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ULTIMATE GUIDE ON RESOURCE MANAGEMENT IN A MULTI-PROJECT ENVIRONMENT

Intro

Resource management is an essential part of orchestrating any project. If managing a single project can be quite easy, then running multiple projects with a lot of different resources engaged or a limited number of people in case of a shared resource pool is really challenging.

Efficient resource management is a key to successful project completion.

We've compiled this guide to help you make your resource management as powerful as possible so that you will keep your projects within time and budget frames.

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1 The Essentials of Resource Management

Resource management is the core of orchestrating any project that implies allocating different types of resources to complete different tasks as part of projects. Powerful resource management can reduce your project costs and ensure you'll complete the project on time and within budget.

The pillars of efficient resource management are as follows:

Thorough resource planning

Proper resource allocation

Resource load forecasting

Resource consumption tracking

To make each of the pillars operate successfully, a resource manager needs the following types of data:

- Clear project requirements;
- Data about resource availability, capacity, and skills (if we're talking about human resources);
- Up-to-date information about the project flow;
- Possible risks;
- Teams' performance;
- Lessons learned.

Make sure you have all this data. With this information in hand, you can easily identify the number of employees necessary to execute every task and the whole project, keep the workload and demand balanced, as well as forecast any resource shortages and prevent problems that may arise.

2 How to Overcome the Main Resource Management Challenges

Based on the results of the research with the participation of more than 4,000 business owners, CEOs, and project managers who work in multi-project environments we've distinguished the following three major challenges.

Resource overload

Even one overloaded employee may affect the whole project by blocking each subsequent part of the job, which may cause a chain of delays and even ruin the final deadline.

As shown in **Figure 1**, when you commit the capacity of four people to a workload for eleven, your output will suffer. Upon reducing the workload, the output will definitely increase because team members will be capable of focusing on fewer projects, allowing them to collaborate effectively and experience less stress. Make sure that none of your resource groups is more than 10% overloaded. After the workload and output become balanced, **lead time drops more than 70%**.

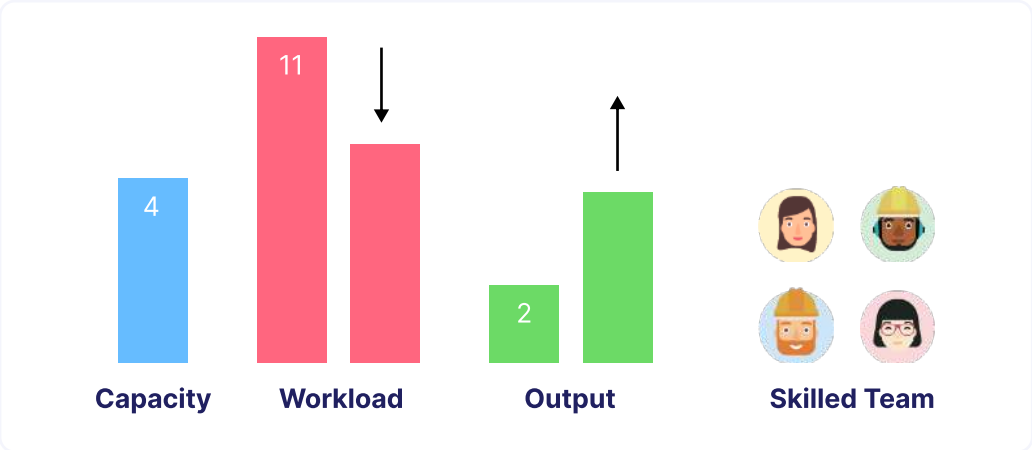


Figure 1. Causality between load and output.

Interdependencies between projects

Overload leads to decreased output. This happens not only in the overloaded group but also in groups further along the process because of dependencies. Look at the above example again and you'll see that the final output is showing the actual capacity of the group.

Wrong task priorities or ignoring task priorities

Without clear priorities, project success is at risk. **The most frequent reasons for the absence of priorities:**

- Resource managers compete for workers in the shared pool of resources because they want to deliver on time.
- Project managers treat their own projects as the most important ones.
- Employees prioritize projects and tasks based on their intuition or personal preferences.

The figure below shows three ongoing projects with task dependencies and strict deadlines.

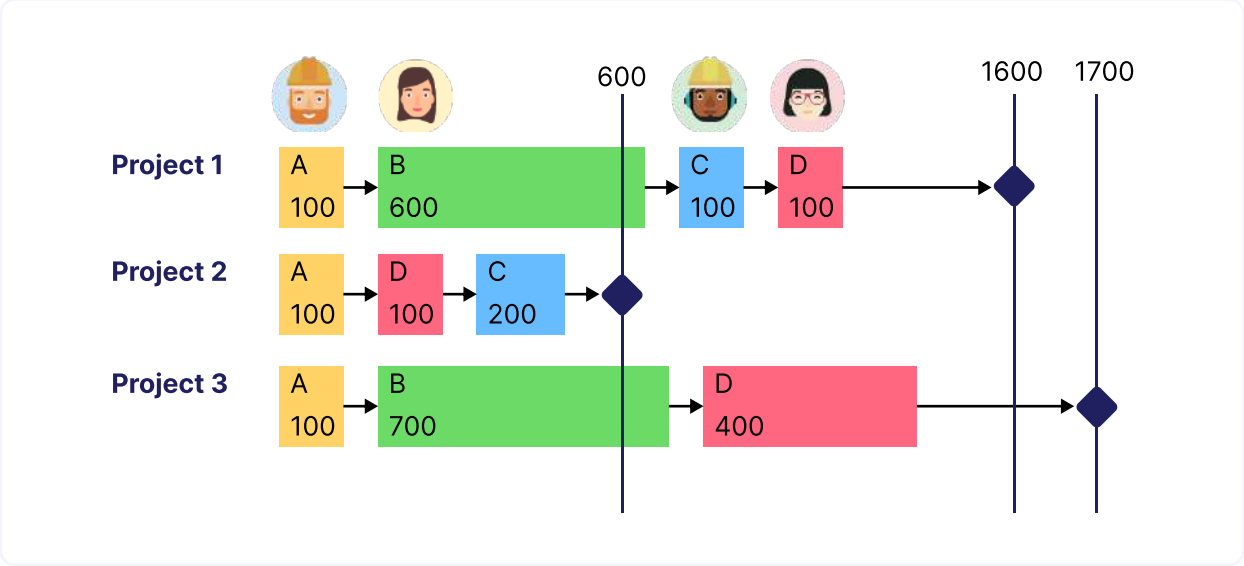


Figure 2. Which project should employee A start working on?

Wrong task priorities or ignoring task priorities

Speaking about the figure above, each team member can start their task only after a previous part of the job is completed. Which project should employee A start working on? We have three parallel tasks for employee A, which provide for six possibilities of what A should start with. But only one of these options will lead to finishing all projects on time. If employee A had five tasks in parallel, that would provide for 120 possibilities. In our case, the right order for employee A will be 3-2-1. Have you ever calculated how the task sequence influences your project success?

Overload, poor outcomes, and wrong priorities can be distressing not only for the employees involved but also for the company as a whole.

What's the solution?

Rule 1

Get optimal workloads by managing multiple projects at once as an integral system with regard to their interdependencies.

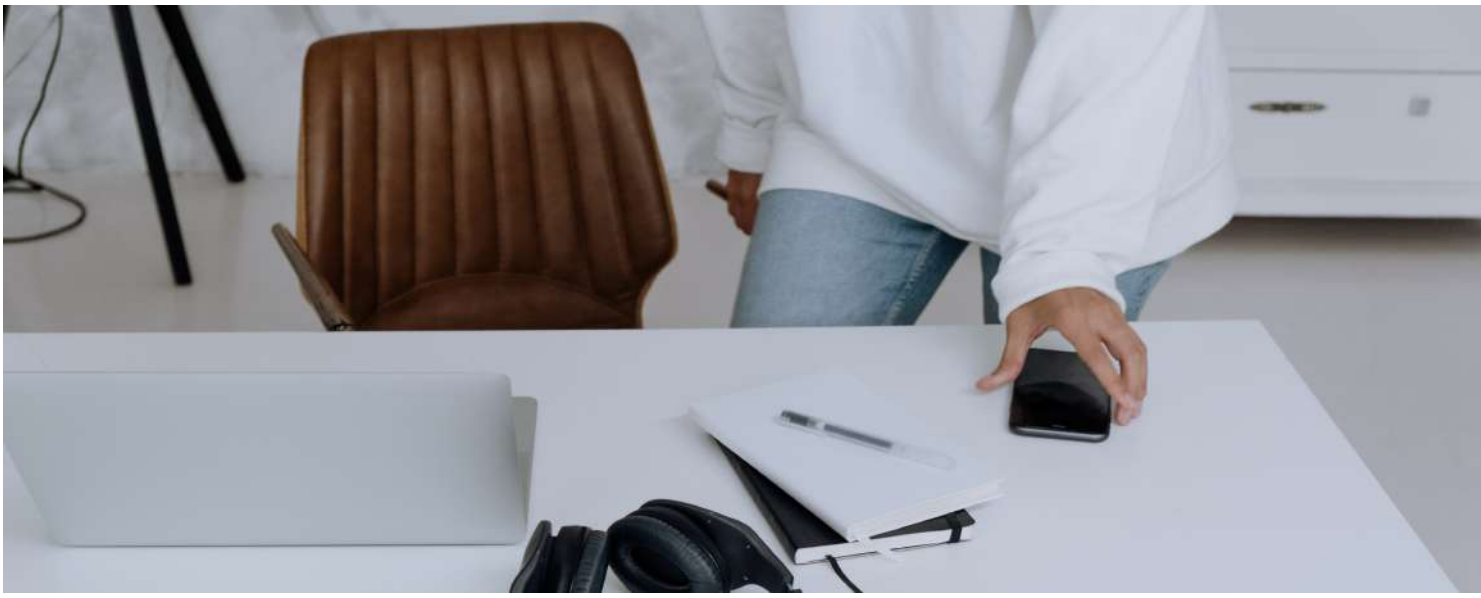
Rule 2

Balance output in multi-project environments.

Rule 3

Set the right priorities across multiple projects.

3 Getting Rid of Student Syndrome and Parkinson's Law Effects



Student syndrome is purposeful procrastination when an employee believes he or she has more than enough time to complete the task and postpones it until the last moment possible. It can result in:

- **Missed task due dates.** And if we have a number of interrelated tasks in a row, it affects the whole chain. If a predecessor task hasn't been completed on time, the successor cannot be initiated. Thus, the whole project is affected as a result. And given that any project environment is prone to uncertainties, the likelihood of finishing it before the due date is minimal.
- **Too long task durations.** This, in turn, makes the whole project twice longer than it could be. The more time we have, the less productive we become.

The following factors can provoke student syndrome:

- Unclear Priorities
- Overload and Multitasking
- Lack of motivation
- Tasks' difficulty
- Uncertainty or lack of knowledge about the task

Parkinson's Law arises when too much time is allotted for a task - you'll spend as much time on the task as you're allowed to, even if the task itself requires twice less. It usually happens when time estimates are exaggerated with an eye on Murphy's Law (If something can go wrong it will go wrong). But when we put too much safety into a task's duration it becomes prone to uncertainties. The more time is given for task completion, the more time is wasted.

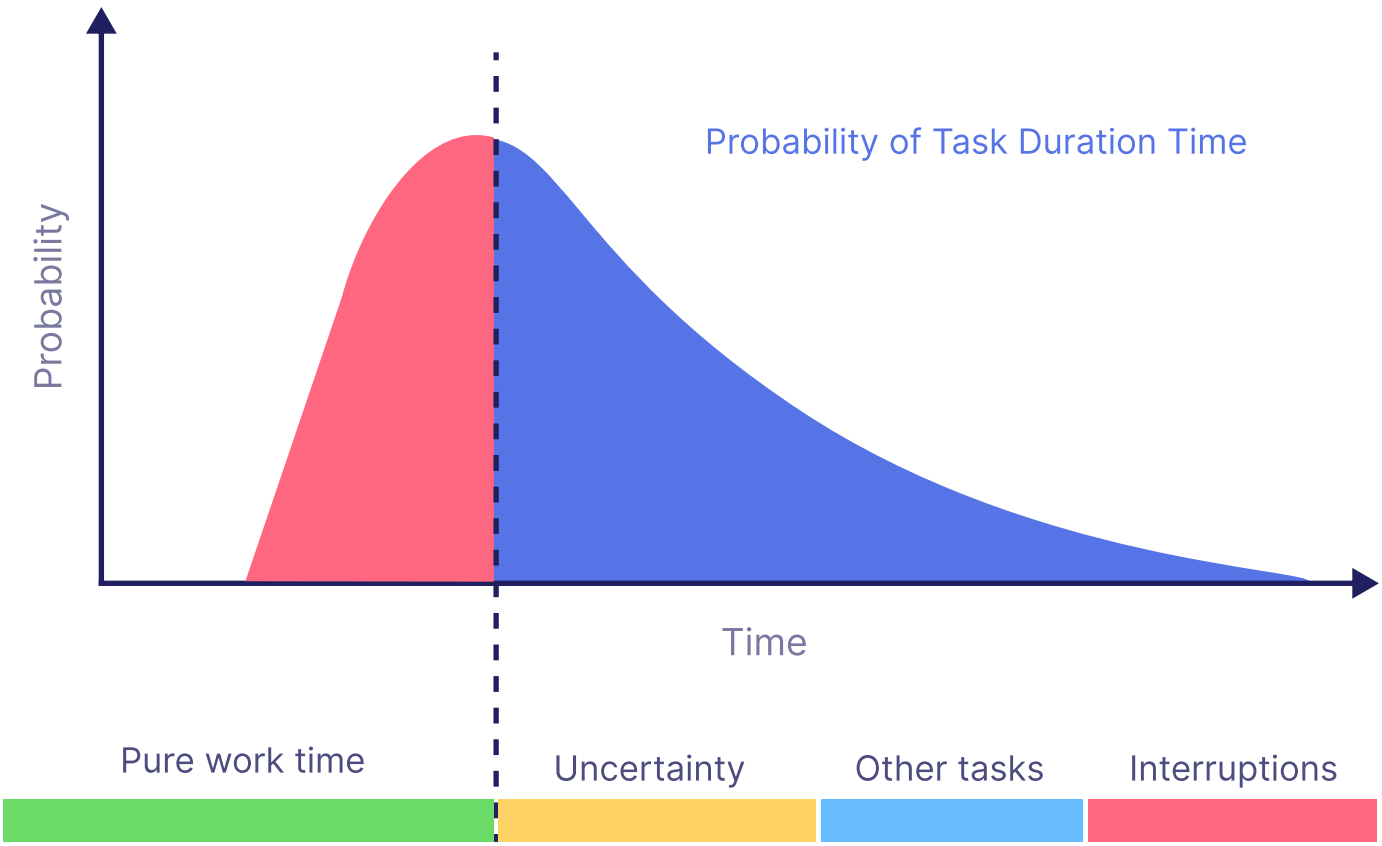
Tips on How to Get Rid of Student Syndrome and Parkinson's Law Effect

- Move buffer from tasks to the end of the project
- Set Clear Priorities and give your team clear instructions
- Ensure cross-functional collaboration.
- Get Rid of Task Milestones
- Allocate the right resource to the task based on skills.
- Take a different approach to task estimations.

4 Estimating Tasks When Planning: What Exactly Do You Estimate?

Setting optimal task durations is a common recommendation in project management. But in reality, giving an accurate estimate of a task duration is difficult because of uncertainty. Too many aspects must be taken into account when setting up a task duration to make it more accurate, and you can never predict any of them.

You can put some safety in a task duration and give it about 80-90% probability, but it will significantly prolong the execution of the task. Moreover, **the more probability you put into a task duration the more vulnerable to Parkinson's Law and student syndrome it becomes** as the time period for task execution becomes longer due to uncertainties, interruptions, and things like that, as shown in the picture below.



So, what's the solution?

Estimate the amount of work that should be done to complete the task, not the time it will take because you can never foresee everything that has an impact on this process.

Besides, it's easier to define the amount of work the task takes than the number of hours it will take, isn't it? The amount of work and effort an employee puts into task completion are more accurate and important values than the probable duration.

> **Time estimates are probabilistic. The mistake we make is we treat them as deterministic.**
>
> Dr E.M. Goldratt

5 Resources as an Uncertainty Factor: How to Get Prepared for Murphy's Strike?

Any kind of resources can bring sudden changes to the project, e.g. equipment can break down, a team member can fall ill, a budget can be disrupted because of the currency rate, etc. These factors can result in project delays or overbudgets.

Keeping in mind that anything can go wrong (Murphy's law), be ready to address potential challenges as a human mind can't foresee all circumstances and predict project failure. Some of the rules that are effective to eliminate student syndrome and Parkinson's law effect also work for uncertainty management together with some other tips:

Don't waste your time on schedules.
Set up clear priorities instead.

Scheduling without priorities won't bring any success as any plan is prone to uncertainties. And in case something goes wrong, just remake prioritization instead of full project rescheduling.

Make realistic and smart work estimates.

You already know what's worth your attention. Focus not on the task duration but efforts if you want to save your project time.

Forget about task due dates.

Deliver a project as soon as possible.
'It is not important to finish each task on time. It is essential to finish each project on time', Dr Goldratt.

Protect your project due dates by adding some buffers to the end of the project.

Be guided by the rule: leave your project in better shape for your colleagues, which means don't consume the project buffer but save it for emergencies.

Manage your resources properly enabling cross-functional opportunities.

In case of some constraints and lack of resources, you can assign an employee from another department to an urgent task.

Control your workflow by considering your team members' progress.

Make sure your people aren't underloaded or overloaded.
The capacity and availability should be balanced.

6 Difficulties of Prioritization and Resource Allocation in a Multi-Project Environment

As has been mentioned above, multi-project environments are those where several projects are running in parallel and sharing the pool of resources. In such an environment, the complexity of prioritization and resource allocation are caused by a number of factors. Let's consider them in detail:

Project dependencies

They can be of the following types:

- Financial dependencies
- Market/interest dependency
- Learning/experience dependency
- Outcome dependency
- Resource dependency

Extra-large amount of data

Manual prioritization becomes a real problem when it comes to multi-project environments because of the huge amount of data to be processed and a lot of factors to be taken into account.

7 Resource Management Software Solution: Redundancy or a Must?

Resource management tools are usually part of project management software solutions. Multi-project management tools are a relatively new kind of software in the modern market. But as businesses are getting bigger and start working with more and more companies, the number of projects is growing, too, while the number of resources often remains the same.

Keeping track of all related issues such as **budgets, project plans, various types of resources, milestones, stakeholders, and clients** becomes a real challenge.

Therefore, a person who is responsible for the whole bunch of these issues from a single place needs some assistance in data gathering and analysis. A classic project management solution (designed for managing 1 project at a time) in this case is just dysfunctional as a multi-project environment is much more complex. Let's dwell upon the problems they can resolve.

Use cases of a multi-project management tool

Problem 1:

Interdependency of projects with a shared resource pool results in resource allocation conflicts, overload, and missed milestones.

Solution:

Automatic task prioritization and resource allocation based on real-time data. The important thing here is that with an eye on the huge volume of data, only the solutions with machine learning facilities are capable of analysing it and providing reliable outcomes.

Problem 2:

No access to real-time data results in project failure.

Solution:

Features displaying project flow with all related data. A multi-project management tool serves as a system that keeps all project-related information in one place, so you don't have to waste your time looking for necessary data or apply several instruments to stay up-to-date with the project flow.

Use cases of a multi-project management tool

Problem 3:

Lack of proper risk and uncertainty management makes you helpless.

Solution:

Instruments that warn you about threats and tools to predict undesirable events. You can't predict the unpredictable, but you can be ready to face challenges and address them. Multi-project management software solutions are equipped with a number of instruments for fast identification of risks, and if something is threatening the wellbeing of a project, the system will let you know out of hand.

Problem 4:

Lack of information about team progress results either in overload or constant underload and poor output.

Solution:

Instruments for tracking and analyzing previous, current, and future load and performance. Information about past, present, and future is crucial for analyzing mistakes from the experience, if any, examining the real state of things to foresee any workload problems. An MPM solution should have functionalities to record the progress data over time, demonstrate the current information, and be able to make predictions based on the analysis of available facts.

Summing Up

We've compiled this guide based on the ideas of researchers with 20-year experience in project management, so we hope that it was useful for you and that with all these tips and recommendations in hand, you'll reach your business goals faster and easier.

Ready to digitize your project management? Book a Live Demo