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Multimedia animation outsourcing : capstone proposal ...

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CALIFORNIA STATE UNIVERSITY
MONTEREY BAY

Multimedia Animation Outsourcing

CAPSTONE PROPOSAL

Submitted in partial satisfaction of requirements of the
degree of
MASTER OF SCIENCE
Management and Information Technology

Emily L. Garnero
May 15, 2005

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Executive Summary

Multimedia animation outsourcing is the topic of my capstone research. This topic is an investigative resource for companies who are currently or planning to use multimedia outsourcing now or in the future. The capstone process includes a background, hypothesis, methodology, resources, milestones, evaluation and a qualitative interview analysis.

This capstone project is implemented in a three-fold proposal. Phase I is the research portion of current companies who are outsourcing in animation. The second phase involves qualitative interviews of five or more companies. The final phase would determine a hypothesis analysis with new research findings. A written research paper will be submitted along with web internet site for companies and researchers to access.

The kinds of tools used in this document are unique comparatively to most capstones. The companies interviewed covered a complete array of multimedia animation points in this research project. Different types of animation at different levels of knowledge of outsourcing from small to large companies have influenced the final hypothesis of this research. These companies have all had some type of growing pains in their learning curves in their animation outsourcing experiences.

The interviews questions were design to access a comparative analysis to determine both sides of the outsourcing perspectives. Ultimately the information received from these companies provided new information for companies that are either new, intermediate or advanced in multimedia animation outsourcing. This will provide a basis for companies that are considering outsourcing their animation in the future.

Introduction/Background

Multimedia animation is defined as converting still imaging and designs into action. Outsourcing to companies to that specialty in this is still relatively new. Outside of Hollywood, onshore, India is the second largest offshore country

doing multimedia animation. Some of the animation categories researched in this project including;

- Visual Communication
- Architecture
- Digitalizing
- Science and Medical Illustrations
- Computer animation
- Architectural and mechanical design,
- Medical Animation and Medical
- Illustrations Mechanical Drawings, Conversion Services -
3d Models
- 3D Rendering and Virtual Room Design

Lynell George writes in LA Times that local animators are feeling the effects of outsourcing to other countries; “outsourcing,” of course, being the umbrella term that includes what the live-action side of the industry calls “runaway production”(George 2004).

The literature survey will be conducted from several sources including a complete analysis of current and historical trends

My contention is that distributing production globally is both inevitable and beneficial to all sides. Among other benefits, the efficiencies from outsourcing: A. Democratize the financing of animation, opening it up to a much wider pool of independent creators; B. Expand the market (more movies, shows, and games will be made because of lower-cost requirements); C. Protect creative jobs in otherwise marginal businesses; D. Create more and better work in the developing world that will benefit all; and E. Improve job stability by evening out the boom-and-bust cycle of big budget productions. (deGraf 2004)

Current trends literature information indicates that multimedia animation outsourcing is improving in the global market but the expansion of the market in the global market is still in a learning curve. The main problem description is U.S. economic stability and protecting jobs. Working in a global market without

boundaries is outsourcing main concern. Existing research and theories are contributing to a world wide education toward the learning curve. This final capstone will also accomplish what has been done and what is going on related to multimedia animation.

Project Phase I

Phase I of this project involves the literature study, definition, history and current information in the industry. In this portion of the project, the research involves the current companies that are outsourcing in animation in a literature study which is updated in the final phase to determine a hypothesis new research findings conducted in qualitative interviews of other companies. This written research paper will be published in web internet for companies and other researchers to review.

A comparative analysis of the pros and cons of outsourcing is the basis of my research using at least interviews of at least four small to medium businesses (SMB) and one large company. Literature studies of companies like Disney or Pixar animation will be influential in the final hypothesis since both of these companies have had growing pains in their experiences in multimedia outsourcing. This supports the comparative analysis since Disney does outsource but Pixar does not and has a full In-House Animation Studio.

The interviews questions are designed to include all phases of issues in that are now in animation outsourcing. The intentions of the final hypothesis would be to answer many of the concerns companies may to have and provide the information necessary to the question whether to outsource or to not outsource in multimedia animation. At the present time there are a collection of information scholarly as well as information on this topic but since multimedia animation outsourcing is a relatively new industry it is in its growing phases of technology.

The three hypothesis questions and project goals researched in this project are;

- What are the comparative pros and cons of multimedia animation outsourcing?

- What the benefits/disadvantages of multimedia animation outsourcing are in terms of costs, quality and time effectiveness?
- What are the historical, current and future trends in multimedia animation?

The purpose of this research is to have a comprehensive study from a qualitative survey, in depth scholarly research and final conclusion of both sides of company's experiences for the audience to obtain information for the purpose of adding to their own analysis of outsourcing in multimedia animation.

Literature Study

The literature study research portion of the project included a detail description of the various types of outsourcing and the project costs. Animation outsourcing history, trends and trend analysis gives a background on the progress made using a couple of large key companies that played a significant roll in the development of animation and multimedia animation outsourcing.

Defining Multimedia Animation Outsourcing

In order to conduct an effective literature study it is important to define the basic infrastructure of multimedia animation outsourcing.

Easy projects are applications with already solidified and unchanging design requirements. The hourly rate of the project costs less than \$30 in the U.S.

Complex Projects are the Multimedia Animation Outsourcing projects that will cost over \$30 per hour in the U.S.

Multimedia Animation Outsourcing is an arrangement in which one company provides offshore, near shore, onshore (or domestic) Multimedia Animation Outsourcing services for another company that could also be or usually have been provided in-house.

Onshore Outsourcing (also called domestic outsourcing) is the obtaining of services from someone outside a company but within the same country.

Nearshore Outsourcing is the practice of getting Multimedia animation services performed by people in neighboring countries rather than in your own country. Many companies in the United States, for example, outsource work to Canada and Mexico.

Offshore Outsourcing, a type of business process outsourcing (BPO), is the exporting of Multimedia Animation-related work from the United States and other developed countries to areas of the world where there is both political stability and lower labor costs or tax savings.(Garnero, Jin 2004)

History

In the beginning animation was done in a very complex archaic way in comparison to modern technology. It was done by hand with multiple cameras and repetitive screen shots of the object in sequence to produce a movement effect. It was not until George Lucas of Lucas Films, wanted to find a faster way to make space ships fly around for the movie Star Wars. Several models were set up and control cameras were used in several series camera shots which produced his goal but it was a very expensive. He really wanted to find a quicker way to get light sabers moving on screen without having to hand animate, that was not only costly but had a significant time investment. Lucas then hooked up with a couple of people who had been working on some 3d animation software that at that time did not quite work yet. He hired them and they formed a company called Pixar.

Lucas developed and invested a lot of money toward that venture but unfortunately a divorce occurred in his life. While trying to keep control of Star Wars and Lucas Films, he then decides to sell Pixar to Steve Jobs the founder of Apple Computer. Jobs then hemorrhages all a lot of money into development in Pixar Animation Studios for the following 4 years. The company never really produces much of anything in this developmental phase except for a couple of ads for Listerine mouthwash, which was the first look the public had at 3d animation. The Listerine ads were not making enough money for Steve Jobs but in a way it was being invested into the future necessity of development. Jobs was being fleeced by both of his companies. He then decides to go to Disney and signs a

deal with Eisner to produce animated movies. Toy Story I comes out which was a tremendous success by the end of the day at 47 per share. Pixar is suddenly worth billions of dollars. That is in a nut shell how 3d animation got started. The smaller users started buying off the shelf software. There was a program called Infinity in 1994 and ran on a Mac but it was slow but very effective cutting edge technology at the time. (Kuslich. S. 2005)

Industry Trends

2d animation is the trend offshore now and in the future. 3d animation just takes 4 or 5 people to create with the current software development. 3d will be more onshore for a while. (Dupstadt, N. 2005)

Paradoxes occurred within companies organizational values on whether to outsource or utilize the talents of existing workforce. Disney (1928) is the primary companies under the media's eyes regarding animation outsourcing. There were differences within the corporate team. Michael Eisner, CEO and Board of Director did not understand why they needed to outsource their animation when they had the resources with their employees. Roy Disney new in order to stay competitive they must outsource and that was the only reason why Eisner switched was because Disney said he had to (1985).

Roy E. Disney was determined to protect the Feature Animation division from complete extinction. The feature animation business is an unusual one, but Roy understood the economics of Feature Animation and he wanted to maintain this Disney tradition. If Roy Disney had not put his foot down in defense of Feature Animation when he did, the "outsourcing" situation would have happened as early as twenty years ago. (deGraf, B.) Even within Disney's company they had divided beliefs in pros and cons for and against animation outsourcing.

NASSCOM study (2003) in global animation production market allows a host of opportunity for India, the primary outsourcing country.

The study, which is based on multiple statistical projections on the market, from segments such as industry sources, Pixel Inc. and Arthur Andersen

forecasts that the global animation market will generate revenues worth US\$ 50-70 billion by 2005. (NASSCOM 2003)

The main cities in India leading in outsource animation are Mumbai, Chennai, Bangalore, Hyderabad and Trivandrum. These cities include companies like Crest Communication, Films Division, Maya Entertainment, Silvertoon Studio, UTV Toons, Zee Institute, Toonz Animation and more. These studios participate in the cost effectiveness in the multimedia outsourcing animation realm.

Industry/Profession Trend Analysis

Multimedia Animation has skyrocketed since the introduction of Pixar's movie Toy Story I directed by John Lasseter in 1995. Everyone is on the animation craze from 2d to 3d. Macromedia Flash, Adobe After Effects, DesignCAD, Carrara4 and many more off the self products. Multimedia Animation is the wave of the future.

From its earliest incarnation as simple drawings photographed in sequence to evoke a sense of movement, to the sophisticated rendering capabilities of today's computer generated imagery, animation has undergone significant progression and advancement fueled by both artistic and technical innovations. But whether it's the beautifully hand-drawn animation cels that come together to create the classic artistry of a Snow White and the Seven Dwarfs or the cleverly crafted lumps of clay that tell the amusing tales of Wallace and Gromit, or the ingenious, albeit straightforward, presentation of Captain Pugwash in 3D, animation styles are often determined by the content and environment of the story it's trying to convey. (Falzon, C.2001)

Outsourcing in the animation industry is a different story. The technology animation outsourcing is so young in comparison to design desktop publishing and other multimedia cannot be bought off the shelf. Many companies in order to provide quality outsourcing animation are developing the technology In-house according to Stephan Kushlich, Vice President of Ghost Productions, Inc. According to them companies would have to buy their services (i.e. Outsource) in order to get the technology provided by the software developed by their company.

You cannot buy that kind of production at a store. This is what the existing theories that are in Multimedia Animation Outsourcing. Companies are finding that in order to get quality, cost saving, profession 2d and 3 d animation outsourcing is an effective solution to the problem. Some of the off of the shelf software serves a purpose in smaller job production for a client to client relationship but may be more difficult to achieve large production development for a company in larger capacities.

"The Indian animation industry is seen to have the potential to touch revenues of over \$1.5 billion by 2005 from the current level of \$1 billion". (Computer Animation - qtd. In The Economic Times, November 19, 2003)

Some of the advantages of animation outsourcing is

- State of the art equipment
- Leading skilled trained animationist.
- Advanced Sound and post production. (Dawes, B)

Some of the barriers in animation outsourcing can be language barriers, managing cultural differences, transitioning to the global market place. Companies outsourcing to other countries will have to anticipate cultural and business differences. According to the Indio-Asian News Service New Delhi, West Bengal government is gearing up there IT to have a competitive advantage in animation outsourcing for onshore and offshore companies. This is a source of capitalizing by educating low-skilled professionals. "Animation is certainly going to be a focus area for us in the coming years. We believe we have all the requirements to emerge as the animation outsourcing hub. "I think we will be in an ideal position to offer animation services to companies all across the world if we merge the creativity aspect with the advancements in the field of IT. The animation academy is just a first step towards this," said West Bengal IT Minister Manabendra Mukherjee. (Chatterjee, S. 2005)

India is the biggest in the global animation outsourcing. The Major India Players are as follows;

- Crest Communications
- UTV Toons

- Pentamedia Graphics
- Padmalaya Telefilms
- Moving Pictures
- Toonz Animation.

Animation outsourcing in India cost are cheaper than any of the major global countries including U.S. Canada, South Korea and the Philippines. Animation production for a job costing 250K-400K in U.S. cost 60K in India. A company would be saving 90K for a half of hour of production in India verses U.S. or other leading global animated outsourcers. Total global animation estimates from 600M in 2001 to 51.7B in 2005. Trained, educated lower paid animators contribute to cost effectiveness that is so globally attractive. The red carpet has been rolled out by the communistic–ruled state for animation outsourcing.

In recent years, Thailand has drawn Lucas Films Animation, which is starting an outsourcer’s center for their animation. Lucas Films has come out with several episodes of animated Star Wars movies included. (U.S. State Government 2005)

1977- Star Wars Episode III

1980-The Empire Strikes Back

1983-Return of the Jedi

1985-Ewok Adventures-Caravan of Courage

1997-A New Hope

1999 - The Phantom Menace I

2004 -The pirates and the Prince/Treasure of the Hidden Planet

2004- Ewok Adventures- The Haunted Village Tales from Endor Woods

2003- Clone Wars

2003- Attack of the Clones Vol. I

2005-Attack of the Clones II

Revenge of the Sith Release date May 19, 2005

Lucas Films, and Disney and Pixar Animations Studios Onshore and Offshore have become some of the main players in the World Trade Organization for development in past, current and future animation industry.

Why Pixar Animation Studios

Pixar, (1995) on the other hand being the beginning landmark of the technological boom in computer animation, headquartered in Emeryville, California has a different strategy about multimedia animation outsourcing. They have chosen *not* to outsource. The company has its own studio that fully equipped and staffed to do its own animation.

Pixar Animation Studios (Nasdaq: PIXR, <http://www.pixar.com>) combines creative and technical artistry to create original stories in the medium of computer animation. Pixar has created six of the most successful and beloved animated films of all time: *Toy Story*, *A Bug's Life*, *Toy Story 2*, *Monsters, Inc.*, *Finding Nemo* and *The Incredibles*. Pixar has won 18 Academy Awards® and its six films have grossed more than \$3.2 billion at the worldwide box office to date. The Northern California studio will release its next film, *Cars*, on June 9, 2006.

A story idea is pitched using several sketches.

- A Text Treatment is written summarizing the main ideas.
- Storyboards are drawn.
- Voice talents are recorded to see what would match the characters.
- Editorials begin making reels.
- The art department creates the look and the feel.
- Models are sculpted and articulated.
- The sets are dressed.
- The shots are laid out.
- The shots are animated.
- Sets and characters are shaded.
- Lighting completes the look.
- Computer data is rendered.
- Final touches are added. (Pixar 2005)

Pixar Animation Studios, of all multimedia animation are heavily revered by most animators in the industry because of their contribution to its creativity

including its success to one of the newer technological industry in computer software development.

Project Phase II

Methods/procedure/tools

The second phase involved methods involved qualitative interviews of five or more companies that are currently or has been developing multimedia animation outsourcing in a small, medium and large businesses.

The procedures and tools involved a research plan to determine the area necessary in what topics were necessary to research in the questionnaire to the companies involved to determine the final hypothesis in Multimedia Animation Outsourcing.

Research Plan

In the research phase of this research conducted quantitative interviews we to obtain scholarly studies on multimedia animation outsourcing. Onshore and offshore outsourcing in multimedia animation creates an uncertainty among many companies. Research on this topic offers information for these companies that would be able to show the pros and cons and financial factors on this topic that would contribute toward the decision to outsource or to utilize resources within their own organization. Important issues like quality, time, costs, and social responsibilities to the United States workforce will be integrated in this outsourcing dilemma.

Research information in multimedia animation outsourcing would affect upper management, stakeholders and employees. A thorough statistical analysis in the decision making choices from the management team would determine whether to outsource or to use the employees within the company. Outsourcing to the right companies with a standard of excellence where their animation core competencies is beneficial to quality, time completion and change the cost of the companies projects.

In order to enlighten the audience about this research it was necessary to conduct qualitative interviews with a selection of companies with both success and failure experiences. Disney outsources to India and Pixar has complete in-house animation studios and are two companies right now would be beneficial to compare the advantages and disadvantages of animation. But it would take a more inclusive research to find other companies that have had negative experiences in order to have a fair assessment in the final hypothesis.

Preliminary Qualitative Interview

The interviews conducted contained the following topics in the questionnaire. The below topics were that are the issues in the industry trend in decision analysis toward multimedia animation outsourcing.

Business Description

Animation Outsourcing Experience

Saving Time

Increasing Quality

Animation Resources (to animate for other companies)

Budget

Saving cost for Companies

Responsibilities for Standards and Support

Employee Responsibility

Hiring More Employees

Employee Termination

Animation Outsourcing versus In-House Development

In-House Set Up Costs (Total and real costs)

Internal Company Value (the value of doing it themselves)

Current multimedia Animation Outsourcing Issues

In-House Animation Disadvantages-(What are your views for companies do not have the time, resources or expertise for who are not outsourcing animation to companies who specialize in multimedia outsourcing.)

Quality

Controlling Quality

Undesirable Quality

Social Issues

In-House Versus Onshore and Offshore

Offshore Cultural Issues

Animation Outsourcing Future Plans

Outsourcing Experiences (Unfavorable)

Multimedia Outsourcing Benefits

Training/Hiring Existing Employees

Pros and Cons

Benefits and Disadvantages

Historical, Current and Future Trends

Personal Views

Pros and Con

Benefits/Disadvantages

Opinions on Future Trends

Interview Overview

Several companies were selected in the interview list. Each company was examined on their size, type and levels of experience in 2d or 3d animation. This also included the types of outsourcing each company performs from Onshore, Nearshore, and Offshore. Some companies are in the beginning stages of Multimedia Animation Outsourcing where others have many years of experience. The companies are all ranges of business sizes from small to medium (SMB) to large companies to give a full sample testing in the animation industry.

The companies that participated in these interviews were as follows.

Name of Business: Ghost Productions Inc

Address 2233 Hamline Avenue North

Studio #600

Roseville, MN, 55113

Phone Number 651.633.1163

Fax Number 651.633.7089

Email: ghost@ghostproductions.com

Name of Interviewee: Stephan Kuslich

Job Title: Executive Producer

Number of Employees 9

Nature of the business: Medical 3d Animation

Type of Animation: Onshore, Nearshore, Offshore

Experience: 9 years

Website: www.ghostproductions.com

Business Description: Ghost Productions, Inc. is a SMB that specialize in 3d Medical Animation for surgeon education marketing. Almost all of the work that Ghost Production produces is 3d animations for large device manufacturing companies Abbott Spine for predominantly Surgeons for implants and surgical devices produced by Johnson and Johnson or other large medical companies. These large companies come to Ghost Productions to prepare the animations as educational devices to Surgeons and marketing of the medical animations are used by the Surgeons for patient education prior to surgery in layman's terms.

Name of Business: Animazing3D

Address: 1013 Meadow Breeze Lane

Sarasota, FL 34240

Phone Number 941-468-2147

Email: brian@Animazing3D.com

Name of Interviewee: Brian Smith

Job Title: Sole Proprietor Sole Proprietor

Number of Employees 3

Nature of the business: Architecture Animation

Type of Animation: Onshore

Experience: 5 years

Website:<http://www.animazing3d.com/index.htm>

Business Description: Animazing 3D utilizes the very latest in technology to produce stunning, photo-realistic computer animations and renderings as well as other graphical presentations. We pride ourselves in delivering unsurpassed quality, on time and at highly competitive prices. Located in beautiful Sarasota, Florida, our studio is in the center of one of the fastest growing areas in the country - southwest Florida. (Smith, B. 2005)

Animazing is a one of the few dynamic website ecommerce company that created 3D animation from architectural CAD software plan drawings. The website is designed so that the user knows exactly where to start. The company does architectural visualizations in 3D animations and is operated by a sole proprietor who outsources his work Onshore when the work load increase in Colorado. Animazing has a number of different types of clients being architects, developers, Real Estate Companies and Engineers that need 3d animations, developers, real estate agents, on rare occasions it could be engineers.

Business Name: Critical Thinking Company

Name: Niles Duppsstadt

Job Title: Vice President

Address: 1069 Broadway Ave.,

Suite 100, Seaside, CA 93955

P.O. Box 1610, Seaside, CA 93955

Email: NileD@criticalthinking.com

Phone: 1-800-458-4849, x. 125

Fax: 831-393-3277

Number of Employees: 25 full and part time employees and nearly 400 consultants.

Nature of the business: Educational Software and Animation

Type of Animation: Onshore, Offshore

Experience: 16 years as a business

New in Animation Outsourcing (2005)

Revenue of the company: 4.5 million

Website: www.criticalthinking.com

Business Description: Critical Thinking is software Development Company moving into 3D animation for the identification and evaluation of evidence to guide decision making. A critical thinker uses broad in-depth analysis of evidence to make decisions and communicate his/her beliefs clearly and accurately.

(www.criticalthinking.com)

Business Name: Datang Software Technologies Co. Ltd.,

Name: Sunny Sun

Job Title: Deputy GM of International Business Department

Address: No.40 Xueyuan Road,

Haidian District, Beijing

China P.C. 100083 PRC

Email: www.cattsoftc.com

Phone: 86-10-62302200

86-10-62304073

86-10-13001260979

Date of Interview: May 8, 2005

Number of Employees: 460

5 Resource and Development Centers

Revenue of the company: \$16,369,454

Nature of the business: Computer Software Animation Development

Website: www.datang.com

Business Description Datang Telecom has presented a series of state- and world-level products in such fields as Large-capacity SPC switches, Optical communication solutions, Wireless communication solutions, Full-service access network equipment, Telecommunication software, Full-series communication cables(including Optical Fiber Cable, Communication Copper Cable, Radio Frequency Cable) and Microelectronic product. During the two years since the Company was listed on the Stock Exchange, the Company had obtained 41 network entry certificates from the Ministry of Information Industry, 9 from the Broadcasting & Television Ministry, and 13 from the military. The Company has engaged itself in all the major communications products at present. The Company has made great efforts to explore overseas as well as domestic market, and has exported its products to Europe, Southeast Asia and North America. (Sun, S. 2005) (www.dantang.com)

There were other large corporations who were confidentially interviewed to participate in offering their expertise in multimedia animation during the survey process. Each participant had the expertise, experience and knowledge in Multimedia Animation that significantly contributed to all phases and levels of this research project.

Project Phase III

Some of the steps in this final stage are to access the information provided in the interview process and provided a comparison analysis formulated from the resources provided in subjects like;

- Quantitative Analysis
- Animation Outsourcing Experiences
- Budget and Saving Cost
- Employment Responsibility
- Quality
- Social and Cultural Issues

Research statistical collection from the qualitative interviews will be concluded in charts and statistical analysis.

Resources

Resources were formulated in terms of determined from a quantitative analysis external expertise from a selective group of companies in terms of research plan, interviews for qualitative statistical analysis for hypothesis conclusion.

Quantitative Analysis

The research on multimedia animation involved several companies that either outsourced their multimedia animation or were the outsourcer for companies needing animation both 2d And 3d. The companies involved were;

Dantang Software– A Large China Company Outsourcer

- Computer Software Animation Development

A Large Company that Outsources to Korea

- T.V. Animation Studios
- Digitalizing
- Illustrations Mechanical Drawings, Conversion Services - 3d Models

Ghost Productions Inc. – SMB Outsourcer International Medical Animation Onshore, Nearshore and Offshore.

- Science and Medical Illustrations
- Medical 3dAnimation and Education

Critical Thinking Company- Educational Animation, Onshore, Nearshore, Offshore Animation, Outsourcing Development Center in China

- Computer Educational Animation Software

Animazing 3d- A SMB Onshore Architectural Animator

- Architectural and mechanical design
- 3D Rendering and Virtual Room Design

The purpose for these interviews was to form an analysis and hypothesis to answer the three basic questions of this project including the interview questions issues.

What are the comparative pros and cons of multimedia animation outsourcing?

What the benefits/disadvantages of multimedia animation outsourcing are in terms of costs, quality and time effectiveness?

What are the historical, current and future trends in multimedia animation?

Animation Outsourcing Experience

Many companies are outsourcing 2d and 3d animation to Korea, India and China basically for the purpose of saving money. Some say it is not saving time in terms of shipping time back and forth of the project but is saving costs in terms of project completion. It is not like walking the job back and forth between offices but having to have it done overseas that can affect the strict deadlines. Some of the 2 d animation is being done offshore within certain companies and the 3d animation outsourced onshore. Other companies have discovered different ways in saving costs by either doing 2d offshore or 3d animation onshore or vice versa. These experiences ultimately are increasing quality and cost to some companies but giving them the versatility to outsource the areas of animation that match the company's development needs

Critical Thinking is a company based in Seaside, California, U.S. that is just getting started in the realm of animation outsourcing. They are a SMB software company that in the past three years have entered into the market in development of educational software. Books have been their market for the past 16 years but not until recently have they decided to go offshore to China for animation. Originally they did all of the artwork and some animation which took a very small development staff.

When we talk about multimedia animation it's a good time to discuss this because we are actually in the process of developing and offshore development center specifically for our animation products. We have had the privilege of working with a now U.S. citizen who lived in China a wonderful colleague who is now going back to China to set up an outsourcing company to do just what we need. The catch here is the animation is a really difficult thing for us to produce. We do have in house artist but they also carry hats of functionality designers and User Interface designers. So if we have a team that can help us with artwork or design that is what we are looking to set up. Particularly before this we have done all of our artwork and animation in house. They would do the entire back end of development. We are just beginning to do the off shore animation in the country of China. (Dupstadt.N 2005)

Ghost Productions of Roseville, MN, seems to be having a positive experiences and knowledge in Multimedia Animation. They have three different technologies and are the only one that uses it specifically for medical 3d imaging. They have a very large bank of anatomy files that has been created over the years that just do not exist outside of their business. They have designed a lot of advanced soft tissue 3d animation that you would not be able to find in any off self solution. There company has developed In-house software that is too complex for others to have and their company offers a unique niche in Medical 3d animation due to software development. (Kuslich 2005)

Architectural 3d animation is a great benefit to the contractors and investors in the project. If the lender or contractor can see a visual 3d rendition of the building, it gives the look and feel of the end construction design and how it will look on the property plot. Saving time and money is the biggest advantages to 3d animation. Today's architectural environment projects both large and small 3d animation is the single most powerful tool. The contractor sitting on the job knows exactly what is going on and there is not guess time or think what is happening, if it is not explained the job is bided accurately. It saves from having to re-compensate because the job was bid low. Government approval is really big

because a lot of cities have local jurisdictions over what gets built in their city and are very strict about what they build. Staples for example will not let you build anything over 35 feet unless you can show that it is a beautiful design and greatly improved. A lot of times they will turn down a design because they are not sure if it will look good but with 3d animation or just a rendering there is not doubt what they are getting. (Smith, B. 2005)

In Architectural 3d animation it is almost necessary to do In-house Onshore animation for local regions for companies, realtors, and engineers due to the nature of the business. Most Animation Outsourcing versus In-House Development cost benefit analysis is a standard to see the difference costs to do it In-House or offshore. Some companies find it cheaper to animate offshore according to some businesses. Businesses like television the cost of the time is more economically feasible to offshore animate. It is not valuable enough to do it In-House. Other businesses like Ghost Productions, Inc. have developed specialized software for medical animation that it is a specialized field to do it In-House as they are the outsourcer for other international companies.

In-House animation disadvantages equal cost to the company whose cost analysis and animation resources are necessary in Nearshore, Offshore or Onshore Animation who have the resources to produce quality, cost and time effective projects. Companies who do not have the time, resources or expertise who are not outsourcing animation are compromising quality, budget and saving cost to the marketing strategy.

Budget and Saving Cost

According to Datang Software Technologies Co., Ltd., General Manager, Sunny Sun, terms of time and quality, the U.S. companies save 40 to 60% on their budget by outsourcing to their company in China.

Stateside Onshore animation outsourcing cost is between \$15 to \$30 dollars an hour. Most hourly or contract project have a certain amount of repairs in the contract with a guaranteed release date. Any additions after the warranty is up then charges are added on. Easy versus complex (\$30 or more per hour) depends on the job, available employees, employees experience and available

technology. Standardization of costs is a hope for the future as in medical animation jobs can fluctuate from 9K to 32K depending on the extent of the job.

Companies are in the business for profit. The decision to outsource their animation is for this purpose. Though it cost in time in regards to making deadlines from sending jobs back and forth from Offshore to Onshore, there are always ways in looking at saving money and outsourcing is a way cut cost and save money and make a profit. It cost so much money to animate that that is saves millions of dollars to do it overseas. Some of the In-House 3d or vice versa outsource 2d overseas according to the resources they have developed.

A perfect example of this involves the company Critical Thinking. They started animating couple of years ago with a couple of small projects, nothing over 6 thousand dollars with small to medium software projects. Typically they would put out 1 software project every year to 2 years. Ever since they started outsourcing they increase their output to 3 to 6 pieces of software a year. That is the benefit to them and an interesting outsourcing argument that could say that that is ruining the American economy but in this situation it actually is creating more jobs and to save a lot of money and be able to create more product faster. (Dupstadt.N, 2005) This is the epiphysis of animation outsourcing. Jobs are created, economy increases, faster production and profitability.

Saving Time

The main disadvantage in saving time when outsourcing offshore is meeting deadlines with the time differences. It can be a couple of days behind U.S. time and past project schedules. Companies have been calculating the time differences in their time constraints for deadlines. Calculating and planning ahead with deadlines and time changes can remedy this situation. It is a new way of doing business in the global economy in animation outsourcing.

Quality

Controlling Quality is different depending on what type of animation outsourcing the company is using whether it is Onshore, Offshore or Nearshore. It is more difficult to control offshore quality that is not In-House versus In-House

quality control. Quality control can be control by establishing an In-House Developmental Department for Offshore control for jobs that are sent overseas. Oversea animation companies “complete the project according to consumers’ requirements and they have tech – support for post sales services.” (Sun, S. 2005) Establishing good relationships with Offshore outsourcing representative helps to establish better control when errors are made. Communication and preparation can ensure service quality. This type of relationship can guarantee that the jobs are completed and returned to the Onshore companies. These Onshore companies usually have contracts with the outsourcers to do a certain amount of correction. Blatant errors are fixed beyond the contract where significant there are mistakes. In-House Medical animation at Ghost Productions, Inc., according to Executive Producer, Stephan Kushlich, is done in phases. Animation that is not a part of the contract has to be repaired and paid by the company. These are usually changes in the script that are made after the original project contract. If the quality is not desirable it is usually sent back for retakes. Quality is being controlled in three different levels.

The first thing that is done is to put client in control of the project in many ways in terms of revision. They build the website where the client can log on and use a password and check the daily progress.

(www.ghostproductions.com)

Secondly it goes through a Technical Director like a little illustration training of anatomy and physiology and really understand what a drug is suppose to do or what the cells are suppose to look like how a surgical implant is suppose to work.

And finally the project goes through a producer and that’s me who looks at every frame to see if it is as good as it could be. It’s the same process that a newspaper would go through with proof editors. (Kushlich 2005)

Other companies have their own tracking system that tests and verifies all of the bugs and repairs them In-House differently that a three phase system previously mentioned. Larger companies have Developmental Centers that handle

filtering out dissatisfaction in the animation that comes back and if it can be fixed In-House then it is done. If it is some major mistake it is sent back and covered in the original contract. If it is a change from the original agreement then additional charges are negotiated.

Increasing Quality

Quality seems to be top on the list in Multimedia Animation. There are so many over the counter software that most programmers can animate. But professional animation is a complex process. Architectural 3d animation is more than a programmer who can build CAD software plans. It takes certain skills to take the one dimensional plan and make it come alive.

Mistakes are made in any animation process but most companies have an agreement to fix a certain amount of errors. Sometimes companies have some In-House animation that can resolve these issues and it is important to keep a good relationship with the outsourcers that are being dealt with.

Specifically with animation I think we are going to run into the same quality issues because of our budget we are on the low end of artist with a 2d artist so when we go to China where it will be better in terms of 3d artistic ability in which it is an advantage for us. We also like the ability to have that exact artwork representation in our software. In our market if we go too high tech looking we don't really sell really well. We have to be very carefully with that. In our new approach we are going to be giving them sample artwork of what we looking for and working with them to come up with the best animation look of whatever were are creating. That really is the object of our off shore development center. Because when you work with a traditional outsourcing center they are not going to give you feedback how to make it better. But if you have someone with educational background who is actually an outsourcing company then you actually have a better chance to create a better product. (Dupstadt.N 2005)

Undesirable Quality

Most companies interviewed had important information to contribute to the theory of undesirable quality. Besides cost and time effectiveness, quality is the main core competency for Multimedia Animation Outsourcing. Companies that have been animating as outsourcer have figured out ways to prevent undesirable quality by a certain hierarchal system of proofing and editing in the earlier phases. Experience is the key to quality.

Ghost Productions, Inc is one of those experiences companies that international work with companies in Germany and England a few companies that are in America and have development sites outside of the U.S. mostly, German engineers are making a lot of orthopedic devices implants who have gotten use to working with there engineering software. Some of the software things that we have never heard stateside they are using all over the place. It is called CATERA not to confuse it with the low end animation in America called Carrara. It's kind of like a ProE the way that it looks which doesn't seem to have an English port yet. (Kushlich 2005)

Critical Thinking decided outsource with China. They have 6 different companies. They ran into on scenario in which one situation was not desirable and we had to pull out and reassign that project to another competitor outsourcer who was capable of doing that high level of a project. It was too tough of a big project for us. If the quality is not their, you get a discount and the worse case arbitration. The fastest easiest way to deal with this is to pull the project from them and give it to someone else who can do it. (Dupstadt, N. 2005)

Brian Smith, Sole Proprietor of Animazing 3d has decided to stay onshore and work with other animators in the architectural industry because quality is lost without being able to photograph the building site and get a look and feel for the land and the adjacent architectural designs.

Employee Responsibility

In the beginning of the outsourcing history there was a lot of controversy regarding the effect on the American workforce. Companies, like most businesses, that were learning to adapt to the quick peaking curve of the Information

Technology industry and went through extreme pendulum experiences in trying to have the technology to animate. Outsourcing is one of the cost effective ways to have companies with the core competencies in this arena that is a fast technique to be able to get up to speed quickly in competition with the going trends.

Understandable mistakes were made that are being remedied in a way that creates a more homeostatic climate in the organization structure. Employee termination is not as common today in 2005 as it was 10 years when this all got started.

As companies become more experienced in Animation Outsourcing they are finding alternative ways to prevent employee's alterations or terminations because of infrastructural changes internally. Many companies are hiring employees with the skill potential who have the ability to animate on some level. This eliminates the reassigning or letting people go that would be impacted by outsourcing. They are being hired at the capacity and position to perform the skills from the beginning so that internal job changes do not disrupt the environmental climate of the business by changes. It can take from 150 to 300 people to animate a show. But with animation onshore it can take only 20 to 30 people to do the same otherwise with the new software development. It is a huge financial difference to pay 20 to 30 people the going rate of \$1000.00 versus 150 to 300 can get really expensive. It is not to say that termination and hiring does not exist. But efforts are being assessed in the hiring process to include the skill level to acclimate the new 3d animation trends in the industry.

Companies are stepping up their multitasking skills in their employees either by training or by hiring certain types of skilled employees. 4 or 5 years ago Critical Thinking had extreme programmers in which 1 or 2 programmers would be working on 1 project at a time and essentially benchmarking each others work. They still have people with programming knowledge they are also used for prototyping and User Interface Design and basic functionality decision making like moving a book into software. By reassigning employee responsibilities a little bit at a time companies, companies can create new jobs and have the ability to review and create files in the with the new animation software. In large software technological offshore outsourcers like Dantang Technologies, they go both ways

depending on project. If the projects need senior people they will locate our ready resources. If junior people are all right we use them, if not they hire new staff. (Sun, S. 2005).

Social Issues and Responsibility

Social Responsibility is one of the key concerns for Multimedia Animation Outsource and the effects on the American workforce and economy. Some companies believe that it is creating jobs in America and other feel that it is the answer to cost control to have it done Near or Offshore.

Pixar does all of their own projects in their animation studios in Emeryville, California, U.S. Onshore companies are finding success in their own development studio computer software animation.

Historically in animation it's all been farmed out to some country where it's cost very little for human labor. That is what Disney did. Computer animation brought it back (Onshore). Computer animation for instance, Ghost Productions has a staff of 9 people. We can produce more that a staff of 100 people drawing animations. I take that apart. You look at a show producer on television, any show, not the Japanese animation, I'm talking like Disney show on T.V. that is drawn. The staff that takes to make that is pure animation like Jimmy Newcomb, for instance, I would say it is close to a 10% reduction in labor which is significant. Computers handle all the in between development. I would say the next biggest in the industry is cardiovascular and orthopedics, and joints that move.

Outsourcing to countries I don't think cost less. I think that computers have reduced labor that they won't be able to produce this. It's again the software, the technology. I have never seen anyone from India or Korea produce as well as animation here. I am not saying they could but I don't think their 9 people are going to be able to beat our 9 people or 19 people. I don't think that there able to offer much a savings. With America I am happy with that. I want to be able to build an industry that people out of school can work in America where they are from and make a good living. (Kushlich 2005)

Business is business. In terms of time, resources or expertise for who are not outsourcing animation to companies who specialize in multimedia outsourcing may originate from an internal policy of the business and social commitment to their countries workforce. As computer software and companies develop new software technology in current trends it will balance the social conflicts of the Onshore, Offshore debate in animation outsourcing. Companies dedicated to internal company policy may change their perspective as more outsourcing moved to America producing jobs and increasing economy.

Cultural Issues

Companies are hiring representatives from offshore and onshore that regularly interact with each other in order to keep a good cultural relationship between companies. These types of relationships are established in person to keep an ongoing effective communication intact. Sometimes things are lost in the translation. Directions are sent offshore that have to be translate which are easily misunderstood and have to be sent back.

For more specific cultural issues there's not a lot of game playing, price negotiation back and forth. They (Offshore-China) are very honest and to the point. We appreciate it tremendously. There's a lot of games playing and negotiation when trying to get a bid in the United States and we find that what they can say is what they do and is very accurate. Anyone investigating outsourcing companies makes sure that there are plenty of employees and that they have been in business for a good while and that they have worked with another U.S. company and to make sure you have someone who speaks Chinese in your company. We had four new companies in the U.S. to work worth and I would highly recommend that they are an established company. (Duppstadt.N. 2005)

Other companies have employees that are bilingual preventing the interpretation translation error. This elimination the communication problems and help the relationships to flow much easier and project to be completed with less mistakes. Culture is an issue that may influence the offshore service quality. By

communication and documentation, and project management, the project process can be managed.

Future Animation Trends

Animation outsourcing is here to stay in the industry. The dilemma is who, where, how and when to outsource. Onshore software development is becoming a specialized niche in some of the markets. Offshore animation outsourcing companies find it unusual to outsource to the U.S. like in the case of Ghost Production Medical Animation, since it has predominantly been done offshore. U.S. is in a continual learning curve in this market. Multimedia Animation has been described as the next wave of the future in technological field. Most interviewers agreed that metaphorically speaking, that everything is going to be animated. Multimedia Outsourcing benefits are in saving money and quality of work that can be done here but the same quality at a savings can be done offshore. More recent goals of the companies interviewed are as follows.

Ghost Productions, Inc – International 3d Medical Animation Base in U.S.

Taking it from an industry point of view there are going to be a lot of baby boomers getting artificial joints next in the near future so we are going to 3d animate that next. All those joint tips have to be explained and there has been a lot of advancement in those areas. We want to be there to explain it to the surgeons, to the patients and to be able to market those technologies. In terms of what we are going to be developing in house in the next six months we are to develop our first patient education DVD series in which we will sell to doctors and doctors offices that will be generic which no company will have there name on it so it will be direct sale to the doctors office completely unbiased to what devices those are. We will start with spine, we decided that is the first of our patient education series. When we go to conferences every doctor comes up to us and ask us to be able to explain to their patient by showing them in 3d animation video. I don't want to see any blood. That is what they want so since we heard this from so many doctors we decided to make it so we will be selling it on our website in just a few months. That will be big. Were also developing some of our own software in which will allow our users to use live 3d anatomy on our website, be able to rotate

around a skeleton with zoom in and zoom out feature and take snap host of it, save it as clip art, use it in there power point presentations, all free to our visitors and we are using that as something neat that we are developing. We will I would say launch that in the next six months. This technology will be very useful in preparations for surgeries, scoliosis patients to match the curvature which is only 60K and very downloadable in full 3d. (Kushlich, N 2005)

Critical Thinking – A SMB Educational Software Company U.S Outsourcing

to China. In six months to a year Critical Thinking should have an offshore development center up and running. But for the next 6 months we will continue with the current 4 projects underway right now. Then we will re-evaluate at the middle of this year. I cannot even predict where future 3d animation technology will be taking us in the futures. I have got ideas. One thing for certain is that computers are going to get faster and programs are going to get better. The work that I am doing will become better and better. With larger computers I can have more complex scenes more polygons in my scenes the backbone of what you see in the animation. They are just like movies. Look at all of the animated films that have come out and how real they look. I have my own personal opinion on this but I think it is going to get to the point that in 10-15 years actors won't even be active anymore that animators will create them in whatever way they create them. There are actually movies that have come out like that, Spiderman, there are some scenes in Spiderman that the people are completely animated. You don't have to even act since you will not be able to tell, they just put the model and animate it the actor would never have to show up and do the work. It's going to change a lot of things in animation. (Dupstadt.N, 2005)

3d Animazing- A SMB Onshore Architectural 3d Animation. Smith is publishing a book (Appendix B) to educate the architectural industry and client on 3d animation. He hopes to finish book that he is working that will be 500 pages and hopes it will be on the shelf by Thanksgiving 2005.

It's a lot of money but there is nothing like publishing a book.

It just like any other business it takes along time to get your name out their like writing a book. Animation business is a small world right now and it

is getting bigger and bigger. If you are really interested in learning more I would suggest going to the Sygraph (www.sygraph.com) conference where all of the big animators go and the opportunity to talk with Pixar who only allows 3 week period to interview. Animation gives the company a look at what it will look at when it is build when without it what is done on paper sometimes does not look good when built.(Smith, B. 2005)

Literature studies show that Pixar will continue to In-House, Onshore Animation. The Northern California studio will release its next film, Cars, on June 9, 2006. Since 1995 Disney has produced over 44 canon animated movies offshore. Future animation projects include;

- Number 45 - Chicken Little?
To Be Released - November 2005?
- Number 46 - Rapunzel?
To Be Released - 2006?
- Number 47 - Fantasia Revisited?
To Be Released - 2007?
- Number 48 - Snow Queen?
To Be Released - 2008?
- Number 49 - Billy the Kid?
To Be Released - 2009?
- Number 50 - The Search for Mickey Mouse
To Be Released - 2010?
- Number 50 - The Search for Mickey Mouse
To Be Released - 2010?
- Number 51 - Silly Stories?
To Be Released - 2011?
- Number 52 - Puss In Boots?
To Be Released - 2012?
- Number 53 - Expedition?
To Be Released - 2013?

- Number 54 - Rescuers 3?

To Be Released - 2014?

- Number 54 - Lady of the Lake?

To Be Released - 2015? (Disney Releases 2005)

Another factor to include in future trends is the change in the usage of agencies arouse to being in control of the animation industry. Now that companies development in software is becoming the wave of the future companies are finding it beneficial to go directly to the animating company instead of agencies. Agencies have a certain advantage in directing the company in certain common areas but in specialized niches it is more cost effective to go directly to the company who has advanced development in the field. Getting information out in the market about 3d animation capabilities is the purpose of this research in order to educate the industry on alternative methods.

Improved off of the self software is also the wave of the future. Programs like Macromedia Flash, Carrarra and Adobe Effects and skilled graphic based software will be console base like the Nintendo's.

There are all kinds of quotes about if you have fun and you are attracted to what you are looking at while you are learning you are 3 to 5 time more absorbing of information. That's the way to move and that's why we are going their but it's tough for us because we are a small company.

(Dupstadt.N. 2005)

People of all ages will be able to animate more and more on a multimedia based computer. In the education sector it has never been their before like computer based animated classrooms activity with better memory retention and learning.

Pros and cons of Multimedia Animation Outsourcing

New companies entering into animation outsourcing can find it an emotionally vulnerable situation. It is always a risk to change the basic infrastructure of the company not knowing the outcome. Companies who have taken the leap of faith have had many growing experiences some good and some not so good. In order to get the customer or company to reach the animators

sometimes it takes a lot of expense to get them to reach their business by buying ad campaigns in magazines and television. Web development also adds costs. Decision to In-House some aspects of the project or Onshore, Nearshore, or Offshore other parts of the animation process, is a dilemma. So animation is initially expensive investment emotionally and financially.

Constant requirement changes in animation growth and development can be unsettling for the company's operational structure. Other disadvantages are in job cost standardization tends to be difficult because jobs are so diversified. Most of the jobs at Ghost Productions are between \$9,000 and \$32,000. You can tell a very extensive story with animation that would take two to three times with video, PowerPoint in 3 minutes in animation. We can cut it in half. A lot of people call and say they need 10 minutes when really they need 4. (Kushlich 2005)

Distance Offshore co-working has its disadvantages and risk, especially at the beginning of the co-work. On the more positive side it can save money after the initial costs are bypassed. It saves on time and creates new jobs Onshore for American Companies. Companies do learn ways to develop animation resources both on-and-offshore. Americans companies that go abroad and just don't see a benefit increase in manpower or productivity, there just going for the added savings. (Dupstadt.N 2005) It is up to how the company is handling themselves in Multimedia Animation Outsourcing. There is plenty of information and companies experienced in this industry to effective capitalize from animation outsourcing whether you outsource or are the outsourcer. Multimedia animation as it becomes more advanced in technology will become more labor-intensive work. China is rich for this resource and has a hugh market for it and it its trend for work. (Sun, S. 2005)

Most companies agree that computer speed and software are going to get better and better every year. In architectural projects each job has to comply with building codes. The benefit of 3d renderings is that building codes are not an issue. 3d animation in this field has positive results because the architect is the one responsible for the compliance with codes and draws the plans. The 3d Animation makes a animation from that drawing.

Smith of 3danimazing only does the plans if they do exist. That would only be when you want to build a nice fancy house but you don't know what kind of house you want to build and don't want an architect draw the plans until you know what you want to build to see what it looks like. When you are trying to get a loan a 3d rendition has better loaning results. The lender can see the 3d animation and that you are serious in building the structure. You then would have the financial resources go to the architect to draw up the plans in preparation for starting the building.

Comparative Analysis/Conclusion/Hypothesis

Multimedia Animation Outsourcing is a difficult transition to make for companies in the beginning. There are benefits to the American employment Onshore as well as Offshore. It gives jobs in both places. But it is knowing whether the American workforce is suffering is undetermined at this time but is a big concern for Nearshore and Offshore outsourcing in the U.S. From all of the interviews the below topics were stated as pros and cons of animation outsourcing. Rating them at a score between 1 -10 with 1 being the lowest and ten the highest.

Hypothesis Question 1

What are the pros and cons of Multimedia Animation?

Pros		Cons	
Financial Savings	7	Initiation Learning curve	9
Employment Issues	5	Employment Issues	5
Onshore/Offshore		Onshore/Offshore	
Quality	8	Emotional/Financial Learning Curve	8
Project Cost Savings	5	Offshore time difference in meeting deadlines.	7
Quicker Production Time	8	Acclimating to cultural differences.	5
Enjoyable and Different	8	Expensive set up costs	7
Creating Specialized Software Development	7	Need faster Computers	4

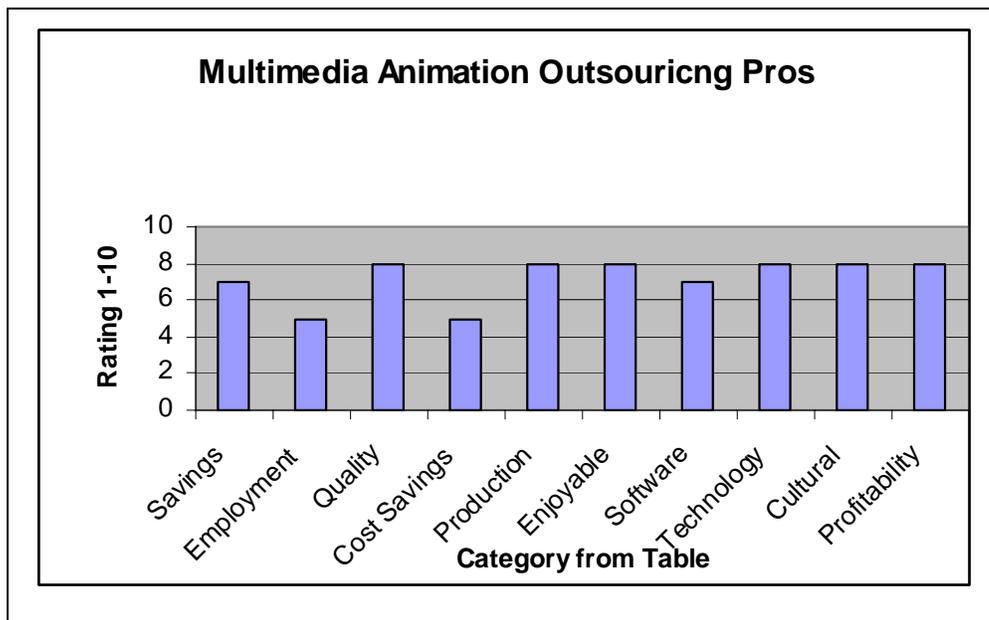
Improving Technology and Computer speed	8	Need more realistic scenes in off the shelves software.	4
Developing Cultural Relationships	8	Adapting to change	6
Increase Profitability and Job Production	8	Taking risks with financial loses.	4

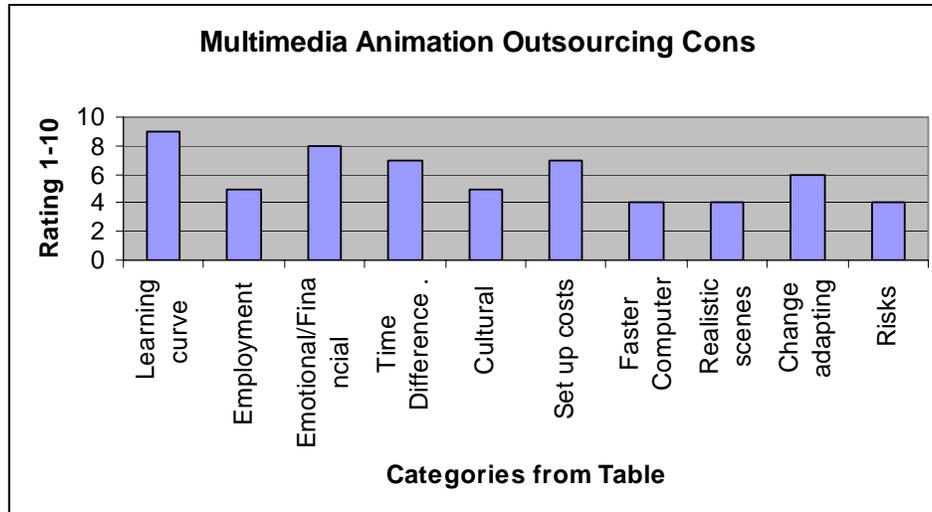
Average medium in Pros 7.2

Average for Cons 5.9

These averages were taken by combining interviewers rating from 1 – 10 per category and an average was calculated to determine what the pro and con statistics were in Multimedia Animation Outsourcing factors.

Rates positives outcomes of 7.2 average in favors of Multimedia Animation Outsourcing and 5.9 with unfavorable categories as listed above. These statistics are demonstrated in the below charts.





Hypothesis Question 2

What the benefits/disadvantages of multimedia animation outsourcing are in terms of costs, quality and time effectiveness?

Some of the advantages of Multimedia outsourcing include lower cost and increased production, saving repetitive errors, decreasing salary budgets and film costs. Quality is being controlled in-house developmental centers, in phases, by hiring qualified employees and elimination of guess work by the nature of the visual aspects of the industry. Time effectiveness and lower error rates, reduced sitting time and quality work and output are also advantages in outsourcing animation.

Disadvantages are the in original start up cost and budget adjustment. Quality can be compromised by trying to do it in-house with trial software packages and employee multitasking. When making the decision to do business over several time zones, deadlines can become overextended and employees are overworked to meet these deadlines.

	Advantages	
Cost	Quality	Time Effectiveness
Lower Cost More Production	Tracking System	Less Errors
9k – 35 K per job 9 employees vs. 100	3 Phase quality control	Computer Software Development

Saving Money Architectural 3d to contractor	No guess work	Reduce Sitting Time
Decreased salary	Hired qualified	Quality work
Decrease Film Cost	Developmental Center	Quantity Output
	Disadvantages	
Cost	Quality	Effectiveness
Start Up Cost	Trial Software Decisions	Time Difference Deadlines
Budget Adjustments	Multi-tasking employees	Over worked

Hypothesis Question 3

What are the historical, current and future trends in multimedia animation?

Multimedia Animation Outsourcing historically was done in tedious archaic ways with multiple camera shots, storyboards and large employee participation. In current times software development brought it from hand animation to computer animation in 1995. India, Korea and China quickly learned the industry who became the outsourcer for many companies in the global economy. U.S. on the other hand is doing the same thing as in the case of Pixar, Disney, Lucas Films, Ghost Productions, Inc, and 3danimazing where they have become outsourcers for other companies Onshore and Offshore. Companies like Disney, Dantang Software Technologies, Walking About Maps, outsource. Some companies are doing both In-House and Offshore development.

Testimonies in key outsourcing factors 2003 in comparison to 2005 are;

Employee Responsibility and Costs

I would have to hire more employees, one for replacing Fluent Edge, for Data Warehouse I will have to hire one more. For Email, I probably wouldn't have to hire but create bandwidth and purchase more equipment that is capital expense, and same thing with Images. (Jennings D. 2003)

We would not be able to do this level of software development. We can stretch our resources. Revenue catches up. With there work we can invest more in our current staff. Otherwise employee job responsibilities would be stretched and quality would suffer. (Pruett, I 2003)

According to Demushkane, A, Publishing Editor for Walking About Maps, he would not hire more employees if he was not outsourcing for the project since he could not be able to afford it and would abandon the expansion of map designing in more cities. If he were to hire more employees it would be from offshore sources since a monthly salary of a secretary is around \$150.00 a web graphic designer is \$250.00 - \$300.00 a month and a programmer around \$400.00 - \$2,000 a month. The programmers that he is using on this 2d map design project are getting paid around \$900.00 a month during the duration of the project that have the same qualifications of a onshore programmer receiving \$80K annually. (Demushkane, A,)

If we did not outsource we could not afford to hire, reassign employees. Ivan Prueitt. (2003)

Dictated by economics where stewardship acts as a roll in the government. Involuntary separateness is hard for retraining. In the economic equation, value of loyalty is more important. Dedicated workers to the business who have worked there for a while impact the value as it should be. (Kleinschmidt, C.)

Quality Control

Their workload is defined by us, so we tell them exactly what we want. And then when they make the changes, or they are ready to implement it, we review before it gets solved. It goes back and they have to fix it. (Jennings D. 2003)

Quality control is by using responsible people by intellectual work and production. (Pruett, I 2003)

Demushkane says he terminated after 10 days of work because he was not happy with the quality of the work and it was more time consuming and expensive to go through and make the correction and go back and have to pay for the work again. It was partially an expense issue and partially a control issue and partially a design issue. (Demushkane, 2003)

If contractors are not meeting the statement of work they change outsourcing contractors. They may get issued a “default for cause” which is unusual. Early into the engagement we will go lead the contractor and discuss problem and replace if necessary. (Kleinschmidt, C. 2003)

Cultural Issues

Stern former director of Consumer Products at IBM and a lot of that work was sent over to India and outsourced to another IBM facility there and they also have one in China also but because the people are not native English speakers there was always an interpretation problem where they did not understand colloquial phrases and terminology. So I found it to be difficult except for basic things that did not take a lot of interpretation between English and some other language and I found that also so true with companies like Dell for there tech support they send it offshore and it goes to India and the tech read from a script and

they don't understand and they don't have a lot of computer experience. So I think Dell service has gone bad since they outsourced IBM for tech support while I was there the calls are routed to Ireland and that support was better than to third world companies for the same reason that they can't understand the nuisances of the English language. I don't like outsourcing to third world countries. I think that companies that are doing it are making a mistake. I think IBM is making a huge mistake. When I was with IBM research at least a third of the 700 employees at the San Jose Research Center were foreign nationals mostly from India, which there here on a 3 or 4 year work basis and then they go back. It is a drain of intellectual property by doing this. At IBM I have done those procedures and tech support like at DELL does not understand so the only way you can get around them and have to ask for a supervisor. (Sterner 2003)

Social Responsibilities

From an American perspective, it is tough economy, companies are trying to cut budgets and go as tight as they could. I also understand it put many people unemployment, which unemployment now goes up; governments are not getting their taxes, etc. Preference? The preference is to stay in the America, just because jobs in the America, but I also have to watch out for the best interest for my company. The issues I have with the offshore-related outsourcing, is communication barriers, time. Work around the clock? If they have questions and they want to get hold of me, I certainly don't want to be called at 2 in the morning. Another issue is I like having people locally. Companies we work with, Idaho, San Jose, are local there. You know, I need you here, we need to have a meeting, we need to stick out this project, and we need to be on the same page. And there is nothing better than having them here talking with the other system staff, and the users, and working with the issue with the project. Sometimes if it's a project that's more than just fix a couple of issues here or there, for example,

we are trying to install something we need additional resources, they may need to have multiple trips there. I certainly don't want to pay a lot of money to keep flying somebody out; I don't want to pay a lot of money to keep somebody in a hotel room because it is too expensive to flying back. (Jennings D. 2003)

Outsourcing is more than just straight cost of what it costs programmer per hour. It is a no brainer if you don't think all other impacts. If you are on a pretty tight deadline with a project, I don't think offshore is the way to go, unless they got experience in your software, in your environment, they've done like projects, they know exactly what needs to be done because all that design in up front work that takes a lot of time. Necessarily the programming is not always the hardest part of the project. (Jennings D. 2003)

Outsourcing is the “child of global economy” and yes he was contributing to the “millions jobs overseas phenomenon” and that is a problem. But that say for instance China has over a billion people and U.S. is a buyers market. There are pros and cons about outsourcing but being a start up company he could get the same quality for costs. (Demushkane, A.2003)

Interview 2005	Type of Outsourcing	Location	Cultural issues	Social Responsibility	Employee Responsibility	Quality Control	Quality Desirable	Cost Saving/Time
Animazing3d	Onshore	United States	None	Easier to Stay U.S.	Hires in U.S.	Proprietor	InHouse	Onshore Saves Both
CriticalThinking	On/Offshore	U.S./China	Resolved in Hiring	No benefit in Manpower	Creates More Jobs U.S.	Tracking System	InHouse	Saves Cost Time/Output
Dantang (outsourcer)	Offshore to Onshore	China/U.S.	Influence Service	Sourcing is what is Current	Hire Both Senior/Junior	InHouse Development	InHouse	Saves Cost Time/Output
Ghost Productions (outsourcer)	Off to Onshore	Germany England /U.S.	Language	3rd World Low Labor Wages	Sourcing coming to U.S.	3 phase process	InHouse	Saves Cost Time/Output
Animator T.V.	Offshore	Korea	Language	Has External Internal Operations	2d Sourced 3d Inhouse	InHouse Development	Send it Back	Saves Cost Output Problems Time

Interview 2003	Type of Outsourcing	Location	Cultural issues	Social Responsibility	Employee Responsibility	Quality Control	Quality Desirable(Not)	Cost Saving/Time
Fleet Numerical	Onshore	United States	None	Stays in U.S	Statement of work	Must be qualified already	Change Outsourcer	Quality Work More Cost/Time
Defense Research	Offshore	U.S./China	Language Errors	Off - Wage Affordability	Business necessity	InHouse	Send it Back	Saves Cost Time/Output
Dawn Breakers	Offshore	China/U.S.	Language Errors	Off - Wage Affordability	Business necessity	InHouse Development	Hiring Quality Employees	Saves Cost Time/Output
Walk About Maps	On/Offshore	U.S/Ukraine.	None	3rd World Low Labor	Business necessity	InHouse	Terminate	Saves Cost Train Time

Companies have learned alternatives in Multimedia Animation Outsourcing even as since two years ago (2003). Employees are being hired with animation skills to prevent internal and external termination experiences. Quality control is being conducted by In-House Development Centers, protocol phases, and training. Social responsibilities is taking a turn toward the medium as America has begun to develop animation companies who have become outsourcers for overseas companies creating jobs and software development for future improvement. Learning curves in cultural issues has eliminated some of the language barriers, improved relationships between countries and established effective business development. This is being done by hiring multicultural employees who know both cultures.

Future trends

Future trends and conclusions in Multimedia Animation outsourcing include faster computers to accommodate improved software for memory of larger better quality images. Projections of computer desktop education are in the development phases. Equalization of outsourcing onshore will stabilize the global imbalance of geographical locations of animating companies more in favor of the United States. Cost, quality and performance is improving rapidly where project completion is getting done faster, better at reduced cost. Holograms home kits are now on the shelf.

- Past - Archaic Methods, storyboards, Camera.
- Current-Onshore Software Development/Outsourcing.
- Future Projections -Onshore, Offshore, Nearshore,
 - Internal versus external development
 - Better computers, software, better 3d animation.
 - Animating Everything
 - Home software improvement/holograms

Other Future trends project more multimedia animation outsourcing.

Conclusions

Conclusions in Multimedia Animation outsourcing include faster computers to accommodate improved software for memory of larger better quality images. Multimedia Animation will have a larger presence in the home. Holograms technology initial, developed in the first Star wars movie, is now available in home kits. Holograms are three-dimensional images produced by capturing a laser light interface pattern on special film. The laser light produces a 3d image another form of animation brand new in the home consumer market. (Krakow 2005)

Projections of computer animated desktop education are in the developmental phases. Equalization of outsourcing onshore will stabilize the global imbalance of geographical locations of animating companies more in favor of the United States. Cost, quality and performance is improving rapidly where project completion is getting done faster, better at reduced cost. Standardization of project cost, software, and industry are also predictions for future animation trends.

Almost all companies interviewed believed that 3d animation is the future top industry in the market. They also believe that outsourcing will become a fair trade market experience for both Onshore, Offshore, Nearshore whether In-House or otherwise. It is the most versatile field today and tomorrow. The wave of the future is that everything is going to be animated. As the companies in the global market learn and cooperate with each other in all phases it will assist this market to success.

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Appendixes

Appendix A- Milestone Progress Chart

	Task Name	Duration	Start Date	End Date	Completion
	Phase 1				
1	Proposal Draft/Final	14 days	1Feb05	22Feb05	Draft 15 Feb05
2	Human Study Application	1 days	11Feb05	12Feb05	12Feb05
3	Interview Questionnaire/Consent	1 day	11Feb05	12Feb05	12Feb05
4	Human Study Approval(Delayed schedule)	14 days	15Feb05	01Mar05	5Apr05
5	Interviewee List	7 day	22Feb05	30Mar05	30Mar05
	Phase II				
6	Interview/Conduct/Schedule	30 days	1Mar05	30Mar05	2May05
7	Interview Analysis	7 days	1Apr05	7Apr05	8May05
8	Video Prepare/Completion	7 days	14Apr05	20Apr05	20Apr05
	Phase III				
9	Add Hypothesis written research	7day	7Apr05	14Apr05	5May05
10	PPT Presentation Status Update	2 day	14Apr05	15Apr05	8May05
11	Web Portfolio/CD completion	7 day	16Apr05	30Apr05	30Apr05
12	Prepare Capstone Rehears.	18 day	1May05	17May05	17May05
13	Capstone Presentation	1 day	19May05	19May05	19May05

Appendix B – Architectural Book

Title: Architectural Visualizations with 3ds max

Subtitle: A Practical Guide for the Production Environment

By Brian Smith

Description of book:

The purpose of this book is to provide professionals in the building industry a clear and concise learning tool with which to use 3ds max to produce stunning, photo-realistic renderings and animations. The scope includes anyone working in architecture, engineering, land development, real estate, and many other smaller disciplines. Whether the reader is a beginner with no experience at all, or an advanced user who wants to learn practical production environment routines, this book teaches everything needed to produce the highest quality visualizations in the shortest amount of time possible. The approach of this book is simple; teach the readers what they need to know for the production environment, make every word count, and don't waste their time.

In high school, everyone thinks to themselves at one time or another, "Why am I learning this, I'll never use it again?" Generally, school systems teach the same courses to all the students because they don't know which students will go on to which careers. College is a little more practical, at least in the junior and senior years, because the students usually choose for themselves which courses to take based on the careers they want to follow. The fact is, if you've ever read a computer book on 3ds max, you've wasted a significant amount of time learning portions of the book that you didn't need to know. Why? Because as a beginner you don't know what it is you need to know and authors generalize their approach to entice readers of every discipline to buy their books. For a program as large as max, the amount of wasted time can be enormous.

Learning just the features that apply to one industry is hard enough; authors shouldn't make it harder by throwing in hundreds of features that don't apply. Some readers want to learn everything they can and decide for themselves what parts are not important to their fields. Some simply wish to learn all they

can so they can be considered experts. For these readers, slugging their way through a 1000+ page book will probably work. For all others, specificity is better. I don't spend time in this book covering character animation, NURBS, Inverse Kinematics, or special effects. More surprisingly, I imagine, I don't cover other popular features such as Patches, AEC Objects, Architectural materials, Assemblies, and many others because I know how these tools are used in architectural visualizations and I know better ways to accomplish the same goals. I will not waste anyone's time covering those features of max that have no place in a production environment. Instead, I will cover all areas of the program that the reader will derive significant benefit from, with more important areas being covered in greater detail.

The material I present in this book is a result, in part, of the collaboration I have had with many co-workers in many different firms and production environments. Working side by side with so many other individuals who were eager to learn the best, fastest, or coolest 3D techniques, I found myself every day absorbing the collective discoveries of my co-workers and passing around those that I stumbled upon myself. So many of the best techniques available with computer programs are not even documented and have to be learned the hard way. This book aims to remedy that situation for at least one program.

APPENDIX C –Human Subject Application Approval

Multimedia Animation Outsourcing

California State University, Monterey Bay

Committee for the Protection of Human Subjects

Application for Approval of an Investigation Involving Human Subjects

Please type all information. Handwritten forms cannot be accepted.

Submit completed and signed original to Grants & Contracts, Bldg. 86 C

Check Appropriate Box: New HS application Revision of currently pending application

I. General Information

Emily Garnero
CST699 Capstone Project
Hypothesis

What are the pros and cons of of multimedia animation outsourcing?

Principal
Investigator/Researcher:
Emily Garnero
CST699 Capstone Project

Non-CSUMB (institute) CSUMB Student

Email:Emily_garnero@csumb.edu Telephone:831-869-9578

Address:301 Euclid Avenue, Monterey CA 93940

II. Project General Information: To offer comprehensive research by using qualitative interviews of existing small to medium business who are currently using multimedia animation outsourcing for companies who are analyzing the possibility of this type of outsourcing for the purpose of utiizing these resources into their own company.

A. Project Title:Multimedia Animation Outsourcing

Project period start date:January 26,2005 End date: May 21, 2005

Anticipated # of subjects:Multimedia Animation
Outsourcing

Funding Source: Na

Hypothesis

- What are the comparative pros and cons of multimedia animation outsourcing?
- What the benefits/disadvantages of multimedia animation outsourcing are in terms of costs, quality and time effectiveness?
- What are the historical, current and future trends in multimedia animation?

III. Project Specific Information:

Qualitative Interview.

Attached

Research with existing data.

Establish Hypothesis with new data from qualitative interviews.

Formulation of capstone project research paper from research.

Faculty Sponsor Eric Tao, PhD

Date 01/26/05

Institute Director: CSU Monterey Bay

I confirm the accuracy of the information stated in this application. I am familiar with, and approve of the procedures, that involve human subjects.

Institute Director

Date

Committee for the Protection of Human Subjects, CSUMB CONSENT TO PARTICIPATE IN RESEARCH

Title of Project: Multimedia Animation Outsourcing

We would like you to participate in a research project conducted by Emily L. Garnero, California State University Monterey Bay, School of Information Technology and Communication Design, Master of Science in Management and Information Technology Graduate Capstone Course CST699 in multimedia animation outsourcing.

The purpose of this research project is to establish information on multimedia animation outsourcing designed to assess and compare information on this topic.

You were selected as a participant in this study because you have knowledge and/or experience on this topic.

The benefits of participating in this project include providing a source for companies to access information on multimedia animation outsourcing.

If you decide to participate in this research, you will be asked to be interviewed with a set of questions that will take ½ hour to 45 minutes. This can be conducted on phone or in person as desired by you and with your approval will be audio taped to be more accurate in the information you provide.

If participation involves any discomfort or risk, it is not necessary to continue under any circumstance and in no way wants you to feel uncomfortable or be at risk. Available referral agencies or individuals for assistance, if needed can be obtained at your discretion at CSUMB Counseling Center, etc.

As you know, this project involves an interview that is not physically demanding in nature. But in the event if physical injury might result: “No medical treatment or financial compensation for injury from participation in this project is available.”

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will only be disclosed with your written or witnessed verbal permission or as required by law. If information is released to any other party for any reason the person/agency to whom the information will be furnished, the nature of the information and the purpose of the disclosure will be confidential. You as the participant have the right to review/edit the tapes or make the decision of who will have access to the tapes, if they will be used for educational purposes and when they will be erased.

Taking part in this project is entirely up to you. You can choose whether or not to be in the study. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you do not want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so.

If you want to know more about this research project or have questions or concerns, please call me emily_garnero@csumb.edu 831.869.9578. If you have any additional questions you can also call my advisor Eric Tao, 831.582.4222.

The project has been reviewed and accepted by California State University, Monterey Bay. You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study.

If you have questions about CSUMB's rules for research, please call the Committee for Human Subjects Chair, Dr. Brian Simmons, CSUMB Health, Human Services and Public Policy, 100 Campus Center, Building. 86D, Seaside CA 93955, 831.582.3898.

You will get a copy of this consent form. Thank you for your participation.

Sincerely,



Emily L. Garnero
California State University

MS MIT School of Business.

Consent Statement

I understand the procedures described. My questions have been answered to my satisfaction and I freely agree to participate in this study. I know what I will have to do and that I can stop at any time.

I have been given a copy of this Consent Form.

Signature

Date

APPENDIX D – Human Subject Questionnaire

Multimedia Animation Outsourcing Interview Questions

Emily Garner CST 699
Capstone Interview Outline

Demographics

Name:

Address

Phone Number

Fax Number

Email:

Job Title

Number of Employees

Nature of the business:

Date of Interview:

Release Consent Attached:

Date of Interview:

Revenue of the company:

Brief Description of Capstone Topic Multimedia Animation Outsourcing

Interview Questions

- 1. With whom and what multimedia animation that you are outsourcing and why?**
- 2. Describe your experiences with these outsourcing projects?**
 - a. It is saving time?**
 - b. Is it providing increase quality of product?**
 - c. Does your company have the resources to animate without outsourcing?**
- 3. What is the budget for outsourcing? Is it saving cost?**
- 4. Who is responsible for standards and support?**

5. Will you hire more employees, reassign or let existing employees go, when considering outsourcing? Why?
6. What is the difference between having animation outsourced or by doing it yourself?
 - a. Have you calculated the total, real, costs of setting up an in-house distance learning system?
 - b. Value of organization doing this internally.
7. What issues were/are being considered to multimedia animation outsourcing?
 - a. What are your views for companies do not have the time, resources or expertise for who are not outsourcing animation to companies who specialize in multimedia outsourcing?
8. How is quality being controlled?
9. What happens if the quality is not desirable?
10. How is culture issue being addressed when going offshore?
11. Have you considered social responsibilities of outsourcing, i.e., are you causing more Multimedia Animation Outsourcing professionals losing jobs?
 - a. What are the social issues versus in-house, onshore and offshore outsourcing?
12. What is your outsourcing plan for next 6 months or 1 year?
13. Describe any unfavorable situations that you are having/had in your outsourcing experiences?
14. What are the benefits of outsourcing? (Rapid development, Quality, training/hiring existing employees)
15. Is there anything you would like to add?

ITCD LEARNING PORTFOLIO

RELEASE FORM FOR USE OF STUDENT WORK SAMPLES

School of Information Technology and Communications Design (ITCD) at CSUMB collects samples of student work – work that demonstrates the outcomes and criteria of the Learning Outcomes. Faculty groups will analyze the work as part of a process of studying the MLO's and related assessment processes.

You are asked to sign the release form below to indicate your permission for use of your work in your portfolio for education and research purpose. If you chose not to permit use of your work, you are also asked to sign the form below.

Eric Tao PhD

Course Instructor Name/Signature

RELEASE FORM

I understand that ITCD at CSUMB is collecting student work samples for analysis in the process of examining learning outcomes and related assessment processes. My work may be used by ITCD for research and educational purposes.

I give permission to use my work by ITCD for research and educational purpose

with my name revealed
 without my name revealed

I do not give permission to use my work for research and educational purpose.

Emily Garnero

Print your name

Emily J. Garnero

May 15, 2005

Signature

Date

Graduate Capstone CST699 and all MSMIT Courses

Course Name & Number

Degree Goal (select one): TMAC MSMIT CSIS (minor)
CD (minor)
 Networking (cert) Instructional Tech (cert) System
Admin (cert)