PLANTA

Whitepaper

Capacity Planning

Realistic projects.
Better decisions.
Avoid bottlenecks and make optimal use of resources.

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OVERVIEW

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Executive Summary

Implementing projects successfully is becoming increasingly demanding for companies: the number of projects running in parallel is growing, while qualified employees, specialist knowledge and technical resources remain limited.

The result: projects compete for the same capacities. If these interdependencies only become visible during project execution, schedule delays, overloads and time-consuming replanning are often unavoidable.

Capacity planning starts much earlier: it creates transparency about available capacities, reveals resource conflicts at an early stage and provides a sound basis for decisions – not only for individual projects, but for the entire project portfolio.

This whitepaper shows why capacity planning is a key success factor in multi-project management, how typical resource bottlenecks arise and how companies can plan and manage their capacities systematically – and how modern project management software supports this process.

Capacity planning does not start with resource allocation. Even before a project starts, it creates transparency about which projects can realistically be implemented with the available capacities.

CHAPTER 01

Why Capacity Planning Is Indispensable Today

When projects fail not because of the budget – but because of missing capacities

The budget has been approved. The project goals are defined and the schedule is set. Nevertheless, the project start is delayed because key resources are already scheduled in other projects.

This situation is part of everyday life in many companies today: projects no longer compete only for budgets, but above all for qualified employees, specialist knowledge, machines and available time.

As the number of parallel projects grows, so does the complexity of planning – even small changes affect numerous other initiatives. The key is therefore not to start as many projects as possible at the same time, but to implement the right projects at the right time with the capacities that are actually available.

This is exactly where capacity planning comes in: it creates transparency about available capacities, supports well-founded prioritization decisions and uncovers resource conflicts early – before deadlines or project goals are at risk.

Projects are becoming more complex – capacities remain limited

Today, companies manage significantly more projects in parallel than just a few years ago – product developments, digitalization initiatives, IT and organizational projects run simultaneously, combined with rising customer requirements and regulatory demands.

While the number of projects is growing, additional resources are often only available to a limited extent.

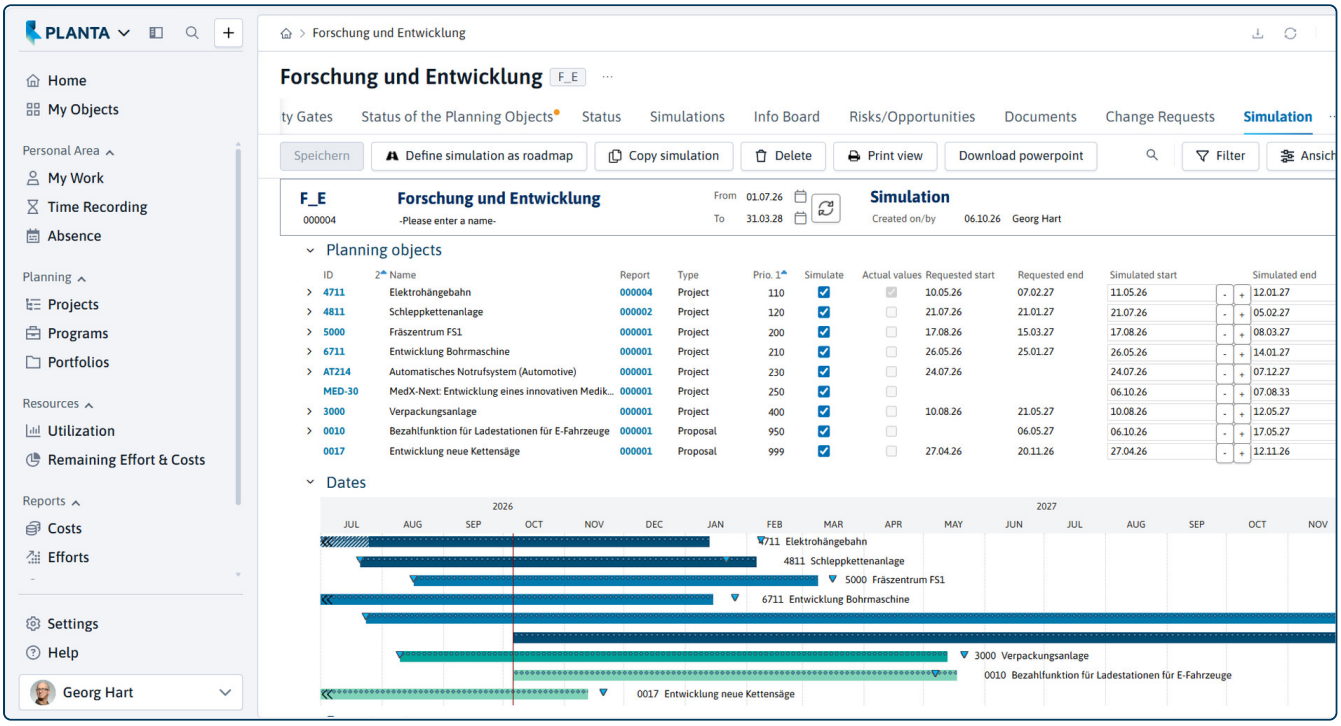
This is particularly evident with key resources: if experienced design engineers, software developers or subject matter experts are scheduled in several projects at the same time, bottlenecks often arise during planning – but initially go unnoticed.

Why traditional project planning is no longer enough

A single project can usually be planned well. It becomes more difficult when several projects access the same resources at the same time.

Capacity planning therefore adds a crucial perspective to traditional project planning: it does not look at individual projects in isolation, but at the entire project portfolio.

Single project	Project portfolio
Focus on dates and tasks of one project	Focus on all ongoing and planned projects
Resources are planned within one project	Resources are considered across projects
Goal is a successful project completion	Goal is the successful implementation of the entire project portfolio



Simulation in portfolio management in PLANTA Project

CHAPTER 02

What Capacity Planning Really Means

Why two well-planned projects can still collide

A project plan has been completed: the work breakdown structure is in place, all tasks are scheduled and the required resources are assigned. On its own, the plan seems consistent.

A few days later, however, it turns out that a second project needs the same specialists in the same period. Both projects have been carefully planned – but together they cannot be implemented as intended.

Such situations do not arise because individual projects were poorly planned, but because the impact on the entire project portfolio was not sufficiently taken into account.

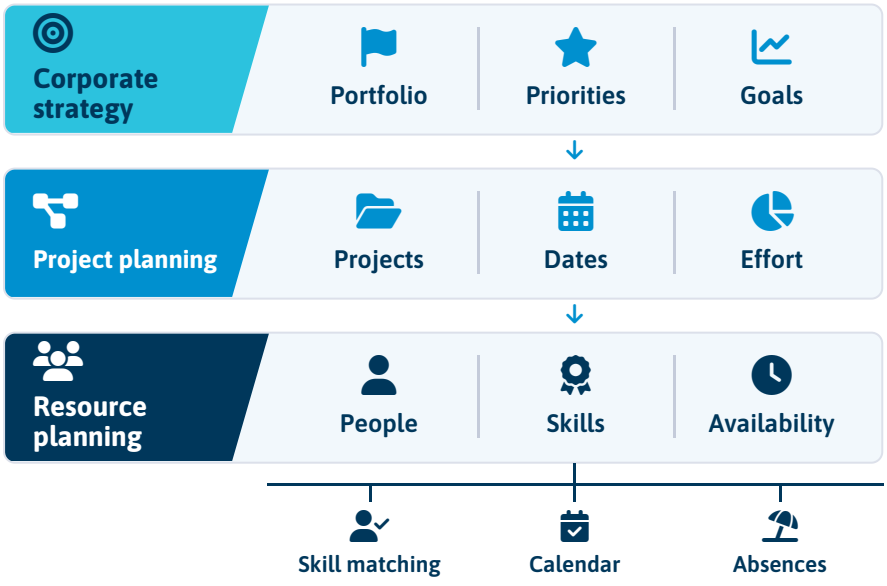
This is exactly the difference between **project planning** and **capacity planning**.

While project planning focuses on the successful execution of a single project, capacity planning looks at all ongoing and planned projects together – with the aim of recognizing early on whether the available capacities are sufficient.

Capacity planning does not look at projects in isolation. It combines corporate goals, the project portfolio and available resources into a common basis for decisions. Only when these levels are aligned can operational resource planning begin.

The three levels of capacity planning

Capacity planning connects strategy, projects and resources – for realistic plans and optimal results.



The Result

Better schedule adherence
Projects are planned and delivered realistically.

Optimal utilization
Resources are used efficiently and as needed.

Fewer bottlenecks
Early detection and targeted countermeasures.

Transparent decisions
Sound data creates clarity and certainty.

Resource management, capacity planning and resource planning

In everyday project work, the terms are often used synonymously, but they describe three different, interlocking levels:

RESOURCE MANAGEMENT

Strategic framework: Developing resources, building skills and securing availability in the long term.

CAPACITY PLANNING

Cross-project planning: assessing utilization, identifying bottlenecks and prioritizing projects.

RESOURCE PLANNING

Operational planning: Assigning resources to tasks, coordinating dates and implementing project plans.

All three levels build on each other: the project planning of a single initiative described at the beginning is essentially already resource planning – just related to one project instead of the entire portfolio.

Capacity planning starts before resource planning

Capacity planning is often equated with actual resource planning. In fact, it starts much earlier – before resources are assigned to individual tasks.

Even before a project is started, it should be checked

- whether the required capacities are available in the planned period,
- what impact the project has on initiatives that are already running,
- which key resources are already fully utilized and
- whether project priorities or start dates can be adjusted.

Only when these questions have been answered does operational planning begin: resources are assigned to the tasks and the project plan is worked out in detail.

Which capacities are planned?

Reliable capacity planning takes different types of resources into account – such as personnel and skill resources, machines or other equipment.

Equally important is the actual working time: recurring tasks (basic load), day-to-day operational work and absences reduce project capacity. Only when these conditions are included does a realistic picture of the available capacities emerge.

Transparency is the foundation – decisions remain a management task

An up-to-date overview of utilization and availability is an essential prerequisite for successful capacity planning – but on its own, it does not resolve any resource conflicts.

What matters is drawing the right conclusions from the available information – for example, postponing projects, adjusting priorities or evaluating alternative scenarios.

Capacity planning provides the necessary basis for these decisions and helps companies implement projects successfully under realistic conditions.

CHAPTER 03

Successful Capacity Planning in Practice

Why resource bottlenecks rarely come as a surprise

Resource bottlenecks rarely arise from a single, unexpected event. Usually, small factors such as new projects, shifting priorities, vacations and operational work add up unnoticed to overbooking. The later these links become visible, the harder it is to take countermeasures.

Professional capacity planning makes bottlenecks visible early on, before deadlines, budgets or project goals are at risk. Resource bottlenecks rarely have a single trigger.

Cause	Typical impact
Too many projects running in parallel	Key resources are scheduled multiple times.
Unclear project priorities	Several projects compete for the same resources.
High utilization from operational work	Fewer capacities are available for project work.
Short-term changes	Schedule and resource planning frequently needs to be adjusted.
Planned or unplanned absences	Available capacities are overestimated.
Specialist knowledge of individuals	A few key resources become a bottleneck.

This often triggers a chain reaction: if one project is delayed, this affects other projects – the more closely projects are linked, the greater the impact of individual changes. Early warning signs should therefore be recognized in good time.

Early warning signs

- Project dates are regularly postponed.
- Key resources are permanently working at their limit.
- Project managers compete for the same employees.
- Plans frequently need to be adjusted.
- Overtime is steadily increasing.

This is exactly where a structured capacity planning process comes in. It creates the basis for prioritizing projects realistically, scheduling capacities in a targeted manner and making decisions on a reliable data basis.

CHAPTER 04

The Path to Reliable Capacity Planning

How a project idea becomes a realistically feasible project

Capacity planning already begins when it is decided which initiatives should be started under the existing conditions. Not every approved project can or should start immediately.

Structured capacity planning connects strategic decisions with operational project planning and creates transparency across the entire project portfolio.

The capacity planning process

01	**Project idea**	Clarify benefits and goals
02	**Evaluation & prioritization**	Evaluate importance, risks and dependencies
03	**Capacity planning**	Check availability and identify bottlenecks
04	**Project approval**	Make the start decision
05	**Resource planning**	Assign resources to tasks
06	**Project control**	Monitor utilization and update planning

Project idea

It all starts with the idea for a new project – with a clear benefit and a defined goal as the basis for further planning.

Evaluation & prioritization

Capacity planning begins with a management decision: before a project is started, its importance, risks and dependencies on other projects are evaluated.

Capacity planning

It is checked whether the required resources are actually available in the planned period – critical bottlenecks, especially for key resources, are identified at an early stage.

Project approval

Only when benefits and capacities have been clarified does management decide on the project start – a deliberate postponement can help avoid bottlenecks.

Resource planning

After approval, the resources are assigned to the individual tasks in the project plan.

Project control

During implementation, utilization is continuously monitored and the planning is updated as needed.

Evaluating options for action

An identified resource bottleneck does not necessarily mean that a project has to be postponed. Depending on the situation, different options are available, based on the strategic importance of the project and the impact on other initiatives.

Situation	Possible measure
Key resources are not available at short notice.	**Postpone the project start.**
Several projects compete for the same resources.	**Review and redefine priorities.**
Long-term overload is emerging.	**Plan additional capacities or redistribute tasks.**
A deadline is fixed and binding.	**Review the project scope and adjust it if necessary.**
Critical resources drop out at short notice.	**Update planning and evaluate alternative scenarios.**

Capacity planning provides the basis for this decision – it not only shows that a bottleneck exists, but also helps to derive suitable measures at an early stage.

CHAPTER 05

Success Factors of Modern Capacity Planning

Clear priorities
Focus resources on the most important initiatives.

Cross-project planning
Look at all ongoing and planned projects together.

Realistic planning
Consider basic load, absences and qualifications.

Stay up to date
Review and adjust planning regularly.

Common data basis
Make decisions transparently and consistently.

Why transparency alone is not enough

A transparent overview of utilization and available capacities is the foundation of any capacity planning – but on its own it does not lead to better decisions.

Only when transparency is combined with clear priorities, cross-project planning, realistic capacities, regular updates and traceable decisions does a reliable management tool for the entire portfolio emerge – five success factors that complement each other and lead to greater project success.

Companies that take these five success factors into account identify bottlenecks earlier, assess changes better and make decisions based on transparent information – before resource conflicts affect the course of the project.

Your benefits in everyday project work

Early bottleneck detection
Critical utilization levels become visible before deadlines are at risk.

Greater planning reliability
Priorities, capacities and deadlines can be aligned with each other.

Well-founded decisions
Management and PMO evaluate new projects based on up-to-date data.

Efficient use of resources
Available capacities are deployed across projects.

CHAPTER 06

How PLANTA Project Supports Capacity Planning

Capacity planning with PLANTA

All relevant information. Different views. Better decisions.

Resources & skills | Projects & portfolio | Availability | Costs & times | Scenarios

Different chart types for your project control



Your benefits

- Early bottleneck detection
- Greater planning reliability
- Well-founded decisions
- Efficient use of your resources

Integrated. Up to date. Reliable.

From transparency to well-founded decisions

In principle, capacity planning can also be carried out with spreadsheets or separate resource lists. However, as the number of parallel projects grows, so does the effort required to keep information up to date and reliably identify interdependencies.

Project managers need an overview of their projects, the PMO needs the utilization across the entire portfolio, line managers need the availability of their employees and management needs a sound basis for prioritization and investment decisions.

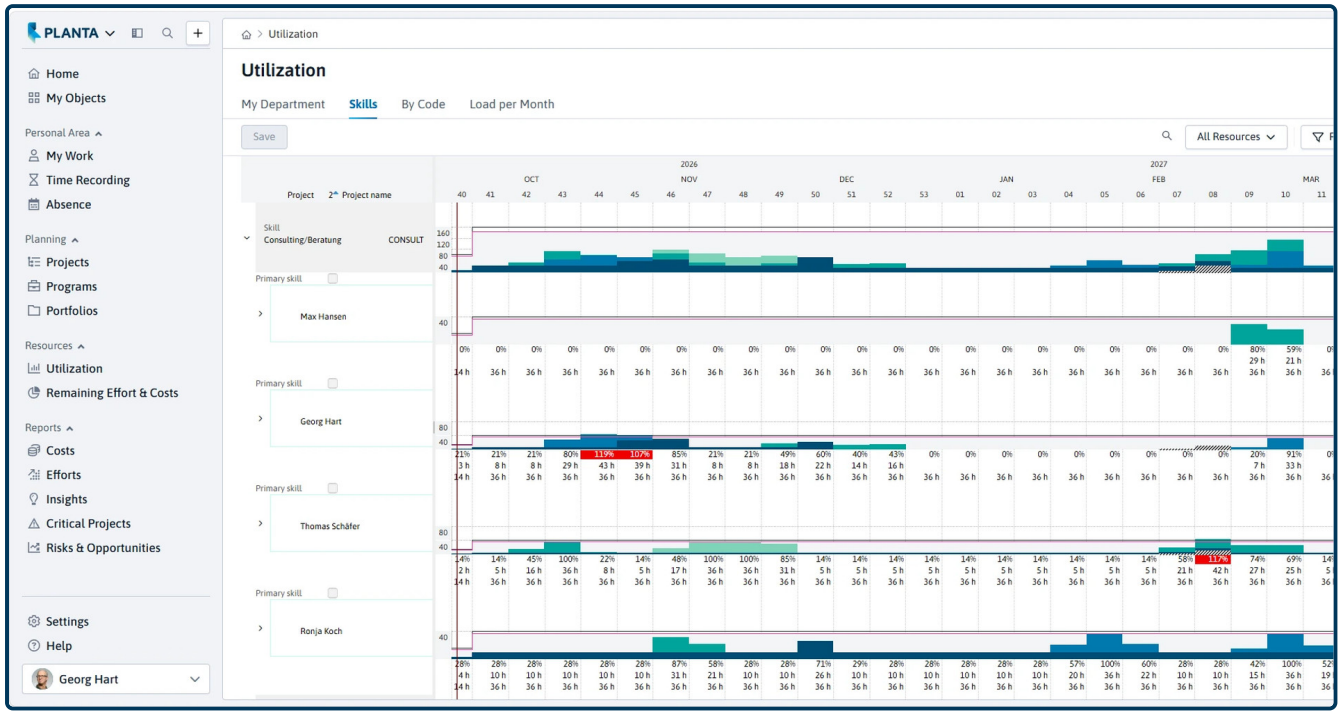
To ensure that everyone involved works on the same information basis, PLANTA Project helps companies plan and analyze projects, resources and capacities centrally and assess the impact of changes at an early stage.

Capacity planning along the entire project lifecycle

Even in early planning phases, PLANTA Project creates transparency about available capacities and supports cross-project planning; during project execution, it provides up-to-date utilization information and shows the impact of changes – from the project idea to ongoing project control.

Planning resources transparently

PLANTA Project enables cross-project planning of resources and capacities. Utilization and availability are displayed centrally and are available to project managers, the PMO and management on a common data basis – so resource conflicts can be identified and the impact of planned changes assessed early, before adjustments are made.



Utilization by skills in the multi-project board of PLANTA Project

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Webinars

Project Management Knowledge for Everyone

To the webinars

Information for different roles

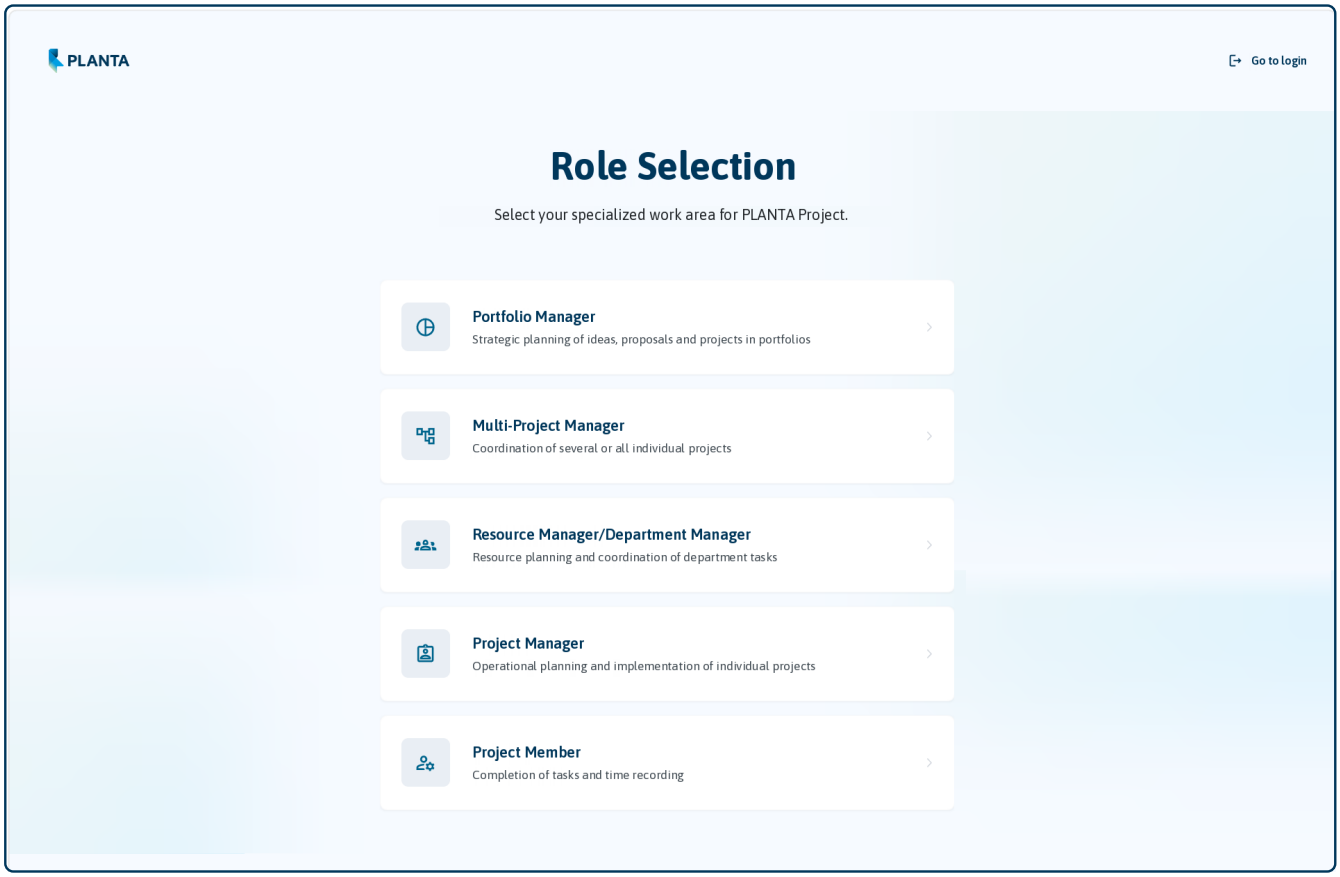
Capacity planning affects different areas of responsibility with different questions: project managers want to know whether the required resources are available, the PMO where cross-project bottlenecks arise, line managers how the utilization of their area is developing, and management which projects can realistically be implemented with the available capacities.

A common data basis ensures that everyone involved builds on the same information and can make traceable decisions.

Practical example

An industrial company manages more than 70 projects in parallel. Before introducing a central solution, resources were managed in various spreadsheets and coordinated mostly manually – conflicts were often only noticed when project deadlines were already at risk.

Today, the company plans projects, resources and capacities centrally: cross-project analyses create transparency about utilization, so that the PMO identifies bottlenecks early and management can make well-founded decisions.



Start screen with all work areas in PLANTA Project

07 CHAPTER

Conclusion: Capacity Planning as a Success Factor in Multi-Project Management

Successful project control starts with realistic capacities

Today, companies face the challenge of implementing more and more projects in parallel – often with the same resources – while the demands on speed, quality and flexibility are increasing. Under these conditions, it is no longer enough to plan projects in isolation.

Capacity planning provides a cross-project view of available resources and forms the basis for well-founded decisions. It helps companies prioritize projects realistically, deploy resources in a targeted manner and identify bottlenecks early.

Its greatest benefit lies not only in better planning, but in the transparency it creates: the impact of new projects can be assessed early, priorities can be set comprehensibly and resources can be deployed where they make the greatest contribution to the company's success.

Companies that plan and manage their capacities systematically thus create an essential prerequisite for the successful implementation of their entire project portfolio.

Checklist

Is your capacity planning future-proof?

- [ ] New projects are only started after a capacity check.
- [ ] Project priorities are clearly defined and transparent.
- [ ] Capacities are considered across projects.
- [ ] Basic load, operational work and absences are included in the planning.
- [ ] Critical resources are identified early.
- [ ] Capacity planning is updated regularly.
- [ ] Decisions are based on a common and up-to-date data basis.

The more statements you can answer with “yes”, the more reliable your capacity planning is.

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