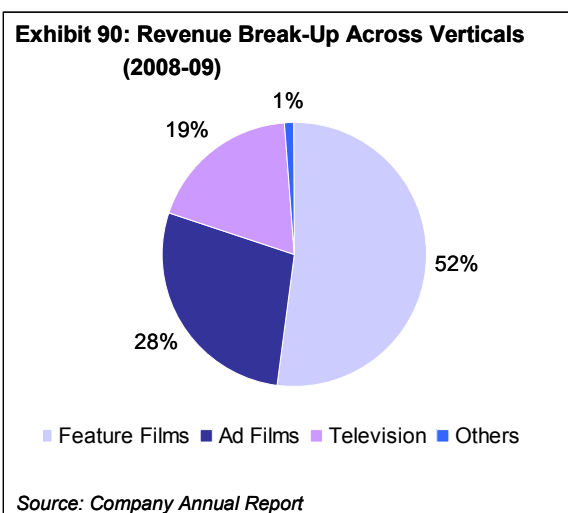
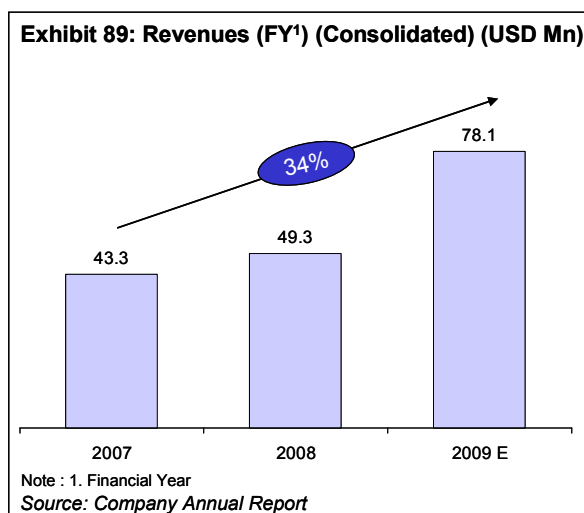
|                   |   |
|-------------------|---|
| Reverse Telecine  | This is the process by which the final edited video footage is printed back on to 35mm film, called the master negative. The negative is printed, copies of which are distributed to various theatres for exhibition. |
| Equipment Rentals | This includes Video equipment for indoor and outdoor shootings, including digital cameras, HD (high-definition) video cameras, motion control rig, etc.   |
| Other Services    | The other services include pre-visualization, title design, movie trailers, promotion clips, digital asset management and distribution etc.   |

### 14.3.6 Revenue Models

The company adopts 'Work for Hire' model for the services it renders to its clients. Prime Focus tried co-production model for 2 movies: 'Gayab' and 'Vaah-Life Ho To Aisi' in 2006. It achieved little success with the same. Since then, it has adopted 'Work-for-Hire' Model only.

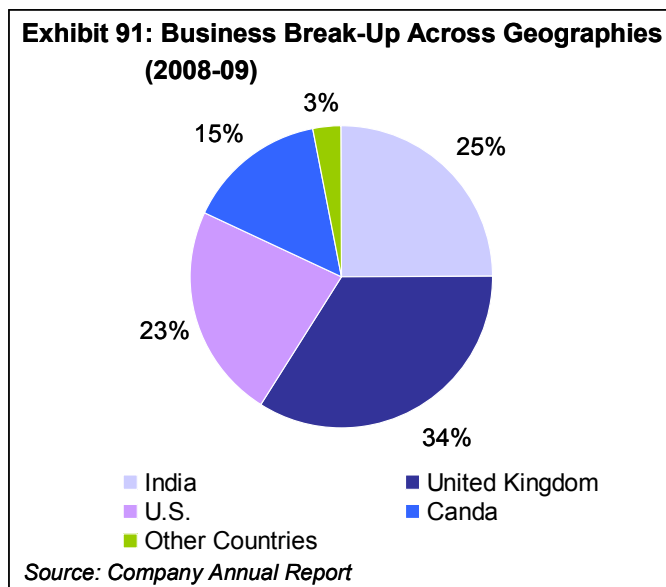
### 14.3.7 Revenues

The estimated revenue for Prime Focus, consolidated across all its locations is ~USD 78 million (FY 2009), having grown at a rate of ~ 34% p.a. (2007 to 2009).



Among all the verticals, Feature films (52%) are the largest contributor, followed by Commercials (Refer Exhibit 90). Among all the geographies, United Kingdom has the highest share of 34% followed by India and U.S. (Refer Exhibit 91). Revenues from

Prime Focus India stood at USD 19.8 million, from UK at USD 28.3 million and from US at USD 27.4 million (*Refer Exhibit 91*).



#### 14.3.8 Future Plans

The company plans to continue with its focus on developing two key areas of business: VFX and Digital Asset Management. The company expects an increase in demand for VFX in India, UK and North America as well as an increase in off-shoring opportunity from UK and North America. The company is also planning to leverage its proprietary digital asset management system 'CLEAR' for an increase in demand for digital re-mastering and cataloguing content.

## **14.4 Visual Computing Labs (VCL), a division of Tata Elxsi**

### **14.4.1 Company Description**

Visual Computing Labs (VCL) is a division of Tata Elxsi Limited, part of the multibillion-dollar Tata Group of Industries. It was founded in 2001 and is focused on providing world-class, quality Animation (2D & 3D), Special Effects, and Gaming services to customers worldwide.

### **14.4.2 Geographical Presence**

Visual Computing Labs has its animation and VFX studios at Mumbai and a recently developed one at Los Angeles. Moreover, it has sales offices in Chennai, Paris, and in Milton Keynes.

### **14.4.3 Holding Structure**

VCL is a division of Tata Elxsi, a public stock company traded in the Indian stock exchanges. The major share holders as on March 31st, 2009 are:

Tata Group – 44.26%

Individuals – 32.18%

Mutual Funds, FI's, FII's – 18.14%

### **14.4.4 Employee Details**

VCL has an employee base of around 270 people as on December 2009 with ~225 people based out of their Mumbai development centre, ~ 20 people based out of Los Angeles and the others out of their sales offices. VCL has recently brought on-board three of the field's most accomplished professionals - Joel Hynek, Tricia Ashford and Treva Blue for their Los Angeles office. It recruits people of various backgrounds - computer graphic artists, sculptors, engineers, bachelors of fine arts etc. The division has tied up with University of Southern California for a training program for its recruits. Periodic trainings are provided to its employees to upgrade their skills.

### **14.4.5 Service Offerings**

The division offers services in 3D computer graphics, animation and visual effects for Advertising, Film & TV, and Gaming, both in India as well as internationally. Though it

has a diverse portfolio of services, its expertise has been in 3D animation and visual effects.

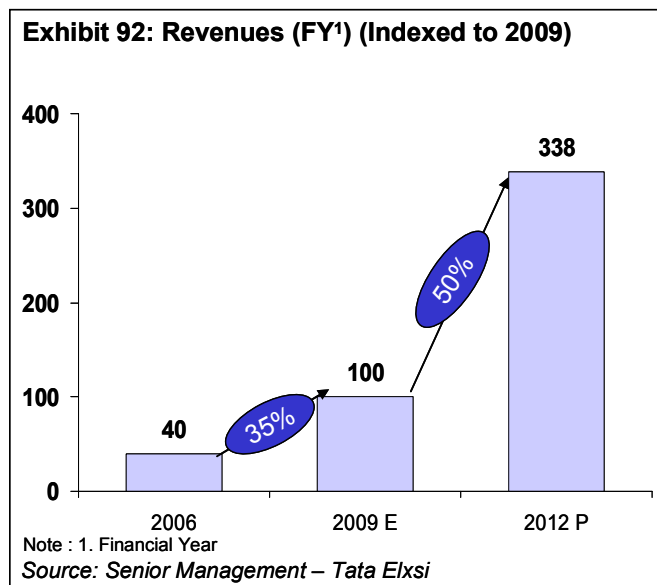
- For India, its services have been focused on 3D Animation and VFX Only. The services have been offered across the value chain: pre-production, production and post-production. The division has done work for Roadside Romeo – India’s first fully animated 3D film co-produced by Walt Disney and Yash Raj Films. Though the movie was not a commercial success, it earned critical acclaim and was nominated for the prestigious Visual Effects Society (VES) awards.
- For the overseas markets, it has pre-dominantly worked on the ‘production’ part of the value chain.
- The division has including gaming into its portfolio of services very recently.

#### 14.4.6 Revenue Models

The company adopts Work for Hire model for the services it renders to its clients. The management wants to avoid any risk-sharing models as of now and continue with the same model.

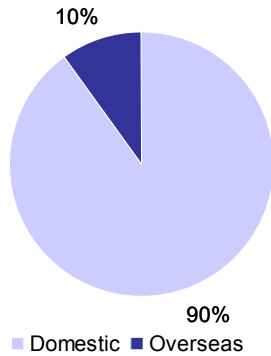
#### 14.4.7 Revenues

The current revenues of VCL could not be estimated. However, it has grown at a rate of 35% p.a. (FY 2006 to 2009). The management expects this growth rate to increase to 50% for FY 2009 to 2012.



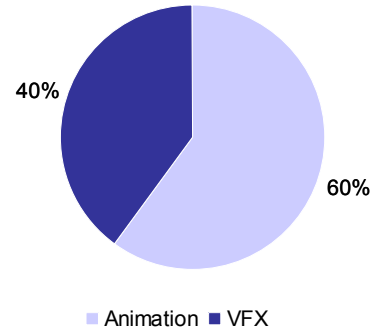
VCL derives 90% of its revenues from the domestic market and only 10% from the overseas market. Within the domestic market, more than half of the revenues are from the Animation Services (Completely 3-D) and the rest from Visual Effects. For the

**Exhibit 93: Geographical Revenue Split**



Source: Primary Interview

**Exhibit 94: Domestic Revenue Split (FY 2009)**



Source: Primary Interview

overseas markets, it is mostly visual effects.

#### 14.4.8 Future Plans

- The division is planning to increase its international presence to tap the international market and also build a pipeline for its India office. The recently opened office at LA is also a step in this direction. The division is targeting a revenue split of 50:50 (Overseas/Domestic) from the current 90:10(Overseas /Domestic) in the next few years.
- The division is aggressively targeting European markets as production houses there are getting into a cost cutting mode, thus leading to a large opportunity.
- The division plans to build its presence in gaming.
- VCL plans to increase its focus on custom content development for corporate internal communications. It also expects an increase in business from TV commercials segment in the domestic market. Currently it is as low as 10% of their domestic revenues.

## **14.5 Tata Interactive Systems**

### **14.5.1 Company Description**

Tata Interactive Systems (TIS), part of multi-billion dollar Tata Group, is a global pioneer in e-learning. It was founded in 1990 and is focused on providing innovative, custom workforce performance solutions for blue-chip corporations, renowned educational institutions and government bodies worldwide.

### **14.5.2 Geographical Presence**

Tata Interactive Systems is based out of Mumbai. Its other development centres are in Kolkata (India), Tübingen (Germany) and Zurich (Switzerland). Moreover, it has sales offices in Australia, Germany, Switzerland, UAE, UK and USA.

### **14.5.3 Holding Structure**

Tata Industries hold 100% in Tata Interactive Systems.

### **14.5.4 Employee Details**

Tata Interactive has ~600 people as of December 2009 with around 400 people based out of Mumbai office and around 160 out of Kolkata office. Tata Interactive recruits from the best of the business and design schools in the country and imparts them a rigorous and exhaustive training program on the job.

### **14.5.5 Service Offerings**

The company offers its services in the Custom Content Development for the corporate, educational institutions and government/defence organizations. Within Custom Content Development, the services can be categorized as below:

➤ **Web Based Training (WBT)**

These training applications are for various processes like soft skills training, sales training, and product training and alike.

➤ **Software Solutions (SS)**

Software Solutions include Portals, Learning Management Systems and Learning Content Management Systems, Assessment Solutions, Custom Applications and Products, M-Learning, Content Migration Solutions and Content Conversion.

➤ Simulations

The business simulations enhance business acumen by allowing the learners to experience real-world situations and learn from their mistakes, in a safe and immersive learning environment. The modules are on Leadership Development, Executive Development, Marketing, Finance and Accounting, Management, HR and OB, Health Care.

➤ Electronic Performance Support Systems (EPSS)

EPSS combines the best features of knowledge management systems and decision support systems providing on-demand business process guidance.

➤ Serious Games (SG)

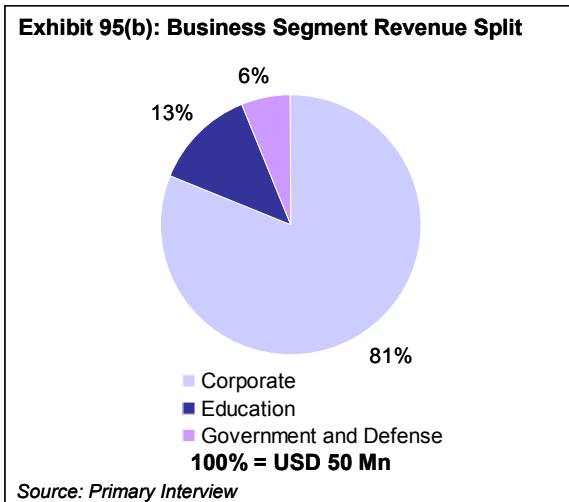
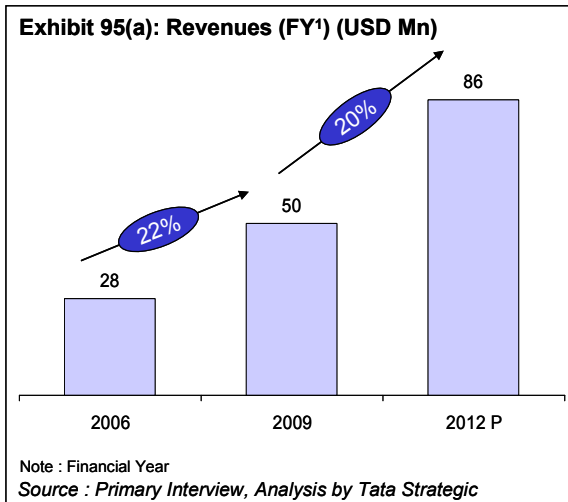
Tata Interactive Systems develops games based on well-defined instructional methodologies and frameworks involving learners in concepts that are otherwise difficult to teach.

#### **14.5.6 Revenue Models**

Tata Interactive follows multiple revenue models varying from project to project. These are Work for Hire, License for Content, License for Learning Management System and Revenue Sharing. Amongst these, Work for Hire is the one used most often.

#### **14.5.7 Revenues**

The revenues of Tata Interactive have grown at a rate of 22% p.a. for the period 2006 to 2009 and are estimated at ~USD 50 million for the financial year 2009. The management expects the growth rate to be 20% for the period FY 2009 to FY 2012.



Tata Interactive derives 90% of its revenues from the overseas market and only 10% from the domestic market. Within the overseas market, more than half of the revenues are from North America (72%), followed by UK (9%) and European Union (4%) with Middle East, Australia and New Zealand contributing the remaining.

Tata Interactive caters to Corporate Sector, Education Institutes and Government Bodies. Of these three segments, Corporate Sector contributes the major share (~81% of the overall revenues in FY 2009) (Refer Exhibit 95(b)). Within the corporate sector, IT, Communications and Telecom vertical contribute the highest (~one third of the overall corporate sector revenues). Hospitality, Airlines, Logistics & Transportation, Manufacturing, Energy & Construction, and BFSI (Banking, Financial Services and Insurance) are the other contributing verticals.

#### 14.5.8 Future Plans

Tata Interactive has recently aligned its marketing strategy to ensure a greater focus on industry verticals including:

- Education
- Government and Defence
- Pharmaceuticals and Health Care
- Banking, Financial Services and Insurance
- Airlines, Transportation, Logistics and Hospitality
- Consumer Package Goods
- Manufacturing, Energy and Construction

## **14.6 Indiagames**

### **14.6.1 Company Description**

Indiagames was founded in 1999 and has evolved as a leading player operating across mobile, PC and online gaming. Of the three segments, Indiagames is an industry leader in mobile gaming and has significant presence in PC and Online gaming as well. Apart from developing and publishing games, Indiagames also provides distribution services to international players.

### **14.6.2 Geographical Presence**

The company is based out of Mumbai with sales and marketing offices in London, Los Angeles and Beijing.

### **14.6.3 Employee Details**

Indiagames has an employee count of ~240 as on December 2009, with most of them based out of the Mumbai development office. The company recruits from various college campuses and imparts them a six month in-house training on game development before they are deployed on projects. The attrition rate for the company is around 7%.

### **14.6.4 Holding Structure**

Indiagames is a privately owned entity. The shareholding structure as on March 31 2009 is:

UTV : 56%

Management : 30%

Cisco + Adobe : 14%

### **14.6.5 Service Offerings**

Indiagames has two service offerings: Development, Distribution and Publishing for the self developed content and Distribution for the International publishers.

- Development, Publishing and Distribution (Self-Developed Content)

The company initially started with low end flash games. After the dot com burst of 2000-01, it shifted its focus onto mobile games with porting flash games to mobile for Nokia.

Over the period it has become a mobile game publisher with in house mobile game development on various platforms like J2ME, BREW etc. It offers mobile games to the handsets as embedded ones or as a part of Value Added Services (VAS) for the mobile operators. It made a foray into online gaming in 2004-05. Indiagames publishes its in house developed games only.

Internationally the company publishes mobile titles via its IG FUN brand - the international mobile publishing and development arm of Indiagames focused on the European and the Americas markets. IG FUN has developed and published licensed titles with most of the major Hollywood based movie studios including 20th Century Fox, Miramax, New Line Cinema, Sony Pictures and Universal Studios.

The Company also distributes games via its consumer focused website and operates a broadband Games on Demand service located at <http://www.indiagames.com>. The customer needs to buy a monthly subscription which allows him to choose from over 250 PC games and download them from the Indiagames website to his PC. For this, the company has tied up with leading broadband service providers like BSNL, Airtel, MTNL, Tata Indicom and others.

➤ Distribution (for International publishers)

Indiagames also offers distribution services to international game publishers like Electronic Arts (EA), Digital Chocolate, SEGA and others.

#### **14.6.6 Revenue Models**

The company has two revenue models - revenue sharing model where in it shares revenues with telecom operators, handset manufacturers and websites and the distribution Service Revenue model.

➤ Revenue sharing with telecom operators

The company shares revenues with the telecom operator for each game that is downloaded by the operator's customer and for the monthly subscription that the customer takes for playing games. This is an operator led market where operator acts as the billing provider who in turn shares revenues with Indiagames. The revenue sharing varies from operator to operator and from game to game and is generally 50:50 with the

Indian operators. Internationally, the company enters into a minimum guarantee with the telecom operator. It has tie ups with more than 70 telecom operators worldwide.

➤ Revenue sharing with handset manufacturers

The company shares revenues with the handset manufacturers for the embedded games that it provides. For every handset sold, the handset manufacturer pays a fixed amount to Indiagames.

➤ Revenue sharing with the websites

Indiagames has its website links on various other websites. If the customer is led to Indiagames' website through these links, then Indiagames has to share revenues with the originating website as a part of customer acquisition fee.

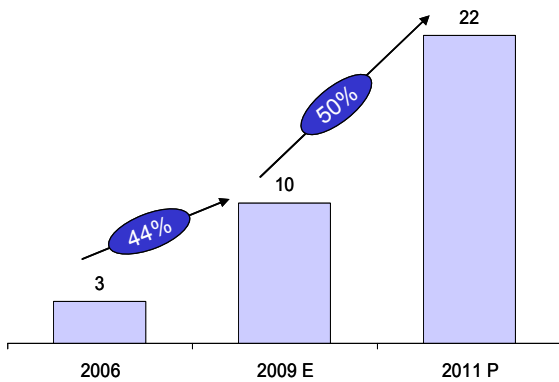
➤ Revenue from Distribution Services

Indiagames partners with International publishers and provides distribution services in India for their games. Some of these are also competitors to Indiagames in the Indian market.

#### **14.6.7 Revenues**

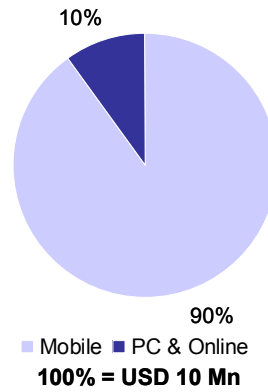
Indiagames revenues for the financial year 2009 are estimated at ~ USD 10 million. The company has seen a significant growth from 2006 to 2009 and expects it to increase to 50% p.a. for the period 2009 to 2011. 90% of its revenues are from mobile game segment with the remaining 10% coming from PC and Online.

**Exhibit 96: Revenues (FY) (USD Mn)**



Source : Primary Interview, Annual Report, Analysis by Tata Strategic

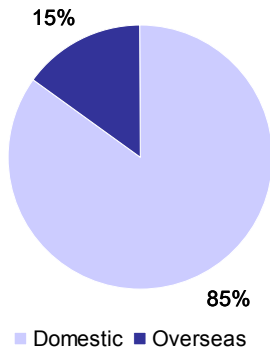
**Exhibit 97: Business Segment Revenue Split**



Source: Primary Interview

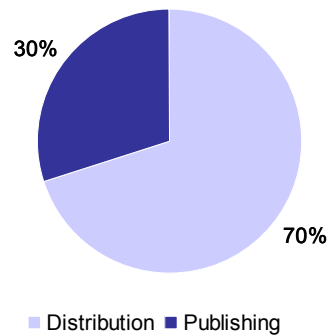
The Indian market accounts for 85% of the revenues with remaining 15% coming from overseas; US, UK and Australia being the major markets. Of the domestic revenues, ~70% comes from the distribution business that Indiagames does for international publishers.

**Exhibit 98: Geographical Revenue Split**



Source: Primary Interview

**Exhibit 99: Domestic Revenue Split**



Source: Primary Interview

The profit after tax for the FY 2009 stood at ~ USD 48,000 which translates to a PAT margin of only 0.48%.

#### **14.6.8 Future Plans / Focus Areas**

- The company's focus in last 2 to 3 years has been on PC and Online games. Though the mobile games would be the leading segment in which company operates in, focus on PC and Online is planned to be increased further. The company is planning to target broadband users through telecom players like BSNL, MTNL and Airtel.
- The company is eyeing an increased demand for gaming through DTH (Direct-to-home) and IPTV (Internet Protocol TV). To enter this market, it has recently inked a deal to power games on Reliance BIG TV DTH. Indiagames will make available eight games on BIG TV DTH, for a subscription fee of 64 cents a month.
- The company also has plans to enter into cross platform multiplayer gaming market wherein it will develop games that can be played by different players across mobile, PC and online simultaneously.

## **14.7 Dhruva Interactive**

### **14.7.1 Company Description**

Dhruva Interactive was founded in 1997 and is India's oldest gaming company. Over the years, it has matured to become one of the leading game art service providers in the world. The company has two independent studios – Game Art Studio and Games Studio and is involved in developing and publishing games for PCs, consoles and mobiles. Dhruva Interactive has recently spun off an organization - GameTantra Digital Entertainment Pvt. Ltd. GameTantra primarily focuses on publishing casual games for the domestic and international markets.

### **14.7.2 Geographical Presence**

The company is based out of Bangalore, which is its only geographical presence.

### **14.7.3 Holding Structure**

Dhruva Interactive is a privately held entity with angel investors holding minority stake.

### **14.7.4 Employee Details**

Dhruva has an employee base of around 100 people as on December 2009, all of them based out of their Bangalore office. The company recruits from various engineering colleges and from National Institute of Design. It invests heavily in employee training with 6 to 8 months of training in game programming and another 2 to 3 months training in game art.

### **14.7.5 Service Offerings**

Dhruva interactive is primarily an outsourcing service provider with two studios – Games Arts Studio and Games Studio. It provides game art outsourcing services to global videogame players through its Games Arts Studio. This studio has created content for over 30 AAA titles, with genres spanning Racing, Action/FPS, Sports and movie based games and has earned the reputation of being amongst the top 5 providers of art outsourcing services. The Games Studio is an in-house game development studio specializing in digitally distributable games like downloadable PC Casual games and iPhone games. The studio has successfully worked with international publishers such as Sandlot Games, Iplay (part of Oberon Media), Microsoft Casual Games and others.

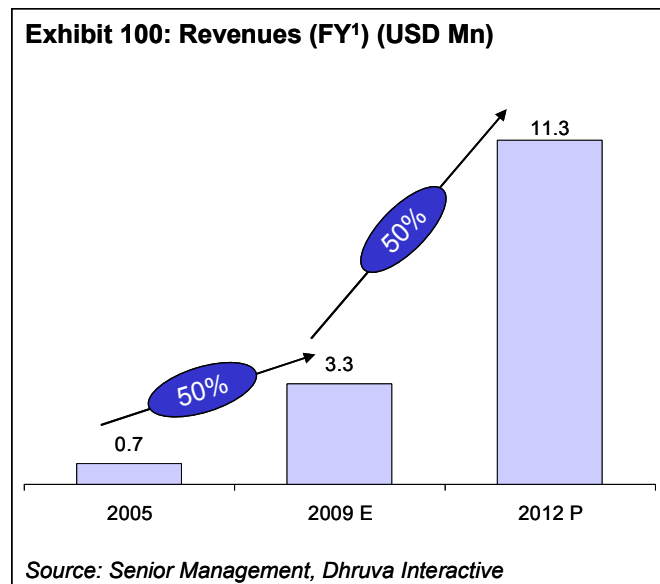
### 14.7.6 Revenue Models

The company adopts 'Work for Hire' model for the services it renders to its clients.

### 14.7.7 Revenues

Revenues for Dhruva Interactive are estimated at ~ USD 3.3 million for FY 2009. The organization has maintained a very healthy project pipeline, especially in the last couple of years. The organization has grown at a rate of ~50% from FY 2005 to FY 2009.

The management expects the growth trend to continue at the same rate for the period 2009 to 2012 and expects to cross USD 5 million turn-over by March 2010.



Dhruva Interactive derives almost all of its revenues from the overseas market. Within the overseas market, around 40% to 70% of the work has traditionally come from US and Canada. UK and other European countries are the other major contributors to its revenues. Most of its revenues come from console gaming services.

#### **14.7.8 Future Plans**

- Focus on services for the overseas market: Dhruva Interactive plans to continue the current strategy of being a services provider and operate on a work-for-hire model, primarily for the overseas markets. Lack of gaming eco-system in India is the primary reason for low focus on the Indian market.
- Focus on Client Retention & Penetration: Dhruva Interactive feels that there is a large potential within its existing Clients itself. It plans to focus more on building deeper associations with its existing Clients.

## **14.8 Trine Entertainment**

### **14.8.1 Company Description**

Trine Entertainment was founded in August 2006 and has evolved as a leading gaming development and publishing company in India for the console platform.

### **14.8.2 Geographical Presence**

The company is based out of Mumbai, which houses its major facility. The organization has a presence in Delhi as well, housing a 25-member team only.

### **14.8.3 Holding Structure**

The organization is 100% owned by the management.

### **14.8.4 Employee Details**

Trine has an employee base of around 140 people as on December 2009, with 115 based out of Mumbai and 25 working from its Delhi office. The organization has a large no. of foreign nationals in its team. In-fact, all the members of its 'Core Design' team and 'R&D Team' are from the US or European countries. The company conducts an intensive in-house training for its employees.

### **14.8.5 Service Offerings**

Trine offers end-to-end game development services for the PC and the console platform for international publishers. The organization has completed developing 5 games for the console platform and is in the process of developing 4 titles: 2 titles for Playstation 3 & Xbox, 1 title for PSP & PS2, 1 title for X-Box only. The organization has not yet gained any exposure to a PC Game Development Project. Trine has relationships with key global gaming publishers. Sony, Ubisoft, Vivendi, Codemasters, Dreamcatcher, Jowood constitute its client list.

### **14.8.6 Revenue Models**

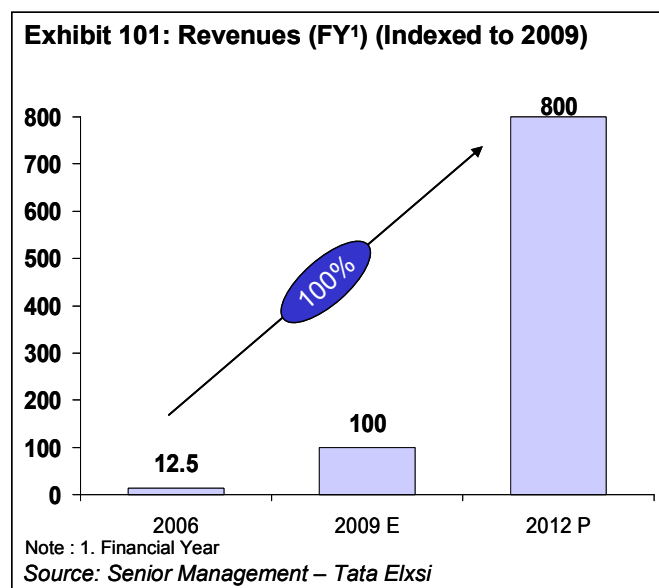
Trine operates on a 'Work-for-Hire' and 'Co-publishing' model, co-publishing model being the dominant one.

- Work for Hire: Services rendered on a man-day basis.

➤ Co-Publishing: In this model, Trine, in addition to providing its services for game development provides capital for end-to-end development of the game, along with the publisher. Revenues accrue as a percentage of the sales of the game globally.

#### 14.8.7 Revenues

Revenues for Trine for 2009 could not be estimated. However, it has grown at 100% p.a. for the last 2 years and is estimated to continue its growth rate for 2010 and 2011.



As Trine works primarily on a co-publishing model, its revenues are directly proportional to the sale of its games across geographies. Its work-for-hire revenues are 100% from the overseas publishers.

#### 14.8.8 Future Plans

As an overall strategy, Trine plans to continue its focus on the co-publishing model, targeting the overseas publishers. The organization has plans to expand its presence in Delhi. However, it is contingent on confirmation of a couple of assignments in its pipeline. The company is planning to open a marketing offices in the US and UK, primarily to develop better relationships and communication with the international publishers.