Project Management for Animation, Games and Effects

An introduction to best practice and workflow

By Rehan Zia

Topics covered

- Projects and Project Management
- Conflict Management
- Risk Management
- Project Management Tools
- Tips on Managing Workflow

What is a project?

- A project is a sequence of unique, complex, and connected activities that have one goal or purpose and that must be completed by a specific time, within budget, and according to specification.

Sequence of activities

- A project comprises of activities that must be completed in some specific order, or sequence.
- The sequence of the activities is based on technical requirements, not on management prerogatives.
- To determine the sequence, it is helpful to think in terms of inputs and outputs. The output of one activity or set of activities becomes the input to another activity or set of activities.

Unique activities

- The activities in a project are unique.
- Something is always different each time the activities of a project are repeated.

Complex activities

- The activities that make up the project are not simple, repetitive acts.

Connected activities

- Connectedness implies that there is a logical or technical relationship between pairs of activities.
- There is an order to the sequence in which the activities that make up the project must be completed.
- They are considered connected because the output from one activity is the input to another.

One goal

- Projects must have a single goal.
- Very large projects can be divided into several subprojects, each of which is a project in its own right.
- This division makes for better management control.

Specified time

- Projects are finite. Processes are continuous.
- Projects have a specified completion date.

Within budget

- Projects also have recourse limits, such as a limited amount of people, money, or machines that are dedicated to the project.
- These resources can be adjusted up or down by the management, but they are considered fixed resources by the project manager.

According to specification

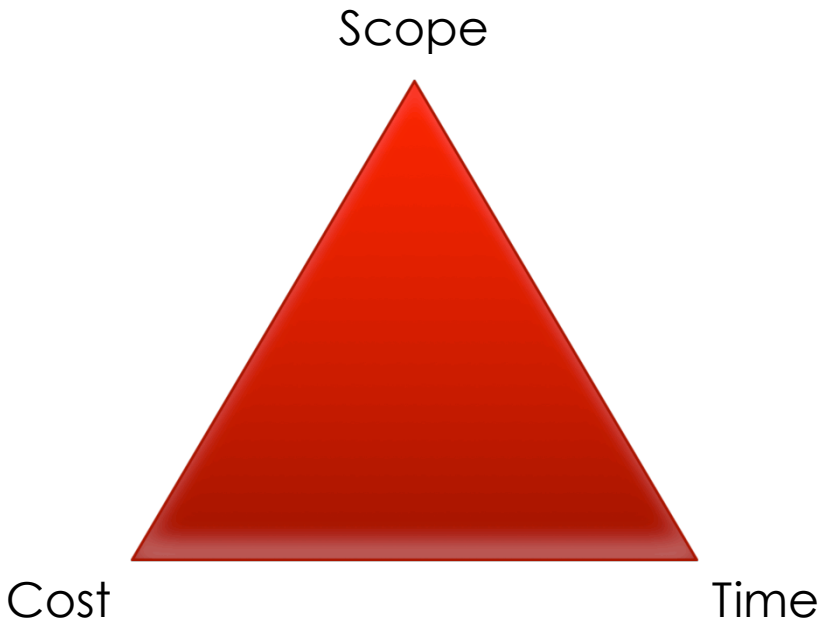
- The client, or the recipient of the project's deliverables, expects a certain level of functionality and quality from the project.
- These expectations can be self-imposed.
- Although the project manager treats the specification as fixed, the reality of the situation is that any number of factors can cause the specification to change.
- It is unrealistic to expect the specifications to remain fixed through the life of a project.
- Specification satisfaction has been a continual problem for the project manager and accounts for a large percentage of project failures.

Project Scope

- Scope is a statement that defines the boundaries of the project.
- It tells not only what will be done, but also what will not be done.
- The project's scope can change.
- Detecting that change and deciding how to accommodate it in the project plan are major challenges for the project manager.

The Scope Triangle

- Refers to the relationship between Time, Cost and Scope.
- These three variables form the sides of a triangle and are an interdependent set.
- If any one of them changes, at least one other variable must also change to restore the balance to the project.



Project Constraints

- Scope
- Quality
- Cost
- Time
- Resources
- Risk

Except for Risk these constraints for an interdependent set – a change in one constraint can require a change in one or more of the other constraints in order to restore the equilibrium of the project.

Defining scope of the Group project

- How many shots can a group member take on if he/she were working on it individually

Group Leader ?

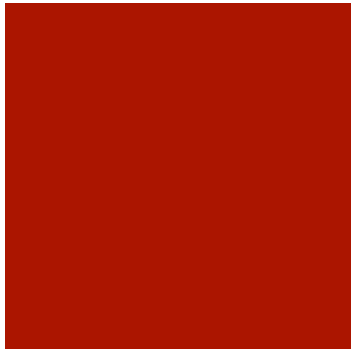
- Possesses leadership qualities
- Has ability to lead
- ~~Commands~~ Earns respect

- Implies a hierarchical structure

- Co-workers/colleagues/group members

Project Manager

- Responsible for managing the project resources, risk and deadlines.
- Needs to have a good idea of the overall production process and tasks involved.



Project Risk Management

Project Risk Management

- Comprises of 4 parts:
  1. Risk identification
  2. Risk assessment
  3. Risk mitigation
  4. Risk monitoring

1. Risk Identification

- Generally occurs as part of project planning activities
- Entire planning team is brought together to discuss and identify the risks that are specific to the current project
- The more complex and uncertain the project, the more important it is to have a dynamic and maintained risk management plan.

Risk Assessment Template

	Scope Triangle Elements				
	Scope	Time	Cost	Quality	Resources
Technical					
Project Management					
Organizational					
External					
.....					

2. Static Risk Assessment

- A risk assessment is carried out during planning and a risk management plan is put in place for the entire project.
- It does not change as the project progresses.

Risk Matrix

		Probability		
		Low	Medium	High
Loss	Low	Ignore	Ignore	Consider
	Medium	Ignore	Consider	Take Action
	High	Consider	Take Action	Take Action

2. Dynamic Risk Assessment

- Risk is continually assessed at each phase of the project.

3. Risk Mitigation

- Involves planning the responses that will be used if the identified risks occur.

- There are 5 different risk responses:
  1. Accept: There is nothing that can be done to mitigate the risk. You just have to accept it and hope it doesn't occur again.
  2. Avoid: The project plan can be modified so as to avoid the situation that creates the risk.
  3. Contingency Planning: If the risk event occurs, what will you do?
  4. Mitigate: What will you do to minimise the impact should the risk event occur?
  5. Transfer: Pass the impact should the risk occur (insurance)

4. Risk Monitoring

- Once you have identified the risk, assessed the probability and impact of the risks, and planned what to do if the risk event occurs, you need to monitor and control the project risks.
- Creating a risk log:
  - ID number: remains the same, even if the risk event has occurred and been managed.
  - Risk description: is a shot statement of the risk event.
  - Risk owner: Person who is responsible for monitoring the status of the listed risk.
  - Action to be taken: What the owner is going to do to deal with the risk event.
  - Outcome: Describes what happened as a result of your mitigation strategy.

Situations that require team operating rules

- Problem solving
- Decision making
- Conflict resolution
- Consensus building
- Brainstorming
- Team meetings/Dailies

Problem solving

- 1. Delineate the opportunity and define the problem
  - Establish a formulation and definition of the problem and the desired results that a solution to the problem will provide.
  - Helps develops the boundaries of the problem – what is in scope and what is out of scope

Problem solving

- 2. Compile the relevant information
  - Having the definition, identify and specify the data elements that are needed to further understand the problem and provide a foundation on which possible solutions can be formulated.

Problem solving

- 3. Generate ideas
  - Brainstorming
  - Identify as many solutions as possible
  - Think outside the box
  - Look for creative and innovative approaches

Problem solving

- 4. Evaluate and prioritize ideas
  - Narrow down to a few ideas
  - Develop criteria for selecting the best possible solution

Problem solving

- 5. Develop implementation plan
  - Once the solution is identified, you need to build a plan to implement that solution.

Decision making

- Directive
  - Person with authority makes the decision
  - May only have the information he/she possesses
- Participative
  - Everyone contributes
  - There is better commitment
  - It may be difficult to reach a consensus at times
- Consultative
  - Middle-ground approach
  - Person in authority makes the final decision after consulting with all other members

Conflict resolution

- Conflict resolution is a much more sensitive situation because it is confrontational and situational.

Conflict resolution styles

- Avoidant: Some people will try and avoid a direct confrontation and may even agree to outcomes that they themselves oppose.

- Combative: Some people seek out confrontation which may be advantageous at times in that it tests the team's thinking before making a decision. At other times, they may raise the level of stress and tension and be seen as counter productive. A project manager will need to identify combative team members and mitigate the chances of these situations arising.

- Collaborative: Seeking common ground as the basis for moving ahead to a solution. Team members do not seek to create conflict unnecessarily and the approach is constructive, not destructive.

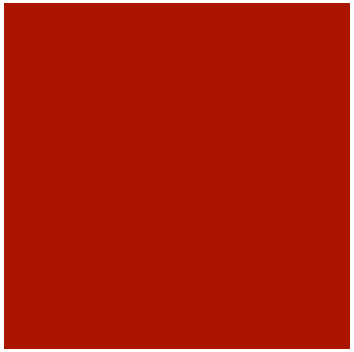
Brainstorming sessions

- Team assembles
- Everyone throws out ideas – no discussion (except clarification) is permitted
- Once ideas are out on the table, try to combine, revise ideas based on each member's perspective.
- In time, solutions will emerge – don't rush the process
- Test each idea collectively as a group

Communication

- Dailies
  - Progress reports and work presented by each group member
    - State whether :
      - on plan
      - x hours behind schedule and will catch up by ?
      - x hours behind plan and need help
      - x hours ahead of plan and available to help with other tasks
- Group calendar
- Collaborative work space – 3rd year lab

Close you eyes and think of the colour purple

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Challenges with animation projects

- Quantifying progress in visual images
- Cascading effect of issues not being identified early
- Identifying key project phases may be difficult

Storyboard

- Are very helpful in providing, at a glance, the framing for each shot, the number of shots, the staging for actors, sequence of shots and camera angles.

Animatic

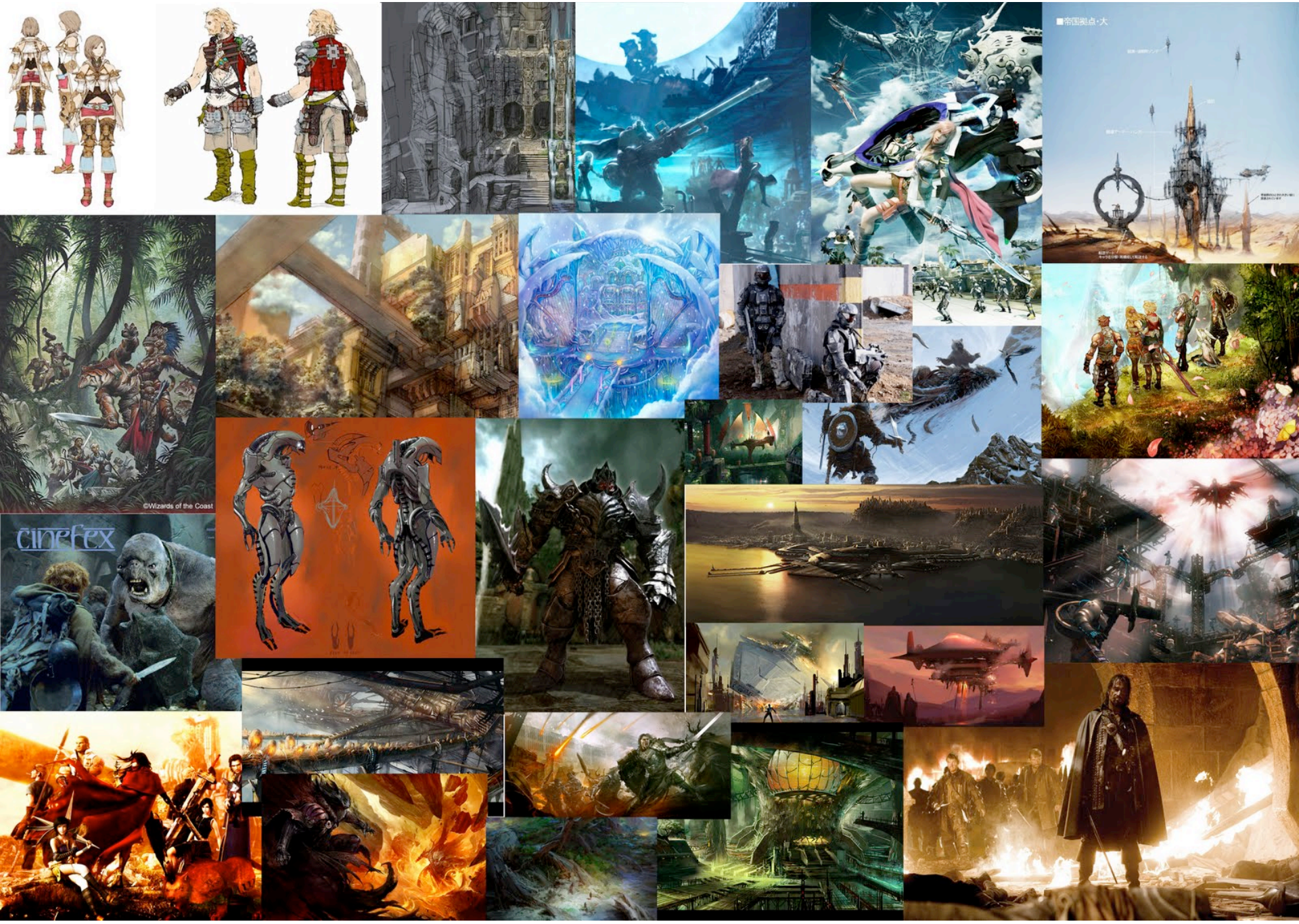
- Helps demonstrate not just the timing and movement of the characters and camera for each shot but also the transitions between shots.

Previs

- More refined than an animatic
- Uses focal lengths, scene scale indicative of the final film
- Used as a test for informing key production decisions
- http://www.nvizage.com/

Mood board

- A combination of images, colors, and textures that define the style of the project.
- It is a tool for creatives and clients to come to an agreement about style.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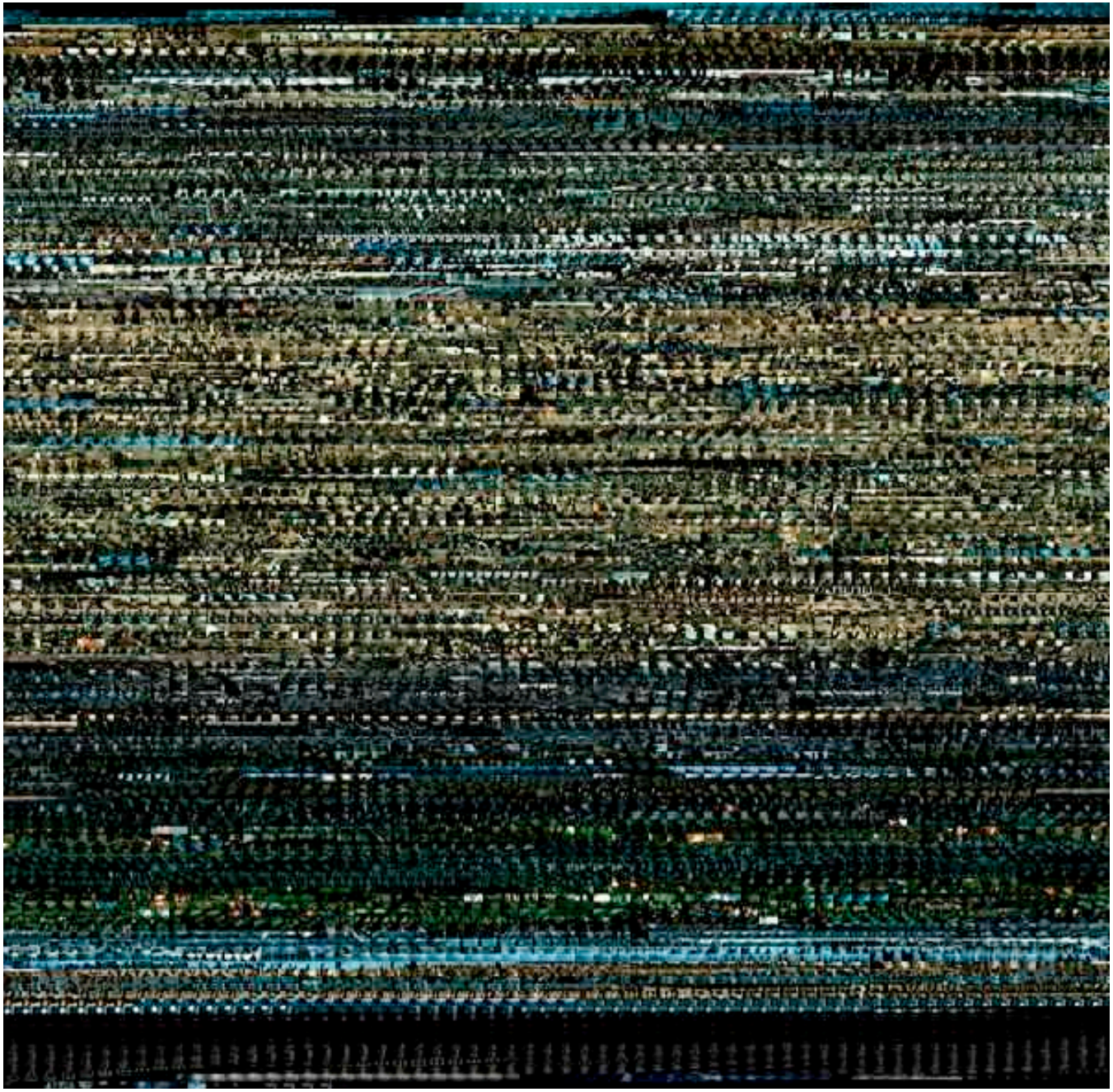
Colour Script

- http://www.pixar.com/behind_the_scenes/Colorscripts



Proof of Concept

- Is a scaled down version of the bigger project encompassing all the same challenges, workflow and pipeline issues, tools and techniques that you come across in your project.
- Informs best practice
- Helps identify issues that you may not have considered before
- Helps you work out production render times
- Gives you a time estimate – in terms of scale, if the proof of concept was 5% of what the final project would be, multiply the time it took to do the proof of concept by 20 to get an estimated number of hours for the final project.

Group Project Tips

- Create an online calendar listing all classes and individual calendars for each group member – include everything – slots for Innovations and Masterclass assignments, exam prep times, gym sessions, doctor's appointments..
- Identify and schedule time slots for Group Project work for group and individuals – do not count weekends as you need time away from projects – also in worst case scenarios, this could be used as contingency time.
- Work out how many hours are available for you to work on your Group Project and less 15% risk margin.

Group Project Tips

- See how the estimated time worked out from the Proof of Concept test compares to the number of hours you have available for the Group Project on the calendar
- Be pragmatic
- If working in a group, think about how many shots each group member would be able to produce if they were working on their own individual projects
- Having more people in a group doesn't necessarily mean better project quality or more shots

Group Project Tips

- Do not rely on the render farm when estimating render times!
- Have work collated and ready to present to tutor to get the most out of tutorials
- Test everything!
- Primary reference is most important – if you are animating a dragon, go and spend time with one, play with it, photograph it, video it!
- Do not copy a reference of a reference of a reference!
- Do jump into production straightaway. Time spent in planning and pre-production will benefit you later during production and things will run much smoother.

Group Project Tips

- Avoid using 50 different softwares, if you can help it!
- Save Maya files as .ma not .mb (except when using animation referencing)
- When rendering in Maya, if the progress bar shows frames being rendered out but you don't see any files appearing in the directory, check disk space
- Rather than waiting for entire sequence to render before you start comping, render every 10th or 25th frame to start comping in parrallel

Group Project Tips

- Your tutors wear many hats – they are the clients, the producers, the supervisors and markers – nothing brings them more happiness than to see you and your project succeed. Whatever issues in your project you are facing, chances are they have come across them before. Talk to them and listen to what they have to say!

SWOT Analysis

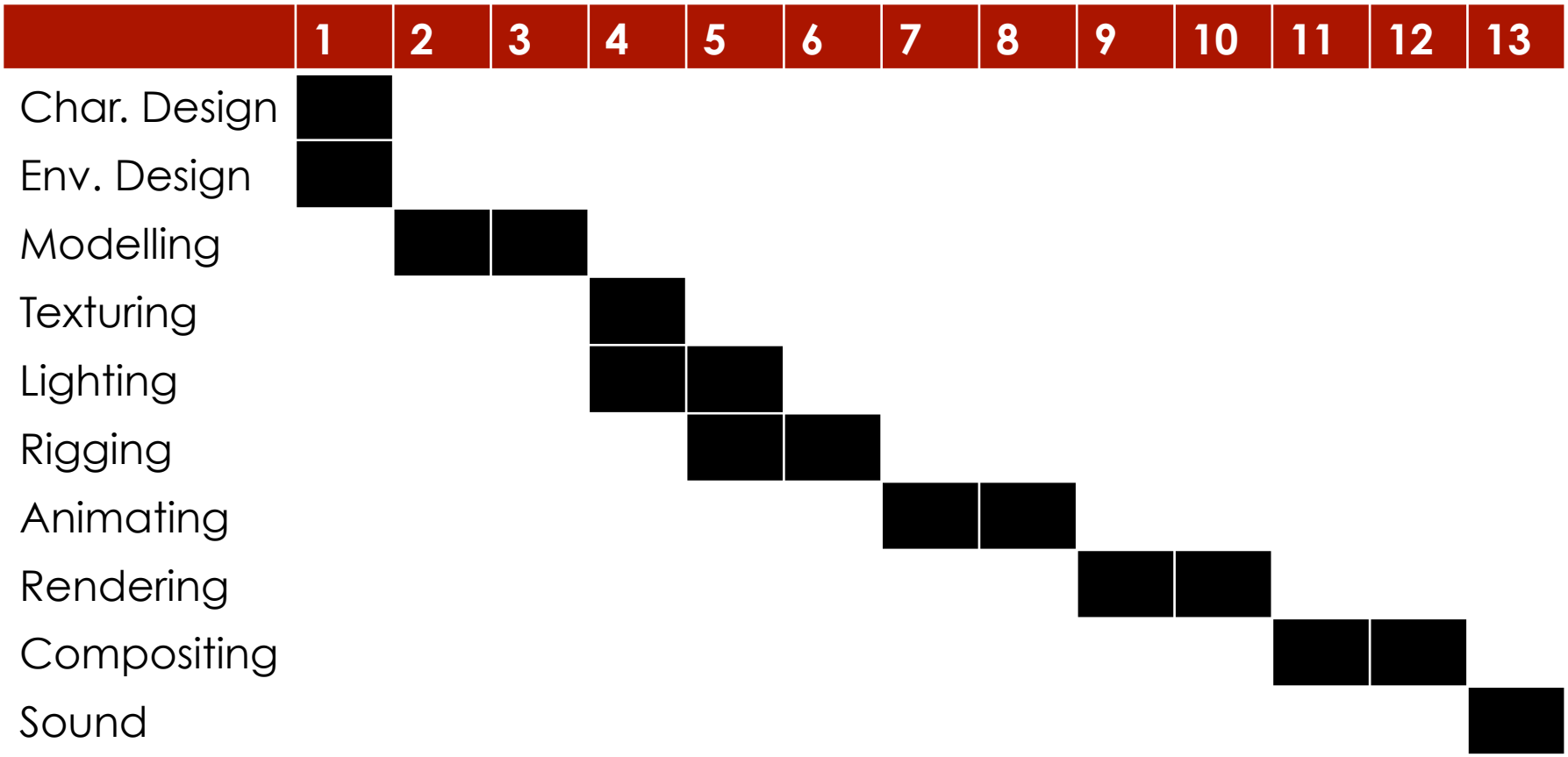
Strengths RBDs	**Opportunities** Working with live action
Weaknesses Character animation	**Threats** Character design

Skills Matrix

Joe Bloggs	Novice	Beginner	Expert	Teacher
Lighting		■		
Rendering	■			
Modelling			■	
Animation				■
Rigging				■
Compositing		■		
Texturing	■			

Novice: Needs to learn task before starting it
Beginner: Can work on task but needs supervision
Expert: Can work on task unsupervised and can problem-solve
Teacher: Is an experienced expert who can supervise and teach others

Gantt Chart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Env. Design
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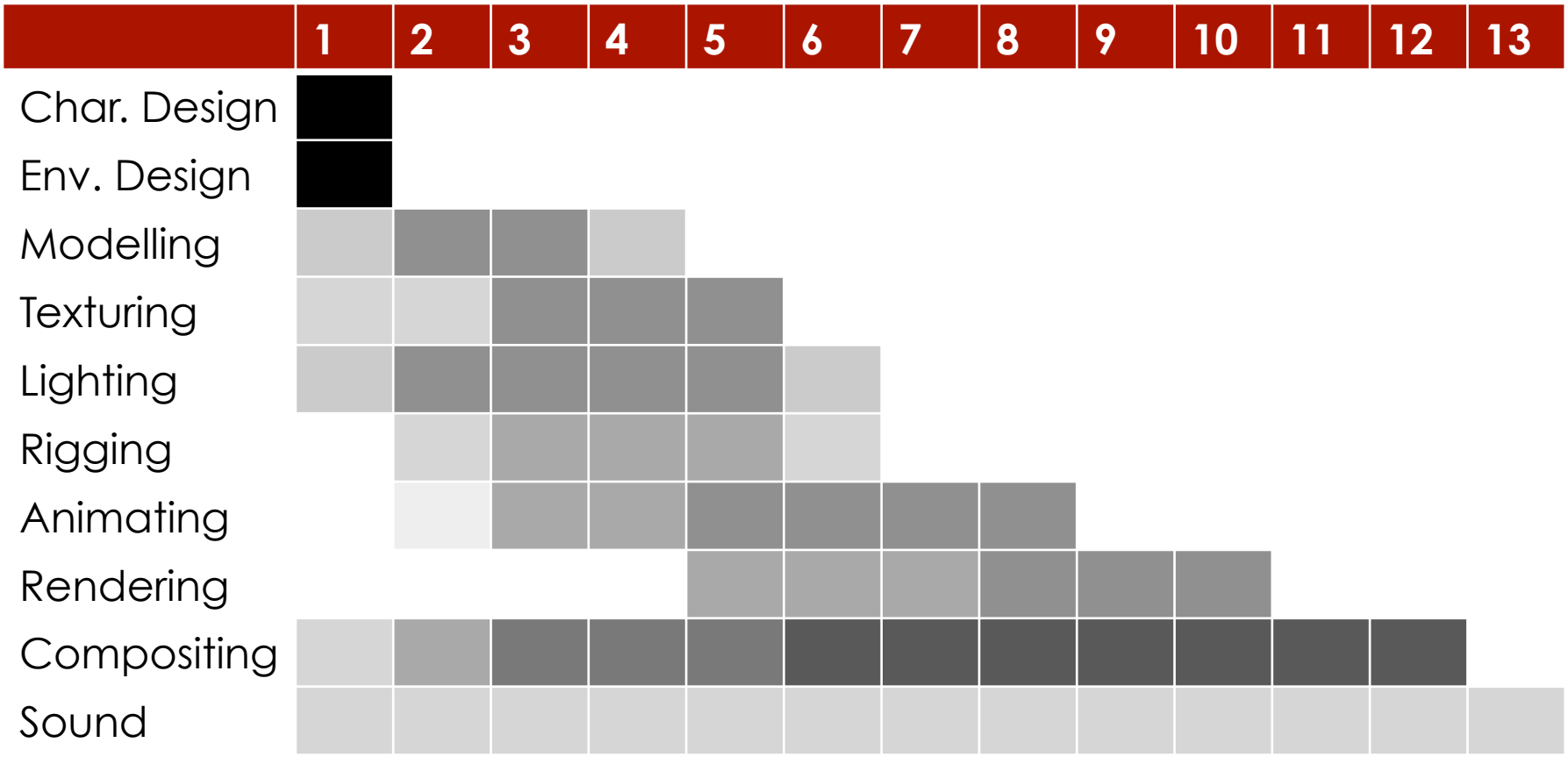
Texturing
Lighting
Rigging
Animating
Rendering
Compositing
Sound

Gantt Chart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Critical Path Analysis

- https://www.youtube.com/watch?v=SF53ZZsP4ik

Some activities that can go on the Pert Chart

- Concept art
- Storyboard
- Animatic
- Previz v1
- Lighting and Shading test
- Material match
- Primary reference collection
- Secondary reference collection
- Pilot filming
- Final filming

Report

- Taking notes as you go along
- Record production hours for each task
- Key decisions – why you took a particular decision, what was the alternative
- Critical Reflection
- Think of the report as a guide for a student attempting a similar project next year.

References/Further Reading

- **Effective Project Management: Traditional, Agile, Extreme Paperback – 4 Feb 2014** by Robert K. Wysocki
- **Project Management: Planning & Control Techniques Paperback – 5 Apr 2013** by Rory Burke
- **The Visual Effects Producer: Understanding the Art and Business of VFX Paperback – 9 Oct 2009** by Charles Finance, Susan Zwerman
- www.rehanzia.net/teaching