# Budgeting and Scheduling Your Game

Be advised that a the schedule and the budget is not only for you to use as you develop the game; a well-done schedule will help the publisher, investor, or banker see the scope of your project and, more importantly, it will be the biggest illustration as to whether you can actually produce the proposed title. A well-developed schedule is yet another factor a publisher will look at when determining whether you can do the game you propose and if you understand what you are trying to get into.

Trying to write a schedule without proper planning and research is a waste of time at best and potentially a great danger to your business. Schedules (like budgets, design documents, and all important documents) come from research and prior planning. If you write a business plan or proposal and gloss over (or make up) the answers, then you doom yourself and your proposal. When a publisher looks at your schedules and budgets, they will spot inconsistencies and errors right away.

**Schedule before Budget**

You must take several steps in order to gather the information you will need to properly schedule your game. This information includes, but is definitely not limited to the following steps:

* Interview, separately and in groups, the team members to assess their needs and opinions on your first pass at the schedule.
* Interview those who have done what you are about to do and comparing notes. Talking to experienced developers or any person that has managed a sizable project will be a great help here.
* Read up on the latest in the technology, methods, and equipment you will be using.
* Be intimately familiar with each task and goal that must be accomplished in your project, or have a team of leads who are.

To generate budgets and schedules properly you have to understand project management to some degree. Project management for a game project entails the following:

* Planning the game project
* Extracting the schedule and the budget from those plans
* Controlling the generated budgets, schedules, activities, and overall objectives throughout the life of the project.

A good project manager will also do a thorough postmortem of the project for future reference.

**Plan Your Dream Scenario**

To begin with, you should plan your game title assuming you have the best possible resources at your disposal, whether they will actually be available or not. The time for compromise is later. Start by assuming you have the money to buy the necessary equipment, rent the best office, and pay the best people to do the work. The initial game design should be done this way as well; design the best game possible. You will juggle numbers and make compromises later.

This approach opens up opportunities to achieve goals previously assumed impossible or improbable. By aiming high, you may make it halfway to your goal, but by aiming low you will never get above the low standard set from the beginning of the project.

**Put It on Paper**

You should already have at least a rough version of your design document done at this point, the basics of what your game will be. At this point the seemingly simple notes you are jotting about your title, genre, technology, and scope of the game are almost an encoded version of your schedule and budget. After the actual treatment is written, a publisher can read it and have a very good idea what it will take to develop the title you propose. They can then check your supporting documentation to see if it is in line with what they think to be true.

Warning: I must repeat that your statements of performance in your cover letter, design documents, and other selling documents tells the publisher what you are proposing, and your budgets and schedules tell them whether you know what you are talking about.

Not until you actually list everything that has to be done and everything that you want to do on paper in an organized fashion will you start to see what you really have ahead of you. And once you start assigning responsibilities to the tasks, you start to see overlap in schedules and work flow.

Also, don't forget holidays, conventions, and other milestones and dates in your schedule. These days, even one-day events will be critical if they fall on a milestone day. If you set a milestone on a religious or national holiday when a key worker is needed, there may be conflict if they expect that day off. Holidays and days off are part of employee hiring and management as well.

Following are some common scheduling mistakes made by beginners:

* Defining the scope of the project (time and monetary budget to reach the desired outcome) by what they think the publisher wants to hear, or using so-called conventional wisdom to give pat answers, such as a game takes two years and $2 million to develop. That time and dollar figure will not always fit any given project.
* Defining the scope of the project using personal desires or agendas; inflated budgets, huge salaries, and even the opposite, tiny salaries and not enough resources to do a project hoping to woo a deal out of the publisher.
* Defining the talent needed by whom they have on hand or personal loyalty. This is not to say that loyalty should not be rewarded, but if any member of the team cannot produce the needed assets for the game, then they have to be released or demoted. This is where the reality of business can be harsh, and it's hard to be the boss when you have to let someone go. However, people management is another important topic and very different from planning a project. It is O.K. to schedule and budget supplemental employees or contractors to complete your game. Unless you have done it before, people management is very difficult and especially so with friends and family.
* Not understanding each and every decision in the plan and being able to justify those decisions. Salaries are often one of the biggest areas where developer and publisher disagree. While a developer may see certain top developers sporting the rich lifestyle, they may not be aware of what the typical pay rates are in the game industry.

**Starting the Process**

If your team does not have enough experience in developing projects, you may have to complete a running demo just so you and your team will be intimately familiar with the tools and code base used. Only this way can you know if there are any supplemental tools needed and what is involved in writing the additional code your game will require. Also, you need to be well aware of what the technology you licensed has been used for; it's amount of support, upgrades forthcoming, and the strengths and weaknesses of your technology.

There are four basic steps to scheduling your game development. They are:

1. What must be done? Having your game defined and experience with the technology to be used is imperative. You simply need to know how many levels you will have, sound effects, menu screens, code libraries, and every aspect of your game. What must be done also includes equipment purchases, office rental, hooking up phone lines, and so on.
2. Who will do it? You can decide who will do what based on what needs to be done. If your game is art-heavy, you need to have the right number of artists on hand.
3. What resources are needed to do the job? With every person you add to the team, you must add office space and furniture, computers and equipment, software and salaries. This may also include added legal expense for each contract that must be negotiated. Of course, this also includes game development software each team member will need such as programming technology and the 3D/2D tools the artist may need.
4. When must it be done? Each person needs detailed schedules for their work and an understanding of how their work affects the whole of the project. When deadlines are set, they must be met. The effects of one team member missing a deadline can have drastic effects team-wide.

You should break each of the tasks down into units using days as the smallest unit of time. A task should not exceed a week or two in length. This will be easier to track and control during development. At a weekly status meeting a one-week task can be checked and verified.

**Estimating**

It is important to be sure that you know you are operating on schedules and budgets that are estimates. No one can predict a budget or schedule with 100 percent accuracy.

The purpose of estimating is not to protect you from huge mistakes or your own incompetence, but rather to show a realistic amount of variation in a schedule. This is usually expressed in a fluctuating percentage of some resources: time, money, or other resources. Explain how your estimates were made based on experience or research and give a "freshness date" for the estimate. Some of your estimates may be based on factors where time will affect the accuracy of the budget or schedule.

**The Most Effective Solution**

The primary concern of project management should not be solely focused on the scheduling, but picking the right solution to the completion of the project. As I've said, scheduling is a by-product of project management. The right person for the job and the right tools -- in short the most effective approach -- is your main goal in project management.

**The Budget**

Let's look at the factors that are involved in the budgeting of a game.

**Performance =** the quality of the job to be done.

**Time =** the amount of time needed to do the job.

**Scope =** the extent of the work being done, or the size of the project.

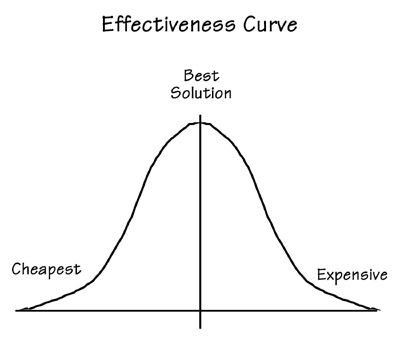
**Cost =** the overall resource that is needed to do the job. Please note that cost is not simply a final dollar figure.

**Performance + Time + Scope = Cost**

If, for example, you plan a Triple-A title (performance and scope) that you plan to take two years to develop (time) the cost will fall into a certain range. Changing any of these factors will effect at least one of the others, and will usually affect the cost. If, for instance, you decide to use fewer people and take four years to develop your game title assuming you will save money, then look at the big picture. Your costs actually go up in this scenario, as you have to pay for two more years of development overhead and expenses. This also applies to morale, cash flow, and other areas of the project. Think of the effect a four year long development cycle may have on an individual. Four years is generally too long to work on a game from all points, marketing, technology, and morale. You will lose people to boredom; your technology and the market will change so you will be faced with more delays and costs in trying to "develop on the fly."

Likewise, if you try to do the title in half the time, costs will go up as well. In order to meet a deadline in half the time you will need to pay personnel extra money to do the game that much faster, or pay premiums for more qualified individuals to do the work on an accelerated schedule. Think of the effect an intense non-stop one year development schedule may have on a team. The stress of trying to do a two year job in one year may kill the project altogether.

When scheduling you will start to see sweet spots in the process, where you get the most optimal effect. The peak of maximum effectiveness, that is, the point at which you begin to lose effectiveness if you go too far in either direction.



An example being, hiring an inexperienced programmer for the job who may take longer to learn the tools and not work as fast, or hiring an overpowered, high priced, or even celebrity status programmer when he is not needed.

**Statements of Performance**

This aspect of the proposal goes back to the importance of proper design, research, and product development. If you state in your proposal, "We will make the best 3D shooter ever!" this is a Statement of Performance. If this phrase is your goal and what guides the expectations of the team that has adopted it as the vision for the title, and you then move unconsciously into development without the tools, talent, knowledge, and know-how to make that statement of performance a reality, than you are doomed for frustration and failure.

**Budget Research**

Researching a budget is not simply finding the cheapest possible solution. The goal here is to weigh the choices and brainstorm new ones to get to the best solution for the problem.

An example:  
Say you have several long cut scene movies in your game that are being produced by a 3D animator. The movies must be rendered on a computer frame by frame, which takes computer time to do. You are faced with a few decisions; Do you buy the extra, high end, computer system that can handle the rendering, budget time to render on all the computers overnight or on weekends, or maybe send your files to a company with a render farm (a large computer network specifically designed to render 3D animation) and pay the fee for no hassle rendering? Other options may also arise which may include redesigning the game to have reduced, or no cut scenes, or outsourcing the 3D animation completely.

**Writing Down the Numbers**

A game budget usually breaks down into two parts, 'one-time costs' and 'recurring costs'. One time costs are for equipment, software, certain contractors, and down payments. Recurring costs are salaries, taxes, insurance, and rents.

Once you have defined the following, you can start the spreadsheet.

The level of **performance** you wish to achieve (level of technology, art, licensed property)

The amount of **time** you need based on market movement and other factors.

The **scope** of the Project (Add on pack, demo, cutting edge game)

And the **cost** (Artists, programmers, designers, computers, software, offices, etc.)

Below is a sample budget spreadsheet based on a 24-month development cycle. The sample is not meant to represent any real type of game or development situation.

|  |  |  |  |
| --- | --- | --- | --- |
| **ITEM** |  | **COST** | **TOTAL** |
| **PROGRAMMING** |  |  | 0 |
| Lead Programmer |  | 7000 x 24 | 168000 |
| Assistant Programmer |  | 3000 x 24 | 96000 |
| Program Testing |  | 12000 | 12000 |
| **ART AND GAME DESIGN** |  |  |  |
| Producer |  | 10000 x 24 | 240000 |
| Deisgner |  | 3000 x 24 | 96000 |
| 3D Artist |  | 3500 x 24 | 84000 |
| Level Designer |  | 3500 x 24 | 84000 |
| Animator |  | 1500 x 24 | 36000 |
| 2D Artist |  | 1500 x 24 | 36000 |
| **MANAGEMENT** |  |  |  |
| Business Manager |  | 5000 x 24 | 12000 |
| Accounting |  |  | 6000 |
| Legal |  |  | 5000 |
| **3D ENGINE LICENSE** |  |  | 50000 |
| **SOUND** |  |  |  |
| Sound FX |  | 10000 | 10000 |
| Music |  | 5000 | 5000 |
| **PCs** |  |  |  |
| 6 PC Workstations |  | 4000 x 6 | 24000 |
| **SOFTWARE** |  |  |  |
| 3D Studio Max | 3000 x 3 | 9000 | 9000 |
| Photoshop | 500 x 3 | 1500 | 1500 |
| **OFFICE EXPENSES** |  |  |  |
| Office Equipment |  |  | 24000 |
| Rent |  | 1300 x 24 | 31200 |
|  |  |  |  |
| **TOTAL** |  |  | **$1,137,700.00** |

**Warning! Employees and Personnel!**

You need to know whether your team members will be full time, part time, or freelance, what their salary and benefits will be, and other expenses not covered here. This is where you should have a good accountant help you determine the actual cost of having an employee. In America, after you pay your employee *x* amount of dollars, there are still many other expenses involved such as taxes, insurance, benefits, and other items. Having an employee will most likely may add up to be the largest portion of your budget.