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JUDUL: PIZZA HUT HOT POUCH 3D TV COMMERCIAL

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PIZZA HUT HOT POUCH 3D TV COMMERCIAL

NORMADIHAH BINTI MOHAMAD NOR

This report is submitted in partial fulfillment of the requirements for the Bachelor of
Information and Communication Technology (Interactive Media)


FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
KOLEJ UNIVERSITI TEKNIKAL KEBANGSAAN MALAYSIA
2005

DECLARATION

I hereby declare that this project report entitled

PIZZA HUT HOT POUCH 3D TV COMMERCIAL

is written by me and is my own effort and that no part has been plagiarized
without citations.

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DEDICATION

For my father, Mr. Mohamad Nor Muda

and my mother, Mrs. Masitah Salim

without whose love and support, and the encouragement they given in me, this thesis might never have been written

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I would like to thank all those who helped me with this thesis: my supervisor Mrs. Norazlin for her guidance and time; my parents for their sage advice and support; my brothers and sisters for their undying support and compassion; and to all my friends who share the same feelings and thought. Finally, I would like to thank all people who willingly spare their precious time answering my questionnaire and helping me to complete this thesis.

May peace be with you, and with the world.

ABSTARCT

Nowadays, our television is flooded by various kind of advertisement. They are all sort of advertisement like the old plain video type advertisement until the ever creative animation advertisement or the combination of both. This thesis is about 3D animation in advertising a product. But, it focuses more on how the 3D animation is created. What technique that can be used to create a good 3D animation and other specifications that needs attention when developing it.

This thesis also focuses on product visualization. Consumers today are become more and more cautions about products they used. The urges of wanting to know how the product is made or functioning develop into a guideline for them to buy a product. Aware of this new pattern of buying, the entrepreneur add a visualization part in their commercial to attract consumers. Good visualization helps to increase better understanding about the product and become a tool of selling it.

Besides explaining the topics above, this thesis also describes the work ordeal for this project. A methodology is created to organize the workload. This methodology consists of six phases which are the planning, analysis, preproduction, production, post-production and delivery phase. Each phase plays crucial part in the project development. In addition, this thesis will explain in details each task done in order to accomplish the project.

ABSTRAK

Tesis ini menerangkan tentang projek yang bakal dibangunkan. Projek ini ialah sebuah iklan TV yang dibangunkan menggunakan 3D animasi. Kebelakangan ini, keinginan pengguna untuk mengetahui tentang produk yang mereka gunakan bertambah. Oleh itu, kebanyakan iklan TV mengandungi visualisasi produk. Visualisasi produk membantu pengguna untuk memahami dengan lebih lanjut mengenai produk yang diiklankan.

Jika diperhatikan, majoriti iklan TV terdiri daripada iklan yang dihasilkan daripada video biasa. Kini, kebanyakan iklan TV menggunakan animasi untuk memperkenalkan produk. Terdapat dua jenis animasi iaitu animasi dua dimensi dan animasi tiga dimensi. Animasi tiga dimensi mula mendapat tempat dalam industri pengiklanan. Ada tiga teknik untuk menganimasikan animasi tiga dimensi; teknik *keyframing*, simulasi dan *motion capture*. Thesis ini hanya menerangkan teknik *keyframing* dan teknik *mation capture* dalam pembikinan animasi. Ia juga membuat perbandingan antara dua teknik tersebut untuk menentukan teknik mana yang lebih baik.

Methodologi dicipta untuk memberi panduan sepanjang projek dibangunkan. Methodologi ini mengandungi enam fasa. Fasa-fasa tersebut ialah fasa perancangan, fasa analisa, fasa pre-produksi, fasa produksi, fasa selepas produksi dan fasa persembahan. Setiap fasa memainkan peranan yang penting dalam pembangunan projek. Lakaran awal karakter dan jalan cerita memberi gambaran awal tentang projek. Selain itu, ia banyak membantu penganimasi dalam kerjanya.

TABLE OF CONTENTS

CHAPTER	SUBJECT	PAGE
	DEDICATION	i
	ACKNOWLEDGEMENT	ii
	ABSTRACT	iii
	ABSTRAK	iv
	TABLE OF CONTENTS	v
	LIST OF TABLES	viii
	LIST OF FIGURES	ix
CHAPTER 1	INTRODUCTION	
1.1	Project background	1
1.2	Problem statement	1
1.3	Objectives	2
1.4	Scopes	3
1.5	Project significant	3
1.6	Expected output	4
1.7	Conclusion	4
CHAPTER 2	LITERATURE REVIEW AND PROJECT METHODOLOGY	
2.1	Introduction	5
2.2	Fact and findings	5
2.2.1	Techniques for animating 3D animation	6
2.2.1.1	Keyframing technique	8
2.2.1.2	Motion Capture technique	10
2.2.2	The growth of 3D animation in advertising field	13

2.3	Project methodology	16
2.3.1	Planning phase	17
2.3.2	Analysis phase	17
2.3.3	Preproduction phase	18
2.3.4	Production phase	18
2.3.5	Postproduction phase	18
2.3.6	Delivery phase	19
2.4	Project requirements	19
2.4.1	Software requirement	19
2.4.2	Hardware requirement	20
2.5	Project schedule and milestone	20
2.6	Conclusion	22

CHAPTER 3 ANALYSIS

3.1	Introduction	24
3.2	Problem analysis	24
3.3	Requirement analysis	28
3.3.1	Needs assessment	28
3.3.1.1	Observation	28
3.3.1.2	Questionnaire	29
3.3.1.3	Internet	30
3.3.2	Content analysis	31
3.3.3	Resources	32
3.3.3.1	Software requirements	33
3.3.3.2	Hardware requirements	34
3.3.4	Delivery platform	34
3.4	Conclusion	35

CHAPTER 4 DESIGN

4.1	Introduction	36
4.2	Raw data	36
4.3	Basic system information	37
4.4	Preliminary design	40
4.4.1	Storyboard design	40
4.5	User interface design	49
4.5.1	Character design	49

4.5.2	Navigation design	60
4.5.3	Output design	61
4.6	Conclusion	62
CHAPTER 5 IMPLEMENTATION		
5.1	Introduction	63
5.2	Production and implementation	63
5.2.1	Production of texts	63
5.2.2	Production of graphic	64
5.2.3	Production of audio	66
5.2.4	Production of video	67
5.2.5	Production of animation	68
5.2.6	Process of integration	81
5.3	Implementation status	82
5.4	Conclusion	85
CHAPTER 6 TESTING		
6.1	Introduction	86
6.2	Test plan	86
6.2.1	Test organization	87
6.2.2	Test environment	87
6.2.3	Test schedule	87
6.3	Test strategy	88
6.3.1	Alpha testing	88
6.3.2	Beta testing	89
6.4	Test design	89
6.4.1	Test description	89
6.5	Test result and analysis	91
6.6	Conclusion	92
CHAPTER 7 CONCLUSION		
7.1	Observation on weakness and strength	94
7.2	Proposition of improvement	94
7.3	Contribution	95
7.4	Conclusion	95
REFERENCES		
APPENDICES		

LIST OF TABLES

TABLE	TITLE	PAGE
1.0	Type of animations	6
2.0	Comparison between keyframing technique and motion capture	13
3.0	PSM 1 milestone	21
4.0	PSM 2 milestone	22
5.0	Comparison between video TV commercial, animation TV commercial and radio commercial	27
6.0	Media proportion for 3D advertisement project	32
7.0	Media proportion and its usage	38
8.0	Description of map created	64
9.0	Audio specification	66
10.0	List of sound and music	67
11.0	Video specification	67
12.0	Description on how to model each character and object	68
13.0	Description of adding effect process	77
14.0	Implementation status	83
15.0	Testing schedule and activities	87
16.0	Test result	91

LIST OF FIGURES

FIGURE	TITLE	PAGE
1.0	Type of 3D animation projects	15
2.0	3D TV commercial - Coca Cola Red Code	15
3.0	3D TV commercial - Velcom	15
4.0	Electronic Arts Game Emperor Battle for Dune	16
5.0	Methodology	17
6.0	The flow of Pizza Hut TV commercial	25
7.0	The flow of Pizza Hut radio commercial	26
8.0	Percentage of advertisement method preferred by public	29
9.0	Percentage of type of advertisement preferred by public	30
10.0	Illustration of Hot Pouch	37
11.0	Flowchart presents the flow of task management in this project	39
12.0	Main character	50
13.0	Main character 3D model	51
14.0	The bag (Hot Pouch)	52
15.0	The bag (Hot Pouch) 3D model	53
16.0	The pizza	54
17.0	The pizza 3D model	55
18.0	The heating rode	56
19.0	The heating rode 3D model	57
20.0	The snow environment	58
21.0	The snow environment 3D model	59
22.0	The flow of the advertisement	61
23.0	The making of main character	69

24.0	Material Editor	70
25.0	Character's bone structure	70
26.0	gunung.jpg – graphic to create landscape	71
27.0	The landscape	71
28.0	The mapped landscape	72
29.0	The sky	72
30.0	The cloud	73
31.0	The finished snowy landscape	74
32.0	The finished Pizza Hut Hot Pouch	75
33.0	The finished pizza	76
34.0	The finished Hot Rode	76
35.0	Pizza merged with hot rode	77
36.0	Hot Pizza	79
37.0	The glowing hot rode	80
38.0	Flowchart of integrating multimedia components	82
39.0	Test Case example	90
40.0	Percentage of test result	92

CHAPTER I

INTRODUCTION

1.1 Project Background

Advertisement is a way of promoting a product or service offered. It can be done using several medium like television, radio, brochure, internet and many more. Nowadays, many advertisements or commercials are done not just to attract and show the new product or service offered but to educate people on the product itself as well. In order to that, they visualize the product, showing the viewer how it works. Right now, 3D advertising become a popular method of advertising. It is because 3D animation can do or create something that is impossible or unusual happen in the real life.

This project is about 3D advertisement for Pizza Hut latest product the Pizza Hut Hot Pouch. The advertisement is focus on visualizing by using simple movement (motion) to show how the product works (briefly). How the black square bag able to maintain the pizza's heat after a delivery.

1.2 Problem Statement

Although Pizza Hut guarantee their customers that their latest Pizza Hut Hot Pouch can maintain the pizza hotness, but there is no proof that the bag can actually

do it. The recent advertisements about the product only show that the pizza keep in the Hot Pouch is still hot after the delivery process, not any of the advertisement show how the bag is functioning. This makes the users wonder whether the bag really exists and does it really can preserve the heat of the pizza delivered.

In this project, the Pizza Hut Hot Pouch functionality is going to be visualized. This visualization only contains brief information on the function of the bag. In order to visualize it, the product will be animated with other characters that will be modeled later. The visualization will be developed as interesting, natural and realistic as possible. This project also implements suitable visual effects to make the visualization and the advertisement more realistic and convincing enough to catch people interest to try the product.

1.3 Objectives

For this project, several objectives have been stated. These objectives will be the project aim so that the project develops accordingly. The objectives are:

1. to deliver another advertisement for Pizza Hut Hot Pouch, using 3D animation as a platform which definitely different from the last two advertisements.
2. to educate users about the product by visualizing on how the product works.
3. to implement appropriate visual effects to make the advertisement looks real and able to attract users or viewers on the product advertise.
4. to study and used suitable technique of animating depends on the budget, tools and the complexity of the 3D animation.

1.4 Scopes

This project is to produce a 3D advertisement for Pizza Hut Hot Pouch. This advertisement is for the Pizza Hut Company to promote their latest product offered for the convenient of their respectable customers. This advertisement is also for the public viewer to see via the television. Basically, this whole project is focus on advertising field. The duration for this 3D advertisement is 1 minute and is build fully using the 3Ds Max software. The platform used for this project is simply the Microsoft Window (XP, ME, 2000 and 98 – which can support the 3Ds Max software). In order to develop the project, it needs permission from the Pizza Hut Company, allowing using all information gain about the bag (Hot Pouch). The project also needs any extra information about the bag from the company.

1.5 Project Significant

This project is beneficial for the company whose inventing the product. In this project is the Pizza Hut itself. If the 3D advertisement is successful, then it will gain the users interest and trust to try up the product. The importance of this project is to give knowledge for all users on how Pizza Hut Hot Pouch works by visualizing it. Because this advertisement is build using 3D animation as a platform, it surely spices up the nation's advertising field.

1.6 Expected Output

The project output is a 3D advertisement on Pizza Hut Hot Pouch. The time duration for this advertisement is 1 minute. It is about how the Hot Pouch can maintain the pizza heat after a delivery. The bag make the pizza still hot and good to eat just like it was freshly out of the oven. This 3D advertisement also shows user how the bag functions by visualizing it by using appropriate animating technique.

Because it is a 3D advertisement, it will also focus on implementing correct visual effect to increase the attraction value of the product and smooth characters movement to make it look natural from the users view. Later, the advertisement will be rendered in .mpeg format.

1.7 Conclusion

To conclude, this project is derived from the urge of wanting to be educate about the product or service advertise. This first chapter stated clearly on the project objectives, problem statements and scopes. It also enlightens the signification of the project and its limitation. From it, a TV commercial will be created, interesting enough to catch user's attention about the product. To make user understand the function of the product, it is a kind of challenge to animate every characters, objects and environment effectively. Next chapter will be discussing on the techniques used to make a 3D animation and how the technology affects the advertising field.

CHAPTER II

LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1 Introduction

This chapter is to test the ability of conducting a research based on the proposed project, as well as to test the ability to manage time on the project development. Through this chapter, a methodology is suggested and will be used for project development. This methodology states what activities or tasks need to be done in each phase. With this, it helps the developer to stay alert or on track of the schedule and be more organized in work management. In the literature review section, any related topics or issues regarding the project is collected. This soon will become handy for the analysis phase.

2.2 Fact and findings

For this literature review, it is divided into two portions. One is research on the techniques in animating three dimensional (3D) animations and the second is the growth of 3D animation in advertising field.

2.2.1 Techniques for animating 3D animation

Recently, animations play important roles in our lives. Without it, lives become so boring and dull. There are many concepts of animations. One of it, taken from Michele Matossian in her book *3Ds Max for Window*, animation introduces the concept of time. We recognize that time is passing by observing changes in our world: sunlight moving through the clouds, a beating heart, a ticking clock, bodies dancing to beat, the steady rhythm of machines, rivers flowing to the sea, the silent turning of the stars. We also draw conclusions about the passage of time by comparing experiences to memory: white hair, a wrinkled brow, an empty glass, an empty house. Time can make the world empty or full, high or low, light or dark, loud or soft, near or far, old or new.

According to Webster, the word “animation” is based on the Latin verb *animare*, which means, to give life to. Animation also means to create many stable images which show an object in a movement and to direct us to think as if it moves by the help of playing these images one after the other (Assistant Professor Yucel Gursac). There are several types of animations. Table 1.0, shows the type of animations.

Table 1.0: Type of animations

Type of animation	Description
cgi animation	Animation of computer generated images in which the animation is created by the manipulation of computer software
Clay animation	Animation of figures created of plasticine, actual clay, or other malleable materials
Cut-out animation	Animation in which the animated figures are paper puppets with hinged limbs
Direct-on-film animation	Animation made by painting, etching or otherwise altering raw filmstock
Drawn animation	Animation consisting of images drawn on a cel,

	paper or some other medium; for most of animation's history this has been the dominant form of animation production; some specialized forms of drawn animation such as cut-out animation or direct-on-film animation are separately noted
pixilation	Used to describe the process of animating live objects (usually people) by photographing them one frame at a time
Puppet animation	Animation of puppets (or other objects) constructed of wood and other materials
Silhouette animation	Generally animation in which the animated figures are cut-out silhouette of the actual figures

This chapter focuses only on computer animation. Computer animation is a sequence of computer-generated images where objects, camera and lights may be moving and changing overtime. Based on Alan Watt and Mark Watt (1992), computer animation is using a standard renderer to produce a consecutive frame, wherein the animation consists of relative movement between rigid body and possibly movement of the view point or virtual camera. Computer animation can be divided into two groups; two-dimensional animation and three-dimensional animation. This thesis will discuss further on three-dimensional animation.

3D (three-dimensional) computer animation is the projecting of two dimensional pictures one after the other which are rendered in the means of width, length and depth in the space supplied by computer software's. 3D computer animation has some characteristics that are different from the traditional animation in terms of method and techniques. By the user's commands, the computer calculates the details like movement, color, light, and perspective of the objects on the created visual stage accurately and gives the outcome as an image. Animator plans the model which is thought to be on the stage with architecture sensitiveness, chips into shape with a skill of sculpture, makes it move in aesthetic way by the help of

observation, experience and creativeness. While doing this work, his/her brush is digitalizers like mouse and keyboard, his/her canvas is computer screen. His other tools are like modeling, metamorphosis, giving movement; primitive objects, camera, lighting and color materials that the software enables.

There are three types of 3D animating techniques; keyframing, simulation and motion capture. But, in this literature review it will focus only on keyframing techniques and motion capture. These two techniques are popular among the animators, many issues rise about it such as which is the better techniques? Which is cheaper? Which take the longest time to render? This portion will give some explanation about those techniques and the differences between it. At the end of this portion, we will know the answers of the entire question asked.

2.2.1.1 Keyframing technique

Keyframing is one of the fundamental techniques used in animation. This technique is used to define an animated sequence based on its key moments. (Isaac Victor Kerlow, 2000).

This is another explanation about the technique. Keyframing is the simplest form of animating an object. Based on the notion that an object has a beginning state or condition and will be changing over time, in position, form, color, luminosity, or any other property, to some different final form. Keyframing takes the stance that we only need to show the "key" frames, or conditions, that describe the transformation of this object, and that all other intermediate positions can be figured out from these.

Borrowing its name from the traditional hand animation technique, keyframing requires the animator to outline the motion by specifying key position for the objects being animated. In a process known as in-betweening, the computer interpolates to determine the positions for the intermediate frames. For example, to

keyframe hitting a baseball, the animator would pose a batter at several key moments in the sequence, such as the batter initial's stance, the contact with the ball, and the follow through. The remaining images would be filled in by the computer. The interpolation algorithm is an important factor in the appearance of the final motion. The simplest form of interpolation, linear interpolation, often results in motion that appears jerky because the velocities of the moving objects are discontinuous. To correct this problem, better interpolation techniques, such as splines, are used to produce smoothly interpolated curves.

The specification of the keyframes can be easier with techniques such as inverse kinematics. This technique aids in the placement of articulated model by allowing the animator to specify the position of one object and have the positions of the object above it in the articulated hierarchy computed automatically. For example, if the hand and torso of an animated character must be in particular locations, an inverse kinematics algorithm could determine the elbow and shoulder angles. Commercial animation packages include inverse kinematics and interpolation routines design specifically for animating human figures. These tools take into consideration such factors as maintaining balance, joint angle limitations, and collisions between the limbs and the body. Although these techniques make animation easier, keyframed animation nevertheless requires that the animator intimately understand how the animated object should behave and have the talent to express that behavior in keyframes.

The main advantage of keyframing technique is the animator has total control of the animation. It means that the animator can pick any keyframe positions, editing motion curves, control over velocity (timing) and can determine the specification of constraints. He can do whatever he likes depends on his creativity. Keyframing technique is much cheaper than any other techniques because it doesn't involve other equipment and doesn't need a lot of worker. The disadvantages of this technique are it is difficult to specify realistic interactions and it is also difficult to specify large, dynamic environment.

Here are the lists of software that use keyframing technique to animate 3D animation:

- Discreet 3Ds Max 6.0 – this software is entirely object oriented
- NewTek Lightwave3d
- MicroStation

2.2.1.2 Motion capture technique

Motion capture is defined as "The creation of a 3D representation of a live performance." in the book *Understanding Motion Capture for Computer Animation and Video Games* by Alberto Menache. This is in contrast to animation that is created 'by hand' through a process known as keyframing.

Motion capture (aka Mocap) used to be considered a fairly controversial tool for creating animation. In the early days, the effort required to 'clean up' motion capture data often took as long as if the animation was created by an animator, from scratch. Thanks to hard work by the manufacturers of motion capture systems as well as numerous software developers, motion capture has become a feasible tool for the generation of animation.

Motion capture is an advanced animation technique that allows animator to capture live motion with the aid of a machine and then apply it to computer animated characters. There are three technologies of accomplishing a motion capture (1) optical (2) magnetic and (3) electro-mechanical. Each technology has its strength but not single of the technologies give a perfect performance possible for any use.

a. optical motion capture

For "optical" motion capture, a series of high resolution cameras with special strobe lights are set up around an area to be "captured." Small spheres (markers) covered with a retro-reflective substance are placed in strategic locations on the person (or object). Specialized software will

locate the markers seen through the cameras. The markers are then recorded as 3D coordinates (xyz). The collected marker data over time creates motion data. There are 2 types of optical motion capture systems:

i. Passive

An array of video cameras surrounds the subject to be recorded. Each camera has a ring of lights (LED's - Light Emitting Diodes) around the lens that send light towards the subject. This light bounces back off reflective Markers that have been placed on the subject.

Each camera sees a different picture of the Markers since each camera is in a different position in the room. These pictures are used to work out the relative position of each camera, and hence the real world 3D position of the Markers.

ii. Active

Similarly to Passive, but instead of the camera LEDs sending light to bounce off the Markers, the Markers themselves are the LEDs and send light to sensors (cameras) in the room.

b. magnetic motion capture

Magnetic motion capture systems utilize sensors placed on the body to measure the low-frequency magnetic field generated by a transmitter source. The sensors and source are cabled to an electronic control unit that correlates their reported locations within the field. The electronic control units are networked with a host computer that uses a software driver to represent these positions and rotations in 3D space.

c. electro-mechanical motion capture

Unlike magnetic systems which have big problems with metal in the environment, and optical systems that need a lot of dedicated controlled space, the electro-mechanical can be used just about anywhere. It is highly transportable as well. It is tremendously easy to set up and use,