



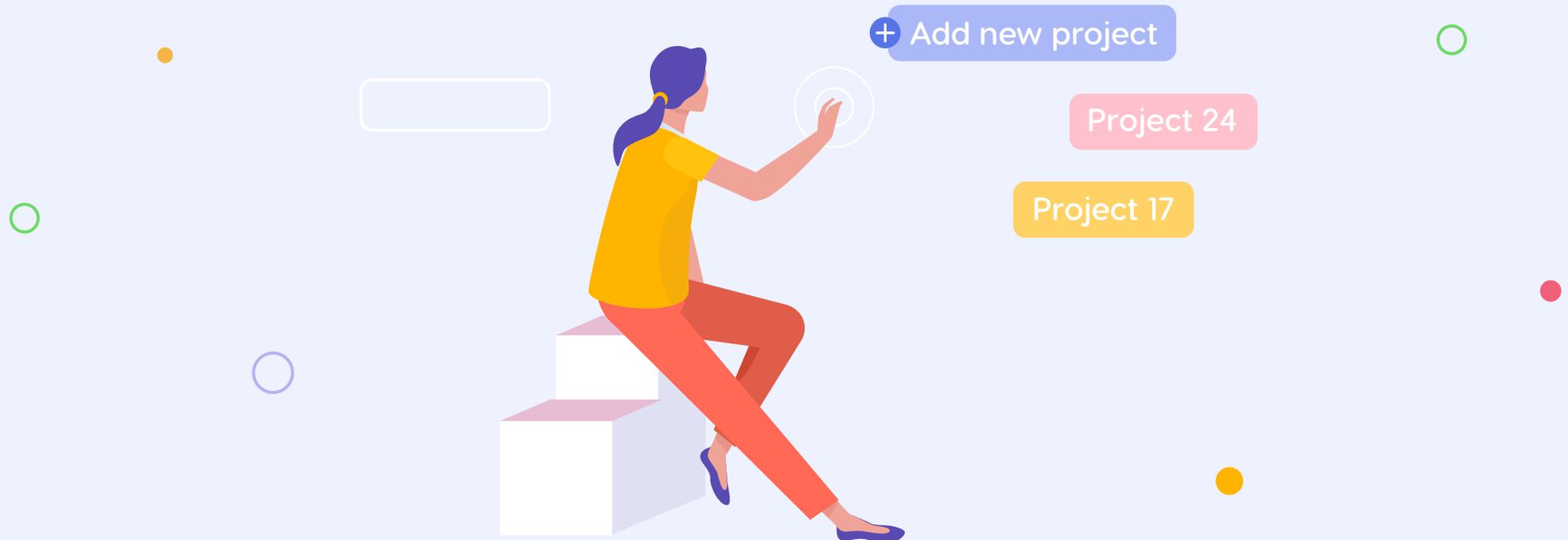
# How to Predict Your Groups' Output: AI Capabilities



epicflow.com

When you add another project to the pipeline, you can't be sure that your resources will cope with the extra amount of work. This is why you need to predict the demand and the output that your team theoretically will be able to produce with regard to the existing uncertainty.

We've created this mini-guide to let you know how AI-based output forecasting differs from manual predictions and how it can ensure smooth flow of your projects and their successful delivery.



## Manual Output Estimation: Can You Predict Anything?

You can add estimates and then assess if the resource group can fulfill the demand. But the accuracy of these estimates will be too low, simply because you can't know whether everything will be executed according to the plan or some unexpected things will arise. This may include

Task and time estimation inaccuracy;

Wrong buffer management;

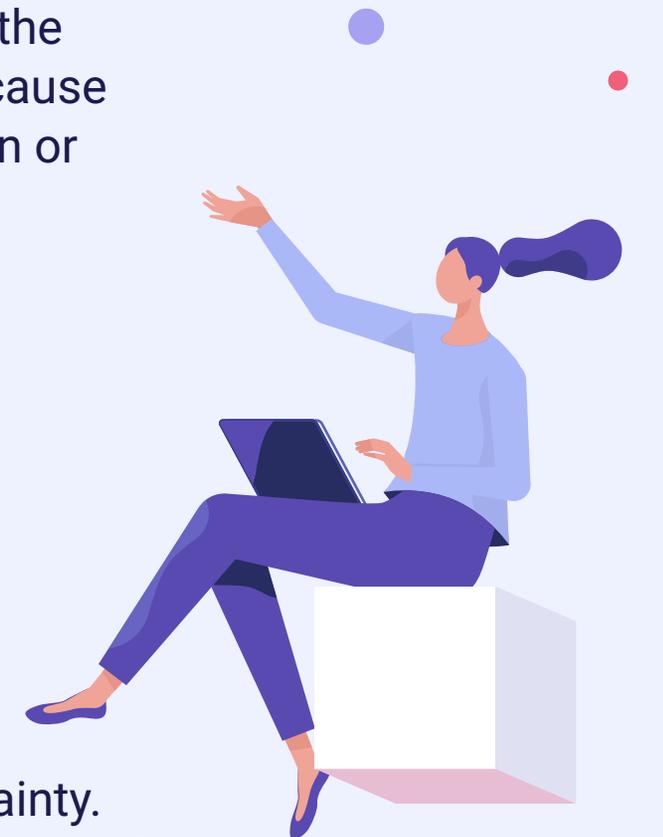
Mistakes with further necessity of rework;

Critical employee's illness;

Any other external event that can hamper the workflow.

We think of the average output a group can create with regard to uncertainty. But under conditions of uncertainty, it's difficult to speak about the accuracy of our predictions. And the absence of accurate forecasting may result in prolonged task durations, bottlenecks, and project delays. Let alone a multi-project environment with resource dependencies and enormous amounts of data that are essential for making such predictions.

*So, what's the decision?*



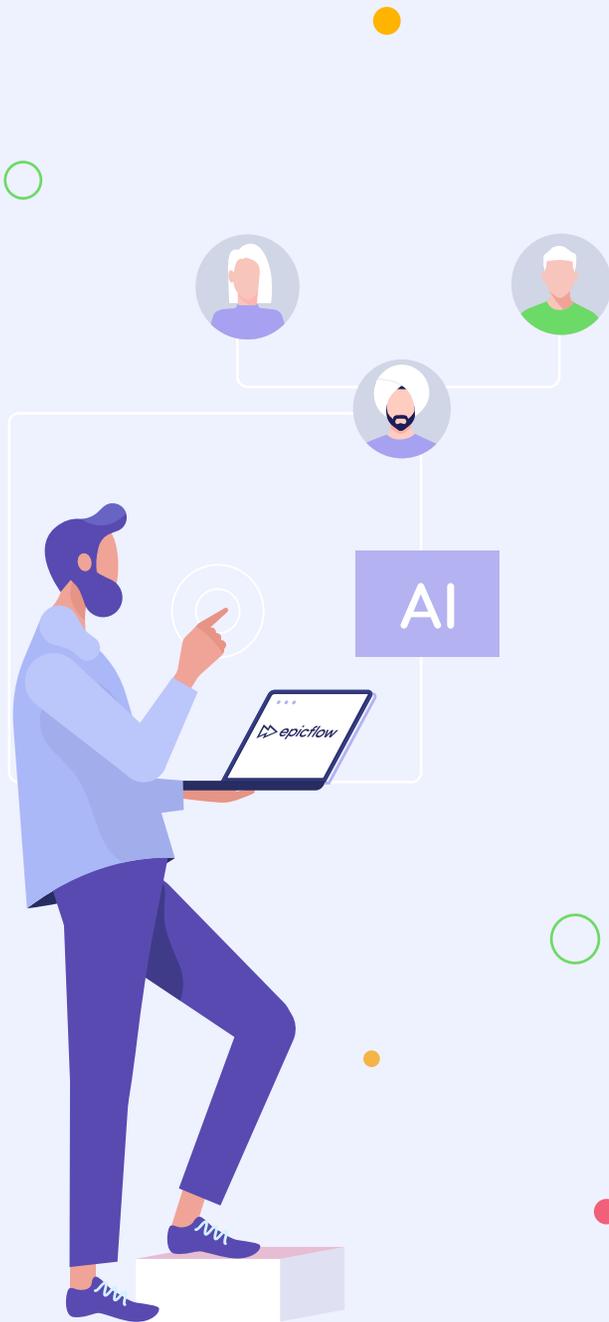
## Artificial Intelligence in Output Estimation: Predictive Analytics in Action

AI provides accurate predictions regarding the output your team is most likely to produce, which is impossible to do manually. This forecasting is based on the analysis of all project-related data:

-  **historical information** about the capacity, load, and output of the team,
-  **real-time data** including the scope of work, capacity, and all existing constraints,
-  information about the **events in the future**: e.g., adding an extra project to the pipeline, hiring a new resource, etc.

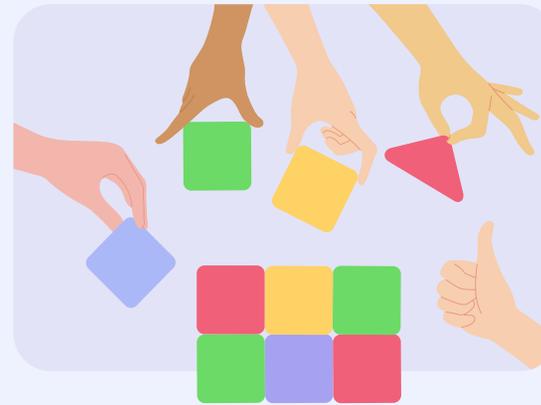
**The difference between manual prediction and AI-driven forecasting is the scope of information on which this analysis is based and as a result - its accuracy.**

-  AI processes huge amounts of data, divides it into datasets, and provides insights to a user in a clear format: graphs, tables, or boards. In other words, an AI-driven tool transforms data into information, which you can further use in your management strategy.

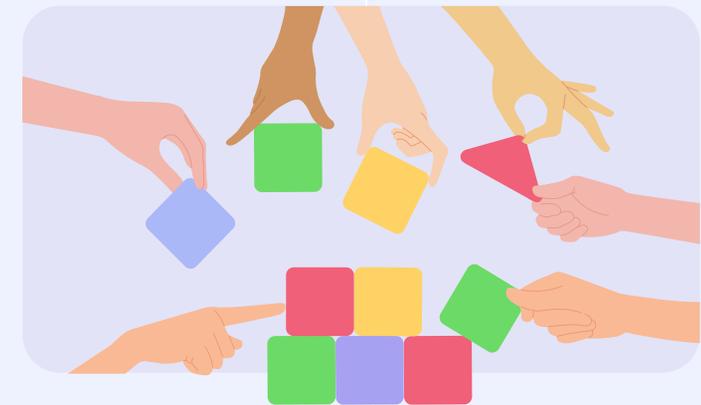


Let's say we have a group of **5 people** and then add **2 more employees**. We expect their output to grow at once because now we have more people capable of doing more work, but in reality, **the output will fall** because some time and effort are required to train the new people. **Then it will suddenly grow up**, but it is impossible to predict the date manually.

This is why **you need a resource management solution that supports predictive analytics**. It will show you the day your team's output will increase, so that you can make corresponding resource management decisions and be sure your project environment is safe.



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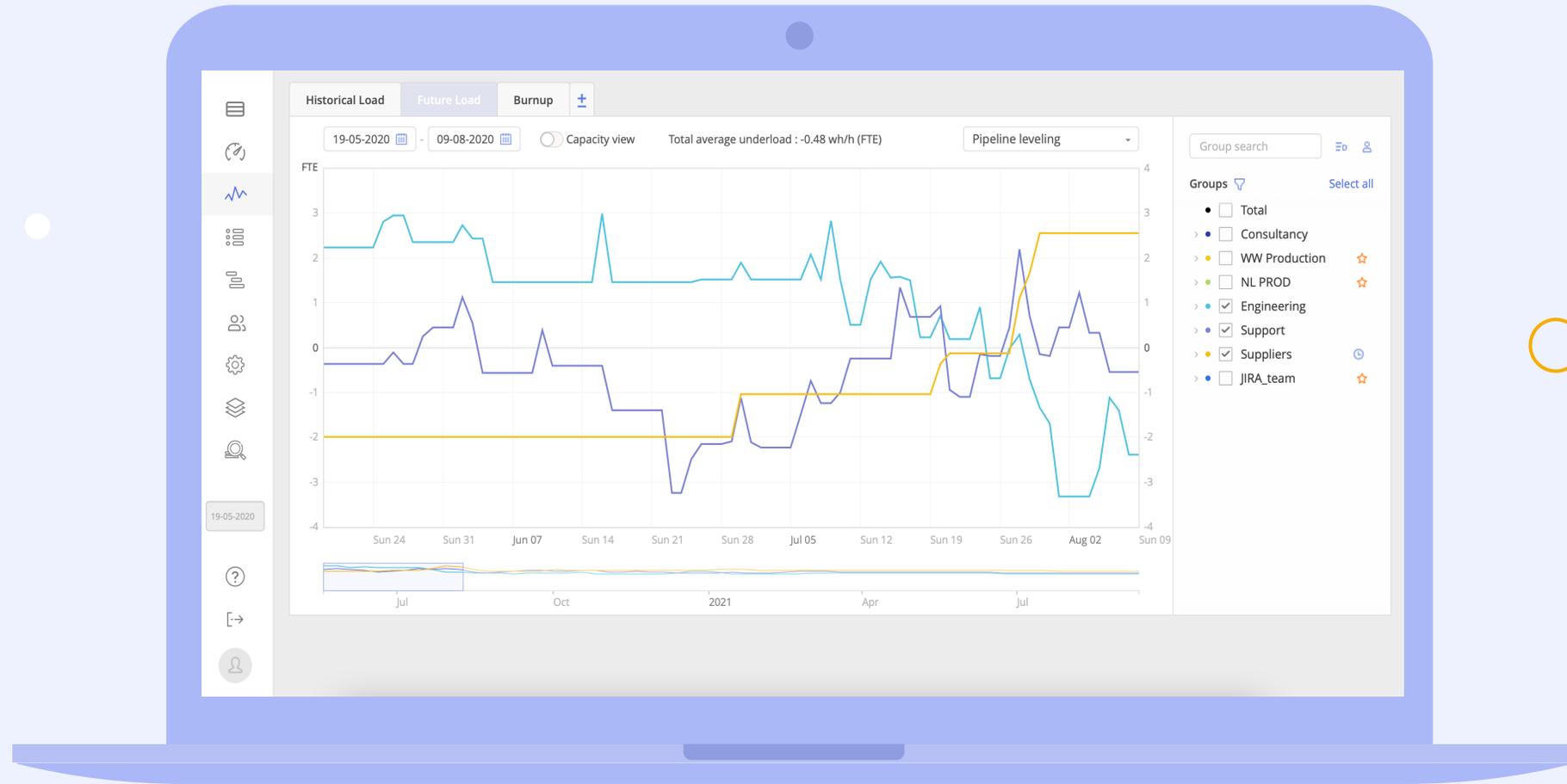


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To understand how it works, let's take a look at the output prediction graph built by **Epicflow**, an **AI-driven multi-project resource management solution**.

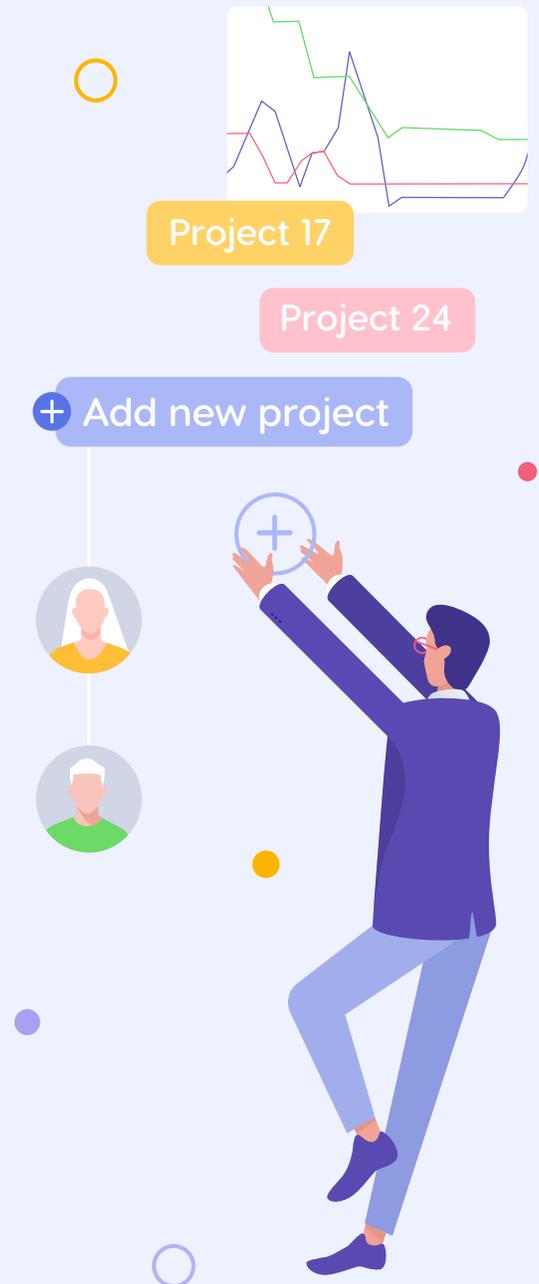


**Future Load Graph in Epicflow**

**A zero level is the group's capacity.** If the line is under the zero level, the resource group is underloaded, and when it's above the zero level, it's overloaded. So, in such a way, we can make predictions about the output produced by the team. The ideal scenario is when the load line is as close to zero as possible, because in this case your resources will produce the output as is expected from them.

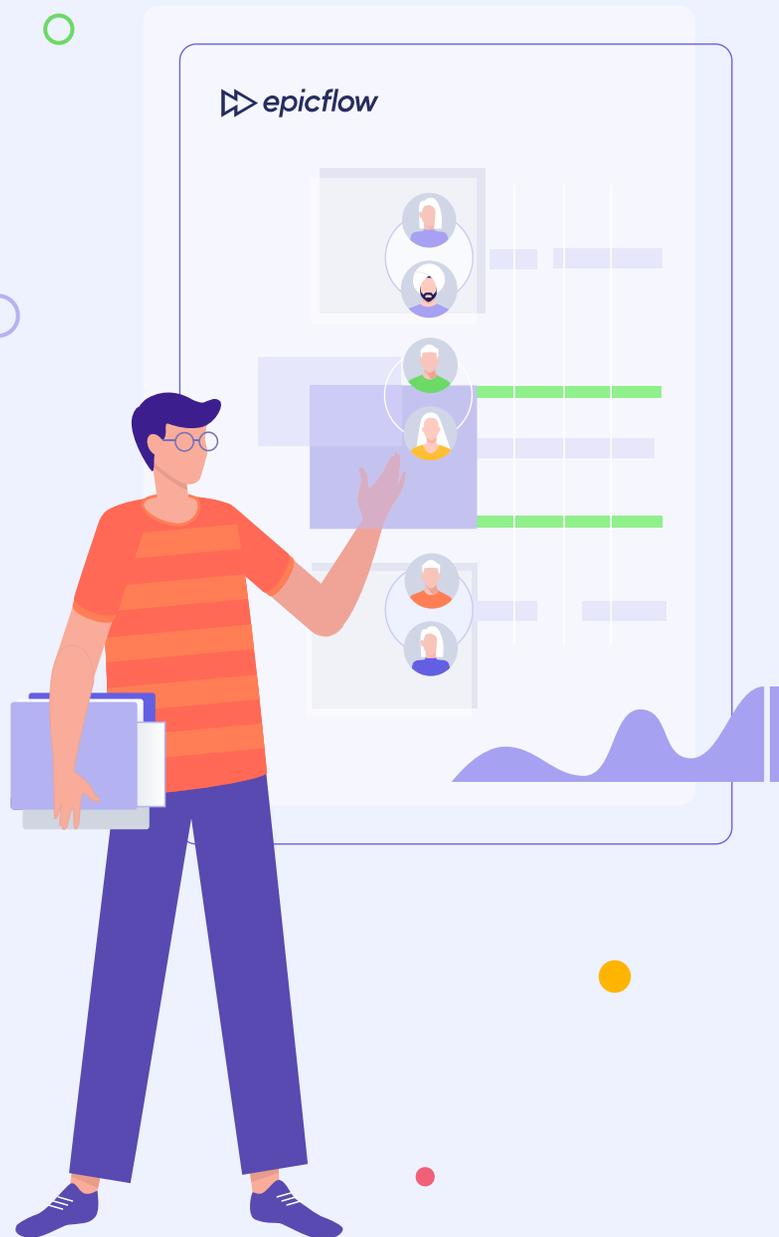
If we add another project to the pipeline and then see on the Future Load graph that the load line is high above the zero level, your group will be heavily overloaded by the new scope of work. **But this doesn't mean you cannot initiate a new project. The system just warns you about a bottleneck and gives you time and room for a resource management decision to address the load challenge.**

Besides, artificial intelligence that is used in RM solution's functionality makes it possible to see how different resource management decisions affect group workload in the future. In other words, you can test different project changes and then choose the one that brings the best results.



## Testing Resource Management Decisions with AI

To let project and resource managers test how different resource management actions will affect their resources' load and make sure no bottlenecks will occur, some AI-driven resource management solutions have a simulation mode. Upon entering this mode, the changes made to the project environment won't be applied in reality. They will just show the effect of transformations on the further workload of your resources up to the date you choose in the calendar. Once you skip this mode, your environment gets back to the state before any changes were made.



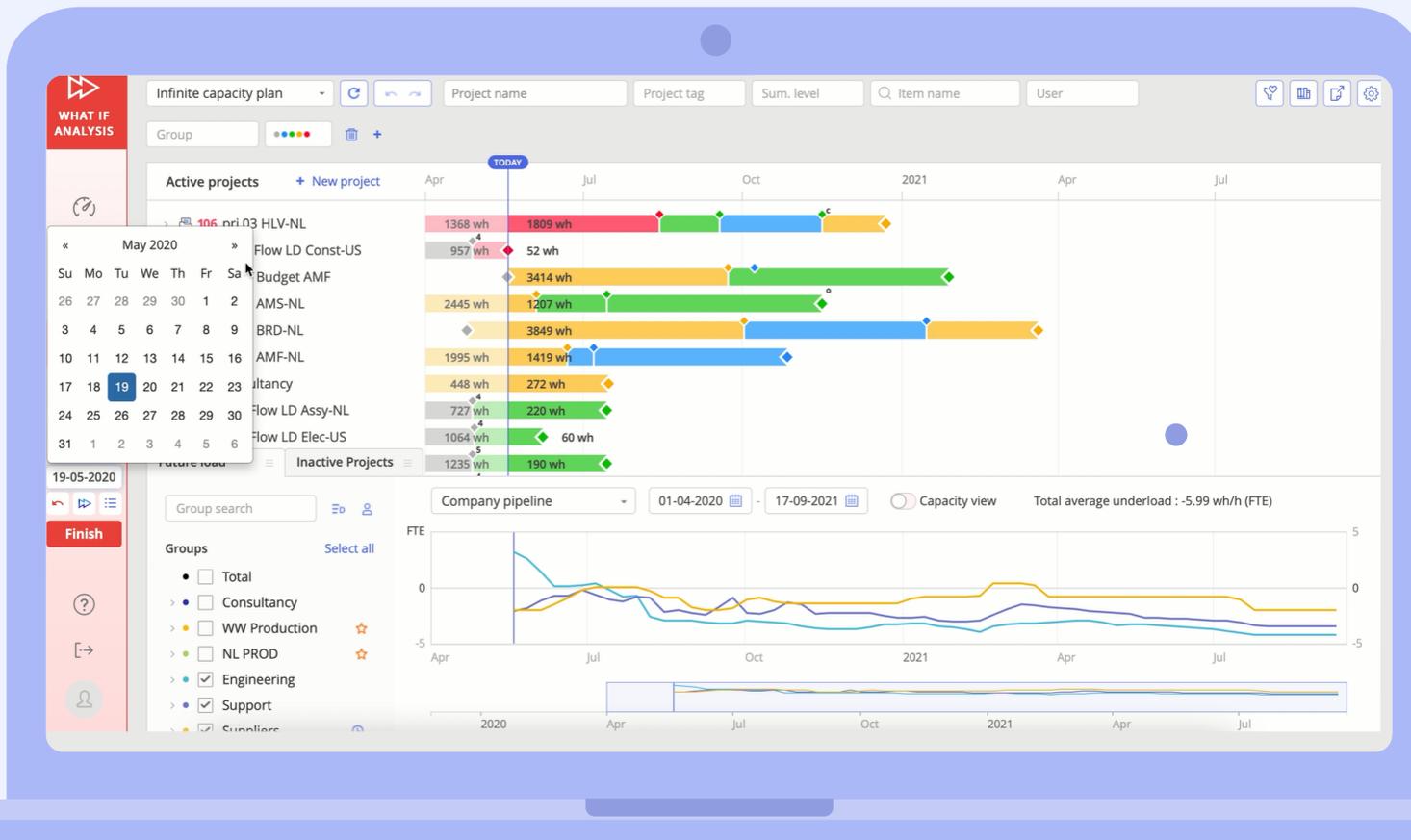
**4** Finished projects

Cost



Profit  
**43,280\$**

# Here's how the Epicflow's interface looks like in the What-if Analysis mode.



## What-if Simulation Mode in Epicflow

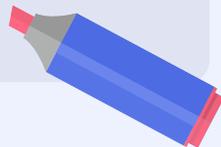
## Requirements and Rules of Working with AI: Garbage in, Garbage out

If you want an AI-driven solution to bring the desired results, always remember the **“garbage in, garbage out” rule**. This means that to receive the correct and reliable outcomes, you should input correct and clear data.

There’s a list of things that negatively affect the quality of insights produced by predictive analytics (or even make the analysis impossible):

### ! Mistakes at the symbolic level:

- typos,
- capitalized letters,
- different date fields,
- blank fields,
- figures mixed with letters,
- improper signs,
- incorrect spelling.



! **Document formats**, especially when transferring data from one system to another (e.g., in case of integration).

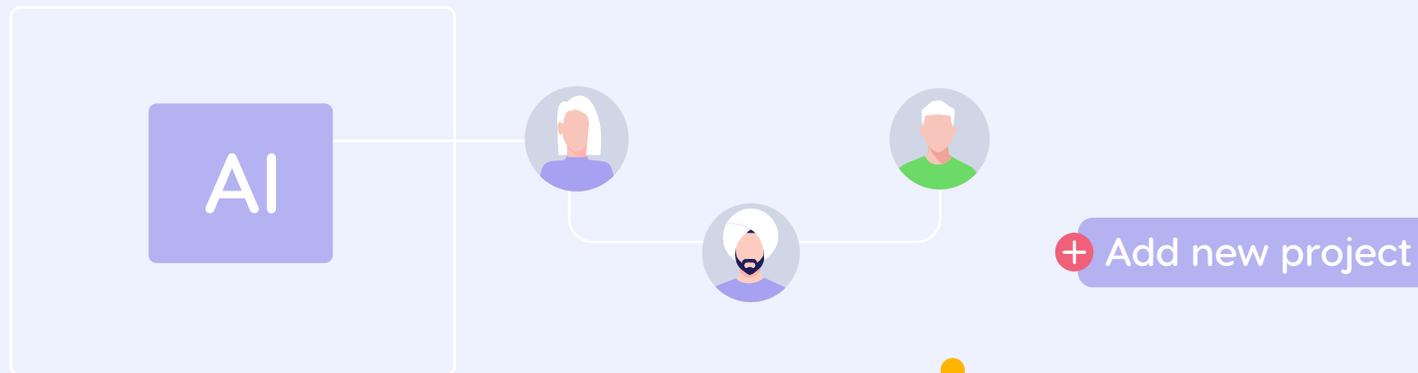
### ! Team level:

- outdated information,
- late updates or their absence,
- wrong task estimates.



## Conclusion

Therefore, AI is an essential element of successful multi-project resource management as it helps not only predict your groups' output but also gives you time and room for improvement: you can test any resource management decisions in a simulated environment and implement the one that will definitely bring brilliant results. All you need is to timely put correct and relevant data into the system.



If you'd like to learn more about artificial intelligence in multi-project management and options for resource load optimization, contact us at

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