

How adopting a modern execution system improves project performance

CONTROL, CONSTRAINT AND EXECUTION SYSTEMS

Software systems commonly used for AWP projects can be grouped into three broad categories: control, constraint, and execution.

Control systems are the first project systems to be implemented. They focus on recording what happened in the real world, comparing it to some kind of plan, and identifying deviations from the plan so that project participants can decide on corrective action as needed. Examples of control systems are scheduling systems like P6, earned value versus planned value tracking systems, and financial and cost reporting systems.

Control systems give reliable data because they are all about things that have already happened.

That is, they identify problems such as schedule slips, budget overruns, and other such issues—but only once those problems have occurred. A better approach is to identify problems *before* they happen, so they can be avoided.



While Controls will provide reliable data for past events, a better approach is to identify problems before they happen.

When good execution systems, like Garner, are used properly and communicate with each other correctly, control and constraint systems become little more than reporting tools.

Constraint systems are intended to track problems and obstacles that keep work from being executed. A given IWP (installation work package) can't be issued until numerous things are done, including all materials readied, scaffolding erected, and plans and drawings completed and issued. A constraint system can track each of the incomplete requirements preventing the IWP from being issued and assign a person to clear each constraint. A similar approach can be taken for shipments of materials, wherein the inspection, packaging, documentation, and so on are identified as constraints which certain people are then responsible for clearing.

Constraint-based approaches have an advantage over control systems in that they track issues that have not yet caused any real-world problems. Their disadvantage is that they perceive everything as incipient problems to be fixed. If the work being tracked by constraints is being performed properly and in the correct order, most of the constraints will never actually become problems, and so need not be handled in this way.

The best approach to constraint problems is to manage the different kinds of constraints individually, in a way appropriate to the domain, and use constraint reporting only as a backstop.

Execution systems are systems where the actual work can be done. They include supply chain systems like Garner or materials management systems like SPM. In an execution system, users perform the workflows and communications appropriate to their activities. Good execution systems are structured in such a way that users can perform their work naturally and efficiently. Ideally, they are accessible to and gather information from all the participants in the workflow (whatever their organization), to minimize communication problems. Execution systems should also be aware of the work packaging plan and schedule, so that they can prioritize work for users and draw attention to problems or issues in such a way as to proactively solve these problems before constraints are generated.

When good execution systems are used properly, and are communicating with each other correctly, control and constraint systems become little more than reporting tools. A good execution system environment ensures that the output of control or constraint systems is never surprising, and that any problems indicated are already being addressed.

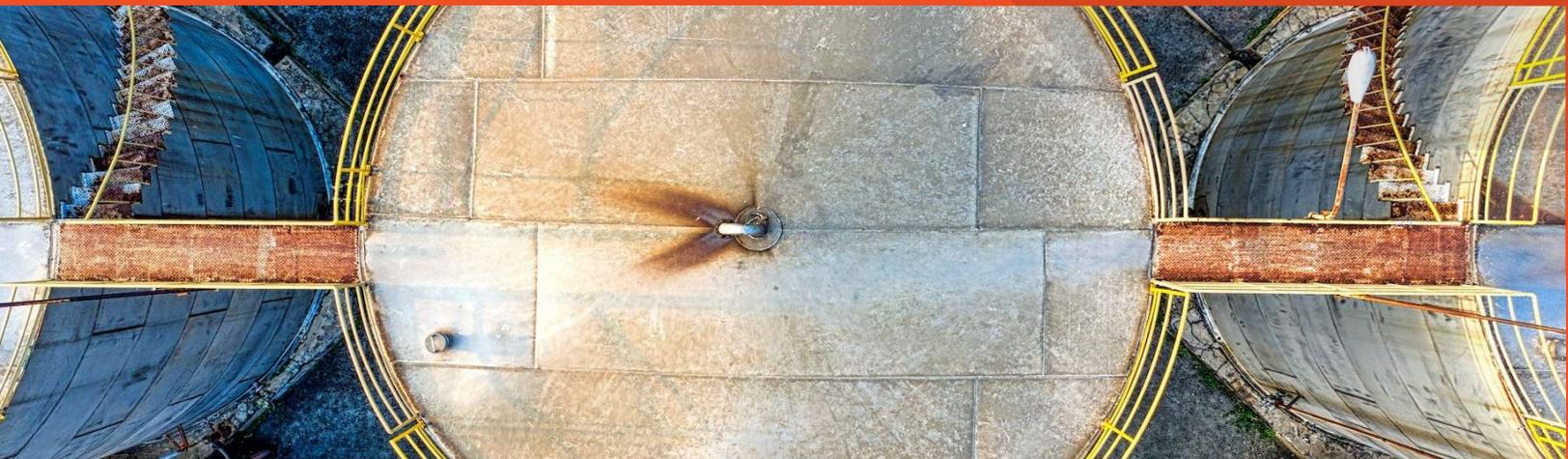
EXECUTION SYSTEMS CAN DO MORE

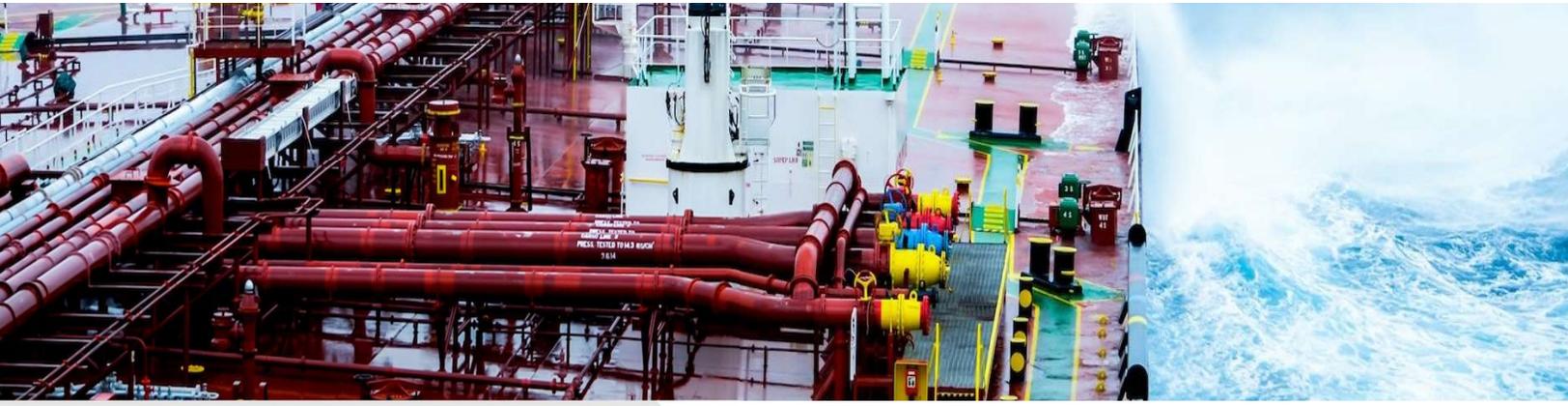
The drawback of many legacy execution systems is that they were designed from a control system mindset. They focus on recording transactions or events that have already happened, rather than helping users do their actual work and generating the data of “what happened” as a byproduct. The work of non-field users on a project consists largely of updating data, making decisions, and communicating. But updating data shouldn’t even exist as a work category—good execution systems should obtain the data from its source and transmit it wherever needed, without user intervention.

Good execution systems support decision-making by giving users the information they need to make the best decisions possible, providing it in an easy, convenient format and not swamping them with irrelevant information. Communications might include formal communications like purchase order issuing and shipment releasing, but also fewer formal communications like requests for factual or forecasted information, replies, clarifications, and status updates.

Many legacy execution systems don’t handle these types of communications because, given their control system approach, they focus on recording facts and events, rather than on helping users do their work. So instead of being done within the execution system, that portion of the users’ work is done by email or phone. This both impairs the productivity of users and loses key data that can be helpful in process tracking or improvement.

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MODERN EXECUTION SYSTEMS IMPROVE DECISION QUALITY

So where does that leave us? Good execution systems need to address the drawbacks of control, constraint and legacy execution systems. A modern execution system, like the Garner platform, understands that all the work should happen within the system rather than outside of it. This ensures comprehensive data is captured automatically and used to improve the quality of decisions throughout the project. And isn't that the most rational way to do the work?

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