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Application of Project Management Techniques in Filmmaking

by

Raghavendra Santosh Pogaru

A Starred Paper

Submitted to the Graduate Faculty of

St. Cloud State University

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for the Degree

Master of Engineering Management

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Starred Paper Committee: Hiral Shah, Chairperson Ben Baliga Balasubramanian Kasi

Abstract

AV Digital Services is Plymouth, MN based film production company. It had undertaken the current project of making a feature film project "Mithya". Though it has extensive experience in handling shorter film projects like advertisements and web videos, the company had no experience executing a feature length film project. This project incorporated a few project management techniques to finish this project efficiently.

Acknowledgements

This project would not have come to fruition if not for the support of my professors in the Masters of Engineering Management program at St. Cloud State University- Dr. Hiral Shah and Dr. Ben Baliga who along with Dr. Balsy Kasi have guided me to undertake this unusual but highly rewarding project. I would like to thank Dr. Ben Baliga for his support and encouragement through the Master's program. I would like to especially thank Dr. Hiral Shah for her patience and her expert guidance during the course of this project. I would like to thank Ms. Beverly Arro and Ms. Sue Pope for their timely administrative support. I would also like to thank Mr. Anil Kundeti, director and producer at AV Digital Services, Plymouth, MN for having me on board for this ambitious project. I would like to thank all my family and friends without whose support I couldn't have attempted this endeavor.

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Chapter I: Introduction

AV Digital Services is a photo-video services company based in Plymouth,

Minnesota that has been a major player in the event photo-video services industry for
the last 15 years. AV Digital Services, had taken up this ambitious, almost start-up
like venture of executing a feature film project, tentatively titled 'Mithya'.

'Mithya' is an action film with a story that requires film production in a variety of locations- cityscapes, mountains, riversides and countryside. It also involves the usage of a huge range of and very specific camera, grip equipment and special effects. Being an action film, it required a crew with not just the technical skills to pull off the action scenes, but also the common sense and exposure to project management practices (film production practices) to execute such a complicated project within the project's limitations without compromising on the vision of the film or its quality.

Filmmaking, in general, encompasses a host of diverse activities including but not limited to story writing, script writing, casting, film production, editing, sound recording, sound mixing, color correction, multi format reproduction, distribution and exhibition. Like any other project in any other industry, high-tech or otherwise, filmmaking also requires sound project management practices and economics to ensure a smooth execution and an efficient output.

This capstone project aimed to focus on application of project management techniques to enable financially sound decisions and optimize resource allocation.

The following problem statement, objective and nature and significance of the problem, delve into incorporating project management techniques into filmmaking.

Problem Statement

AV Digital Services had a limited budget of 150000\$ and a tight timeline of 4 months to execute this film project (pre-production to post-production) and it had no prior systems in place or experience in using any project management techniques to ensure the project doesn't go over over-budget and/ or fall behind schedule.

Nature and Significance of the Problem

On an action film project like 'Mithya', the film production attracts further complications because of the nature of the content to be filmed. An action film requires utmost care and precision in

- the level of coordination between all the departments,
- the cost of the special effects,
- > the limited time- window to execute the effects,
- safety of the cast and crew involved, and
- budget control required to execute the scenes.

Objective of the Project

The objectives of the project were:

- 1. To execute the project within the budget of \$150000.
- 2. To finish the project-pre-production to post-production, within 4 months.
- 3. To achieve a total savings of 5-10% of the allocated budget.

Project Questions

- 1. What is the total cost of the film production?
- 2. What is the total time taken to execute the project?
- 3. What is the amount of savings, out of the originally allotted budget, realized at the end of the project?

Limitations of the Project

This project was limited to the pre-production, production and post-production stages of filmmaking. The sales and distribution phase of filmmaking have not been dealt with in this project.

Definition of Terms

The following are definitions for the technical terms used in this report.

Pre-production: The process of planning the budget, resources and logistics for executing the film project.

Production/ Principal Photography: The process of photographing/filming over a period of time with all the budget, resources and logistics as planned.

Post Production: The process of finishing the film with the various editorial tools liking editing, sound mixing, Visual effects, etc.

Director. The creative captain of the ship who decides and executes the film based on the script written by the writer.

Producer: The managing captain of the team who collaborates with director and the writer to put the project together and execute it.

Cinematographer. Also called the Director of Photography, he /she uses various camera equipment to capture the script based on the director's vision.

Production Designer. The captain of the art department who furnishes entire world of the story with various designs, art materials and art properties.

Editor. The editorial captain who pieces together the various scenes filmed during the production phases and compiles a coherent end product.

Summary

This chapter dealt with the premise of the project, the problems and limitations associated with the project, the nature and significance of the challenges of this project, the questions that are aspired to be answered in this project and the definition of terms associated with this project to elucidate their usage in this project report. The following chapter dwells on the background related to the project's problem with the regards to AV Digital Services and the literature related to the project problem and methodology.

Chapter II: Background and Review of Literature

Introduction

This chapter deals with the background of problem of the project with regards to AV Digital Services. It also focuses on the literature related to the said problem and the methodology that has been used in this project to deal with the problem.

Background Related to the Problem

The people/talent involved in the film production are its biggest assets and they can make or break the project. Hence, hiring, monitoring and allocating the crew for various tasks at all the stages of the project also becomes a very important task of the producers and the production company.

Film production, with the intention to achieve conventional feature film standards, entails usage of very expensive and modern camera and other related equipment. The decision of renting or buying or leasing the required equipment weighs a lot on the film budget's line items.

Film production is a highly stressful process even for experienced organizations because of the volatile and dynamic nature of the problems that have to be dealt with, on a daily basis. The challenge grows multi-fold for a company like AV Digital Services which has very limited experience executing a project of this scale.

Literature Related to the Problem

Rhyne (2008) provides a comprehensive list of literary articles and books that referenced film production vis-à-vis various project management scenarios. Cleve (2006) laid out an extensive account of how a film is produced.

The organization structure of a film production, its methodology for film production, its efficiency in finishing a film project within a given time and budget are very similar to project management practices in the IT industry (Presse, 2008; Vjeko, 2009).

Project Management Institute (PMI) (2004) also provides a comprehensive reference to project management theory from which we could interpret how film production works in project management scenario.

Literature Related to the Methodology

Figure 2-1 illustrates the phases involved in the process of filmmaking.

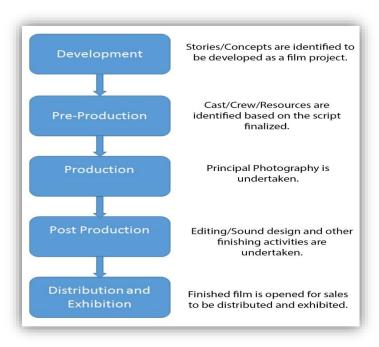


Figure 2-1. Filmmaking phases.

1. Development

- Story and the script for the film project will be developed.
- The core team for the film comprising of the producer, writer and director will be formed.
- Financing for the project will then be secured.
- The project charter- 'to finish the film project within the budget and time allocated, without compromising on the initial vision for the film'- would be decided.

2. Pre-Production

- The story and script will be finalized.
- The required resources-cast, crew, equipment, locations, costumes, properties, etc. will be identified.

- The production dates and the schedule for the cast and crew will then be finalized.
- The various equipment needed for production would be procured by buying and/or renting and/or leasing.

3. Production and Post-Production

- The film will be shot according to the schedule in place with the cast and crew. This process is also called 'Principal Photography'.
- The daily expenses would be accounted to keep a tab on the budget.
- The editing, sound-mixing and other post-production activities will be undertaken almost simultaneously.

4. Production and Post-Production

- The key members of the crew would monitor the progress as the production and post-production will undergo concurrently.
- The schedules will be modified and resources will be allocated accordingly as required.

5. Distribution and Exhibition

- Once, a 'picture lock', the final version of the film is completed, the project will be opened for distribution and exhibition deals.
- Advertising and marketing campaigns would be carried out to sell the film and promote it to the intended audience.

 Once the deals are in place and the dates for the exhibition are decided, the contracts would be drawn and the film will be delivered in the required digital or analog formats.

Figure 2-2 illustrates how these filmmaking phases may be associated with the five project management phases of Initiating, Planning, Executing, Control and Closing.

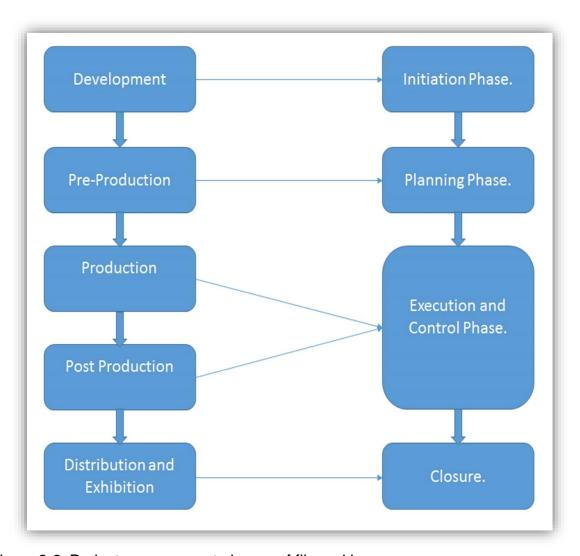


Figure 2-2. Project management phases of filmmaking.

Project Management techniques and concepts would come in very handy to efficiently manage and execute any type of project, big or small. The dynamic nature of resource utilization and requirement, a film production involves, provides a need to take help from various project management techniques. Work Breakdown Structure and Gantt charts are some of the project management tools that would be used to visualize the project enabling the project managers [producers] run a smooth production. The work breakdown structure (WBS) has long served as a valuable tool in helping project managers plan deliverables and detail project scope (Brotherton, 2008). The Gantt chart is used to display progress on a project's activities (Gilyutin, 1993).

Summary

This chapter dealt with the literature behind the problem of the project and the literature behind the methodology used to execute the project.

Chapter III: Methodology

Introduction

This chapter deals with the methodology used to design the process to execute the project.

Design of the Study

The team for the film project were organized based on:

- The individual tasks identified for each requirement
- Reporting structure required to incorporate responsibility and accountability
- And the dependency Structure as per the dependency of the tasks and requirements assigned.

Once a hierarchy is established,

- Each and every player knew where they stand in the team.
- They knew who to ask questions and seek clarifications.
- They knew who is responsible and accountable for specific tasks.

With a framework of project management system now in place,

- The requirements for the team as a whole and individual players were identified based on the script.
- Each requirement was thoroughly understood and interpreted.
- Priority and sequence of all the requirements were mapped based on the understandings.
- Each requirement was assigned to the appropriate players.

This clear understanding of the requirements and their assignment to respective players were used to formulate a WBS-Work Breakdown Structure. WBS divides the project into smaller tasks which helps to organize work so that 'the way in which requirement groups can be addressed will move the process from benign organization into proactive design (Persse, 2008).

WBS helped the management team in clearly identifying:

- Each member/department assigned for any given task.
- Chain of responsibility and accountability for each requirement.
- A visual roadmap of the entire project with milestones to be reached for each phase of filmmaking process.

Figure 3-1 illustrates the team's organizational hierarchy was chalked up that were based on the tasks, requirements and appropriate assignments. The producer who is responsible for putting together the project by raising capital, identifying the story and the rest of team, is at the top of the hierarchy. The director and writer, who report directly to the producer, work together to formulate the look and feel of the film based on the story. The rest of the team heads-production designer, director of photography, first assistant director, editor, sound designer and *vfx* [visual effects] supervisor manage their tasks and teams and report directly to the director who is the captain of the ship once the principal photography phase begins.

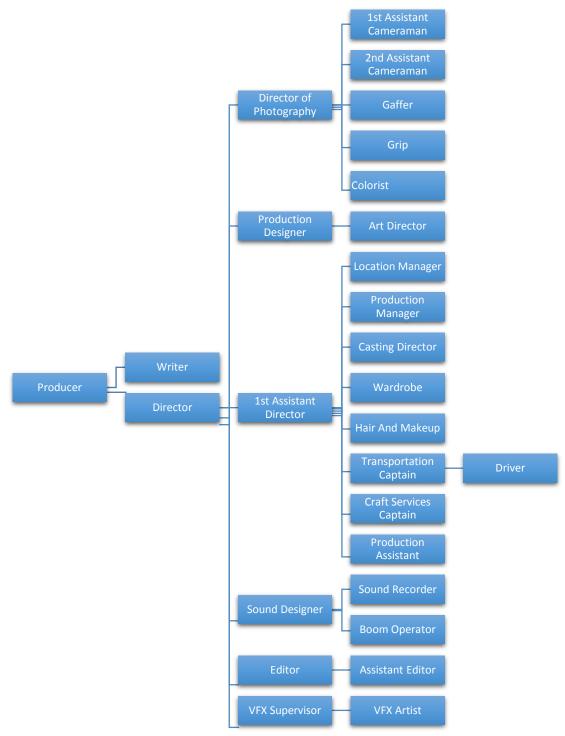


Figure 3-1. Organizational structure of film project.

The management team comprising of the producer and the director worked with the first assistant director in identifying individual tasks based on the requirements. Figure 3-2 illustrates the main tasks for the filmmaking process.

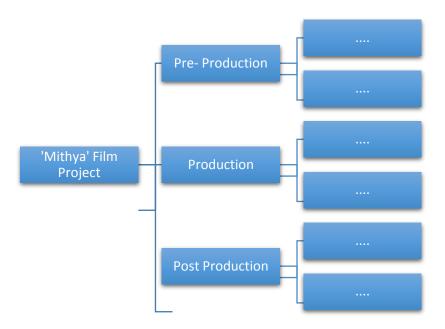


Figure 3-2. Filmmaking tasks.

The entire filmmaking project may be divided into 3 core tasks.

- 1. Pre-Production;
- 2. Production;
- 3. Post-Production.

Figure 3-3 describes the pre-production [the planning phase of filmmaking] tasks. The director and writer worked closely with the producer to define these tasks, execute these tasks and monitor them. These tasks helped in identifying the various teams, their heads and their corresponding duties for the rest of the filmmaking process.

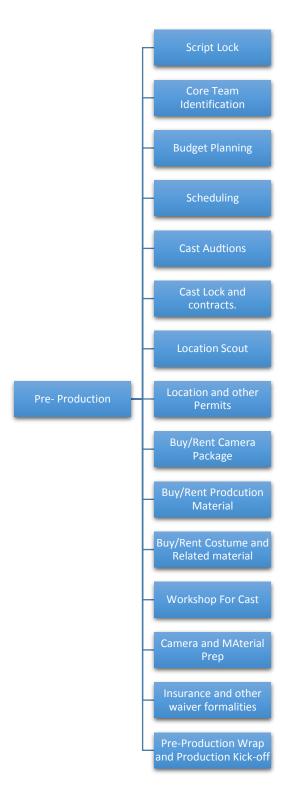


Figure 3-3. Pre-production tasks.

Figure 3-4 describes the production [the executing phase of filmmaking] tasks. The director leads the entire crew and cast in capturing the performances to bring the script alive on the screen. Division of these tasks helped in delegating the tasks and assigning responsibility and accountability to the team captains.

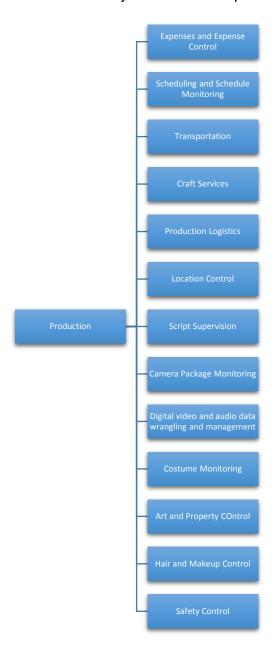


Figure 3-4. Production tasks.

Figure 3-5 describes the post-production [also part of the executing phase of filmmaking] tasks. The director works primarily with the editor in compiling the entire film with the sound department, music department and vfx department supplementing and complementing the editorial process.

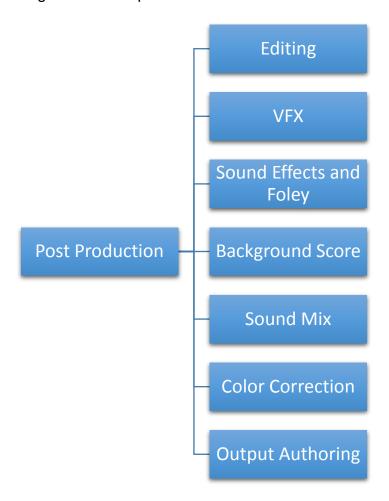


Figure 3-5. Post production tasks.

Budget

The budget allocated for this project was \$150000 which is a par budget for an independent feature film like 'Mithya'.

Timeline

Table 2-1 illustrates the timeline for this project. The time allocated for the project was 4 months from the start of pre-production and the project was finished within the allotted time. Pre-Production activities took 45 days. Production [Principal photography] was done in 22 days spread over a 2-month time. Post-production was completed in 2 months as allocated originally.

Table 3-1

Project Timeline

Activity	Timeline			
Problem Identification	November 2015			
Proposal	19 th February 2016			
Pre-Production	15 th December 2015 to January 31 st 2016			
Production	1 st February to 30 th March 2016			
Post-Production	15 th February 2016 to 15 th April 2016			
Ready for Release	15 th April 2016			
Project Closure	15 Αριίί 2016			
Final Defense presentation	15 th July 2016			

Summary

The above chapter described the methodology used to execute the project, the details about the budget and the timeline of the project.

Chapter IV: Data Presentation and Analysis

Introduction

This chapter presents the data collected in the project and the analysis of the presented data.

Data Presentation

This project did not warrant extensive data collection and analysis. However, consequential to the methodology employed to this project, the following were collected and analyzed.

- 1. WBS for the entire project.
- 2. GANTT chart in MS EXCEL based on the WBS designed for the preproduction, production and post-production stages of the project.
- 3. Microsoft Project GANTT chart for the entire project.
- 4. Budget Breakdowns for various stages of the project.

Figure 4-1 illustrates the WBS-Work Breakdown Structure for the entire project.

0	Project Mithya
1	PRE PRODUCTION PHASE
1.1	Script Lock
1.2	Core Team Identification
1.3	Budget Planning
1.4	Scheduling
1.5	Cast Auditions
1.6	Cast Lock and contracts.
1.7	Location Scout
1.8	Location and other Permits
1.9	Buy/Rent Camera Package
1.1	Buy/Rent Production Material
1.11	Buy/Rent Costume and Related material
1.12	Workshop for Cast
1.13	Camera and Material Prep
1.14	Insurance and other waiver formalities
1.15	Pre-Production Wrap and Production Kick-off
2	PRODUCTION PHASE
2.1	Schedule1
2.1.1	Expenses and Expense Control
2.1.2	Scheduling and Schedule Monitoring
2.1.2	Transportation
2.1.4	Craft Services
2.1.4	Production Logistics
2.1.6	Location Control
2.1.7	Script Supervision
2.1.8	Camera Package Monitoring
2.1.9	Digital video and audio data wrangling and management
2.1.10	Costume Monitoring
2.1.11	Art and Property Control
2.1.12	Hair and Makeup Control
2.1.13	Safety Control
2.2	Schedule2
2.2.1	Expenses and Expense Control
2.2.2	Scheduling and Schedule Monitoring
2.2.3	Transportation
2.2.4	Craft Services
2.2.5	Production Logistics
2.2.6	Location Control
2.2.7	Script Supervision
2.2.8	Camera Package Monitoring
2.2.9	Digital video and audio data wrangling and management
2.2.10	Costume Monitoring
2.2.11	Art and Property Control
2.2.12	Hair and Makeup Control
2.2.13	Safety Control
3	POST PRODUCTION
3.1	Editing
3.2	VFX
3.3	Background Score
3.4	Foley and Sound Effects
3.5	Sound Mix
3.6	Color Correction
3.7	Output Authoring
4	Picture Lock

Figure 4-1. Project WBS.

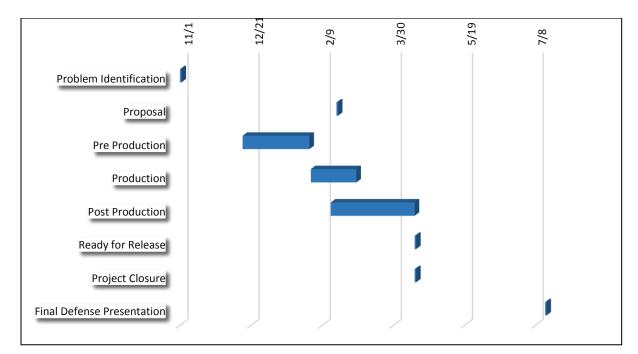


Figure 4-2 illustrates the GANTT chart for the entire project.

Figure 4-2. Entire project GANTT chart.

Figure 4-3 illustrates the GANTT chart for the pre-production phase.

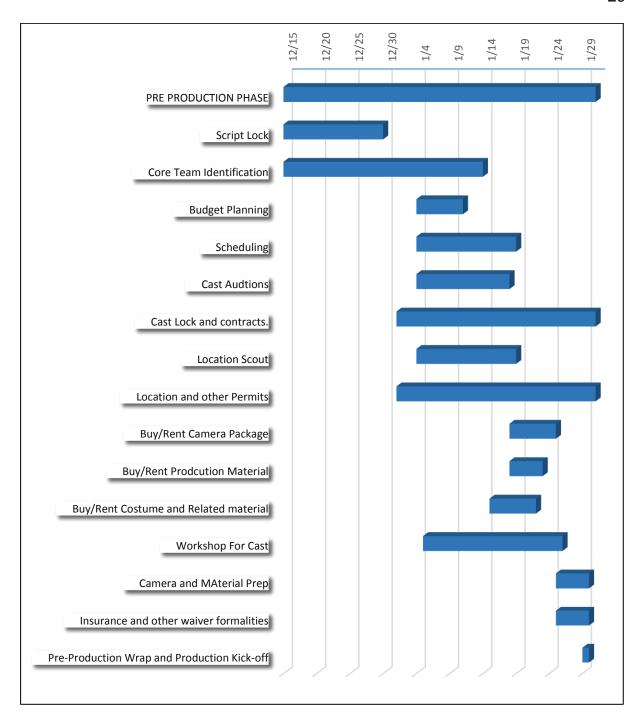


Figure 4-3. Pre-production GANTT chart.

Figure 4-4 illustrates the GANTT chart for the production phase.

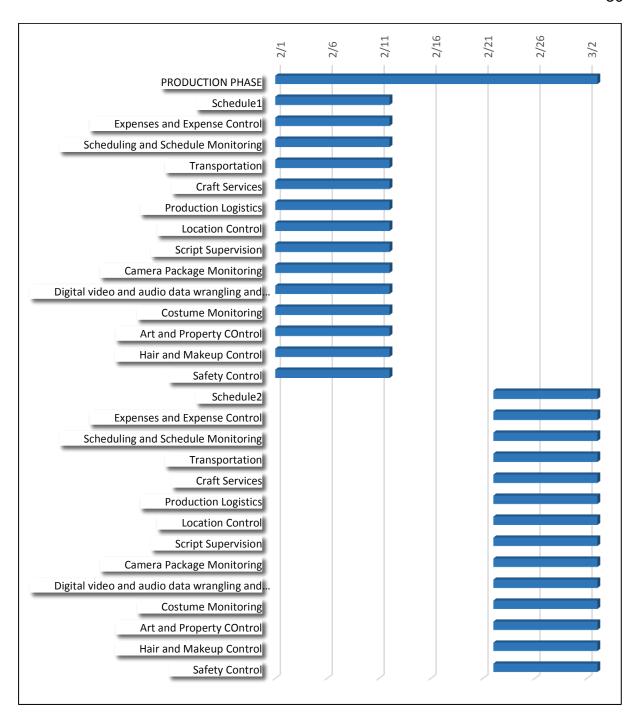


Figure 4-4. Production GANTT chart.

Figure 4-5 illustrates the GANTT chart for the post production phase.

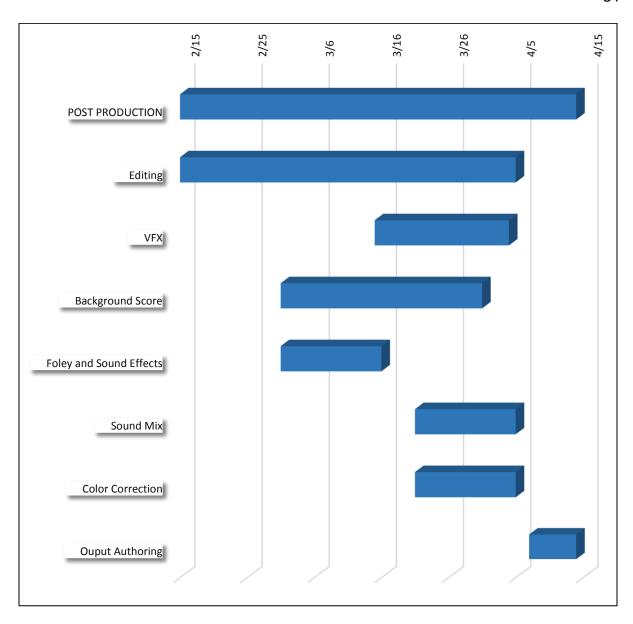


Figure 4-5. Post production GANTT chart.

Budget is a creative and organizational tool to help you figure out how to make your project happen (Ahuja, 2016). Figure 4-6 illustrates the budget breakdown for the entire project. Each department has their individual breakdown and all their budget bottom-lines are consolidated in this sheet. This helped the producer monitor the budget limits for each department and also facilitate any dynamic changes in

budget allocation apart from keeping the total budget within the desired limit. Certain information is redacted as per the producer's wish.

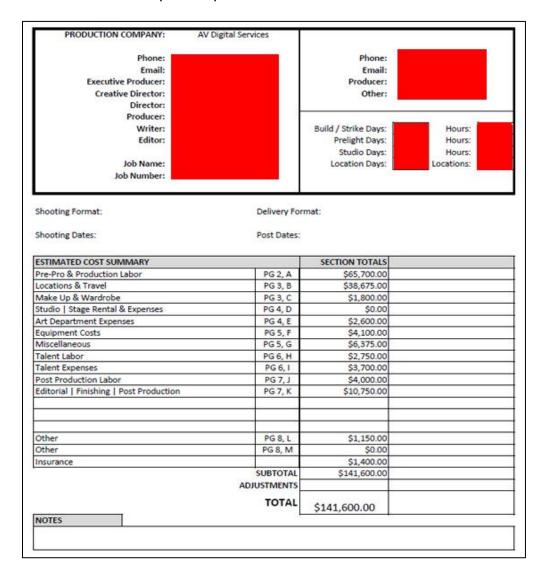


Figure 4-6. Entire project budget breakdown.

Figure 4-7 illustrates the budget breakdown for the production labor. This sheet has the individual salaries or total day rates for all the labor-crew not including the cast, involved on the project. Certain information is redacted as per the producer's wish.

PRODUCTION LABOR	DAYS	RATE	1.5x / 2x	TOTAL
Director				
Writers				
Producer				
1st Assistant Director				
Director of Photography	9			
Camera Operator				
1st AC (Assistant Camera)				
2nd AC / DIT	3			
Production Manager	8			
Production Coordinator				
Gaffer				
Best Boy Electric				
Electric				
Key Grip				
Best Boy Grip	33 1 3			
Grip	1			
Audio Mixer				
Boom Operator			1	
Script Supervisor	-			
Script Supervisor				
Production Designer				
Art Director				
Propmaster				
Set Decorator				
Construction				
Art PA	N 0			
Make Up Artist				
Make Up Assistant				
Costume Designer	8 1 3			
Set Costumer				
Catering / Craft Service	100			
Transporation				
Behind the Scenes				
Production Asst - Office				
Production Asst - Set	2			
	4			
SECTION A	-		SUBTOTAL	\$65,700.0
		AD	JUSTMENTS	

Figure 4-7. Production labor budget breakdown.

Figure 4-8 illustrates the budget breakdown for the location and travel and make-up and wardrobe expenses. This sheet a section each for 'Location and Travel' expenses and the 'Wardrobe and Make-up' expenses. The grouping of

these sections is just a coincidence. Certain information is redacted as per the producer's wish.

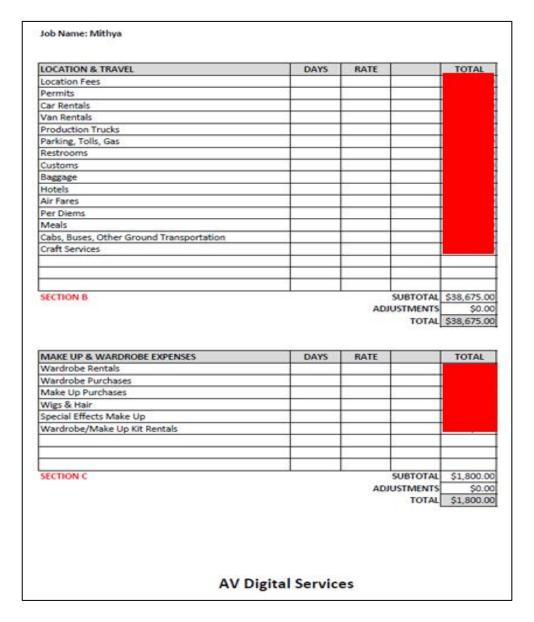


Figure 4-8. Location/travel/make-up/wardrobe budget breakdown.

Figure 4-9 illustrates the budget breakdown for the art department expenses. This sheet a section each for 'Studio and stage rental' expenses and the 'art department' expenses. Art department takes care of both on-location and

studio/stage rental art/property expenses. This project did not involve any studio/stage rental expenses. Certain information is redacted as per the producer's wish.

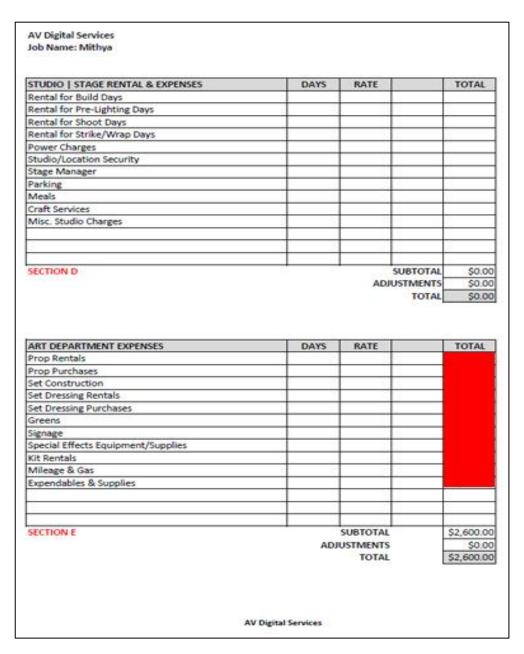


Figure 4-9. Art department budget breakdown.

Figure 4-10 illustrates the budget for the equipment costs and miscellaneous expenses. This sheet has a section each for camera related 'Equipment' expense and other 'Miscellaneous' expenses. Certain information is redacted as per the producer's wish.

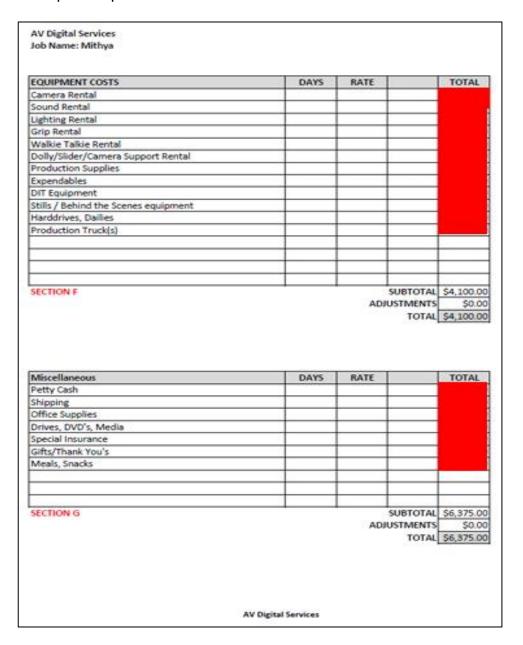


Figure 4-10. Equipment/miscellaneous budget breakdown.

Figure 4-11 illustrates the budget breakdown for the talent labor and talent expenses. This sheet has a section each for the 'Talent labor' expenses, which include salaries and consolidated day rates and 'Talent' related expenses. Certain information is redacted as per the producer's wish.

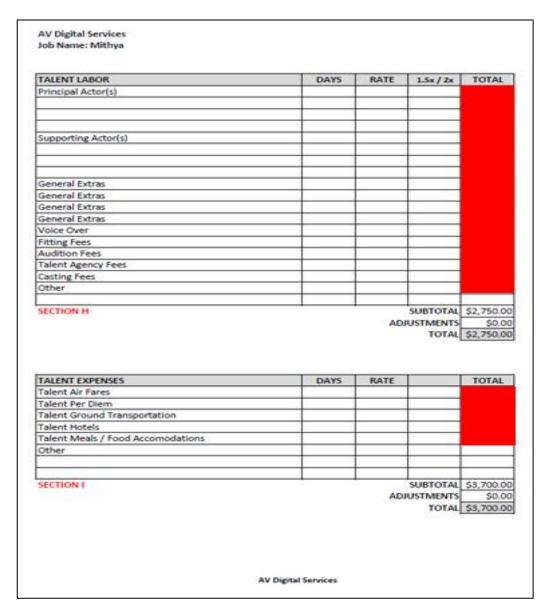


Figure 4-11. Talent labor/talent expenses budget breakdown.

Figure 4-12 illustrates the budget breakdown for the post production labor and editorial expenses. The 'Post Production Labor' expenses section includes the salaries and consolidated day rates for the post production labor while the 'Editorial' expense includes rental and license fees for the editorial services along with other logistical expenses certain information is redacted as per the producer's wish.

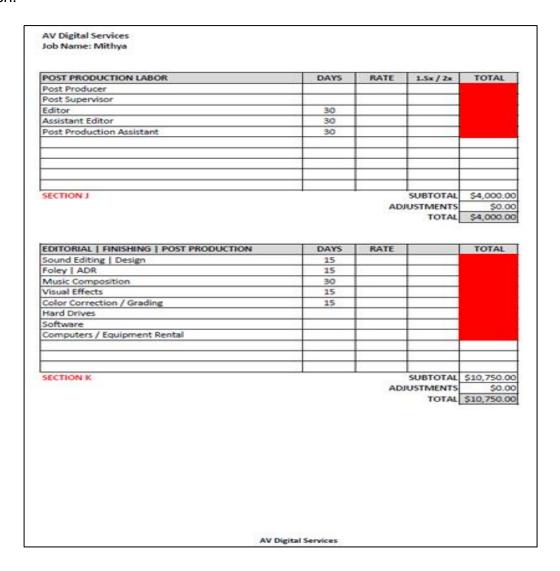


Figure 4-12. Post production/editorial budget breakdown.

Figure 4-13 illustrates the budget breakdown for miscellaneous expenses.

Certain information is redacted as per the producer's wish.

OTHER	DAYS	RATE		TOTAL
Principal Actor Fitness Trainer	27.13		-	101712
Principal Actor Fitness Products	-31			
		2		
<u></u>				
CECTION I	3	is a	CLIDTOTA	64 450 65
SECTION L		40	SUBTOTAL	
		ADJ	USTMENTS	\$0.00 \$1,150.00
				ψ±,250.00
OTHER	DAYS	RATE		TOTAL
		E	18 18	
	3		. 8	
		2		
		-	-	
*				
	X -	W		
	X	Ÿ.		
<u> </u>	3		. 15	
SECTION M		45	SUBTOTAL	\$0.00
		AD	USTMENTS TOTAL	\$0.00

Figure 4-13. Other expenses budget breakdown.

Chapter V: Results, Conclusion, and Recommendations

Introduction

This final chapter focuses on the end results the project has achieved, takeaway pointers from the project as the conclusion and certain recommendations based on the experiences and results from the current project.

Results

The incorporation of project management techniques by AV Digital Services for the production of their first feature film has shown immediate and remarkable results. This not only bodes well for the efficiency of the current project but also towards the efficiency with which future projects may be executed.

Project Questions

1. What is the total cost of the film production?

The total cost of the film's production [pre-production, production and post-production] has come out to be \$141600.

The estimated cost for the film production was \$150000.

2. What is the total time taken to execute the project?

It took 4 months to execute the project.

The pre-production for the project began in December 2015 and the postproduction of the project was completed in April of 2016.

This is in line with the estimated time for the project.

Additionally, this project could also accommodate another 'mini-project' of finishing a teaser/'proof of concept' film for the company's upcoming production, within the timeline of the current project.

3. What is the amount of savings, out of the originally allotted budget, realized at the end of the project?

The total cost of the film's production [pre-production, production and post-production] has come out to be \$141600.

The estimated cost for the film production was \$150000.

A savings of \$8400 was realized over the estimated \$150000, amounting to 5.6 % [8400/150000 * 100 = 5.6].

Conclusion

The pre-production, production and post-production stages of the film 'Mithya' were completed with 4 months and for about 5.6% less budget than originally estimated. Also, the project could accommodate the production of a teaser for the company's upcoming film within the same timeline and same budget. AV Digital Services is proud about the project's goals reached and is committed to incorporating project management techniques into their future projects.

The project management tools of 'Work Breakdown Structure' and 'Gantt Charts' helped the project immensely by helping to visualize the complex production process and identify various bottlenecks and areas of improvement. These tools greatly helped AV Digital Services to finish the project within the time and budget, even though they had limited experience executing a film project of this scale.

Recommendations

The project has fulfilled its objectives in efficiently completing the preproduction, production and post-production phases of the film within the budget and time specified. It is recommended that, with the confidence gained with implementing project management techniques in their film production processes, AV Digital Services could follow these recommendations:

- The project management techniques of 'Work Breakdown Structure' and 'Gantt Charts' should be applied consistently over every project to gain expertise over them.
- The company should explore other project management techniques that may cater to their specific needs of film production.
- For every project, the company should spend some time and effort to familiarize the heads of each department- Camera, direction, transportation, catering, production, etc., about the project management techniques.

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