

How the Garner platform makes AWP work by connecting the supply chain

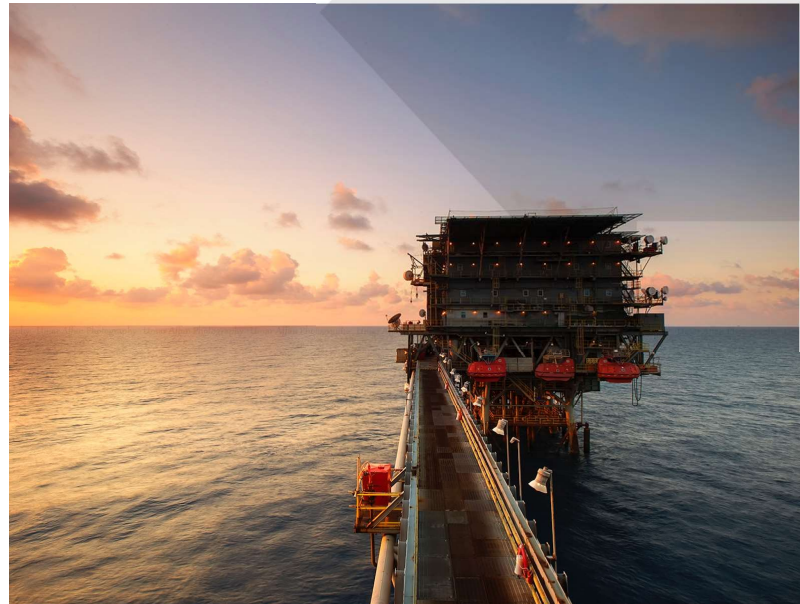
WHAT IS AWP

Advanced Work Packaging (AWP) is a set of practices for planning and executing major construction projects. The goal is to ensure that the men and women at the workforce have everything they need to do their best work every day, without delays or workarounds. In particular, AWP ensures that they have all needed documents, materials, tools, and access to the workforce. Keeping the construction team working efficiently on the right tasks is the key driver in delivering projects on time and on budget.

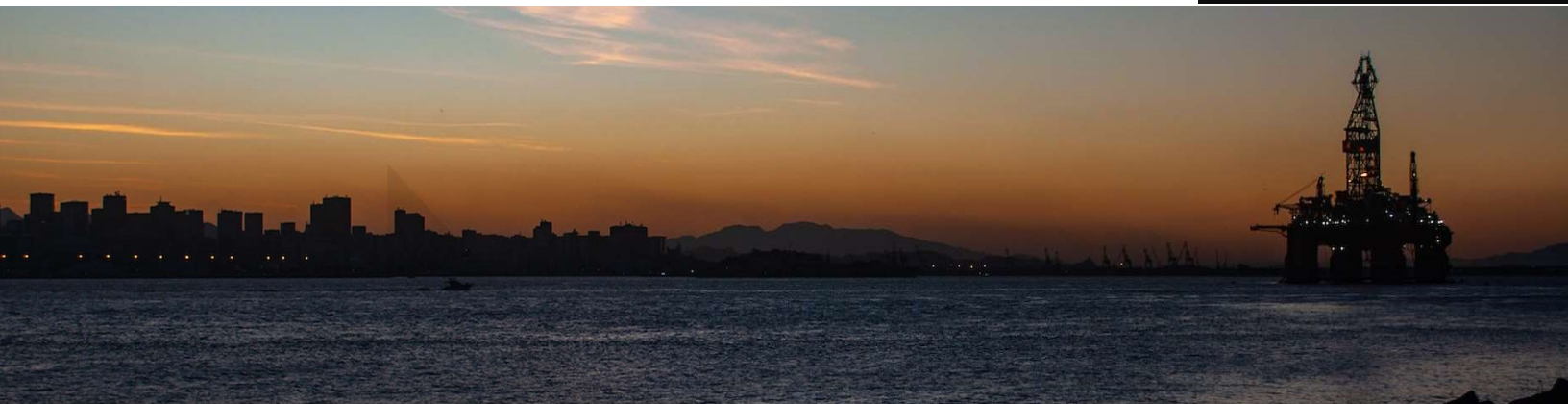
AWP works by grouping work into logical and discrete units, called packages, and planning, preparing, and executing work in those packages. This reduces the massive complexity of major projects to something that people can understand and execute successfully. There are two sizes of packages: smaller installation work packages (IWPs) which are actually released to crews to install, and larger construction work packages (CWPs) which are used for engineering (EWPs), procurement (PWP), and subcontracting (SWPs). CWPs are bigger than IWPs because it is impractical to achieve an IWP level of granularity right back to engineering.

Successful AWP implementation implies commitment to the idea of work packages. Packages must be completed before the packages which depend on them are begun, so they are the key elements of the project schedule. Once a package is started, it should be worked on until completion. Everyone should try to minimize the number of open

(begun but not completed) packages. Open packages must be managed, which requires work, while unopened or closed ones are much simpler. Many of the challenges of AWP arise from questions around when packages should be kept open.



AWP ensures that everyone has all the required documents, materials, tools and access to the workforce.



WHY AWP IS GOOD

When AWP is working, it makes it much easier to keep a project on schedule because it simplifies the project. Instead of tracking millions of materials and operations in a fully recursive work breakdown structure, and shuffling them arbitrarily to find a schedule, strategic project planning is done with, at most, thousands of CWP, while detailed planning is done with, at most, hundreds of IWP in process or in the near future. By tracking packages, it becomes possible to identify risks to schedule when individual packages are behind schedule, and address or mitigate those risks in a timely way.

AWP also cuts costs, in the most obvious way possible: by keeping the people at the sharp end working efficiently. In most projects, the all-in cost of people at the work face is one of the biggest components of project cost. Increasing their productivity by reducing wasted time is an effective way to save money. AWP techniques can also reduce costs in procurement and logistics, but the workforce is their primary driver.

Garner structures the communication between all supply chain participants about individual materials and shipments.

While AWP is (relatively) simple to explain, and the benefits are clear, it can be difficult to execute successfully. There are many reasons to break the packaging and execute work in a different way. But doing so can dramatically increase complexity, risk, and cost. Some of these can be addressed by discipline and proper incentives: engineering is easier to execute on a system basis than on a work package basis, and contracts and payments must be structured correctly to make it happen by work packages. But some reasons for breaking work packaging, especially material supply issues, are trickier to deal with. In the real world of supply chains, delays and issues happen all the time. Sometimes, despite good planning, a material just cannot be available in time. When that happens, the project is presented with two bad choices: delay a work package or execute part of a work package, leaving it open until the material becomes available. Either choice harms the project's ability to execute on time and on budget. The goal of the Garner platform is to provide better options.

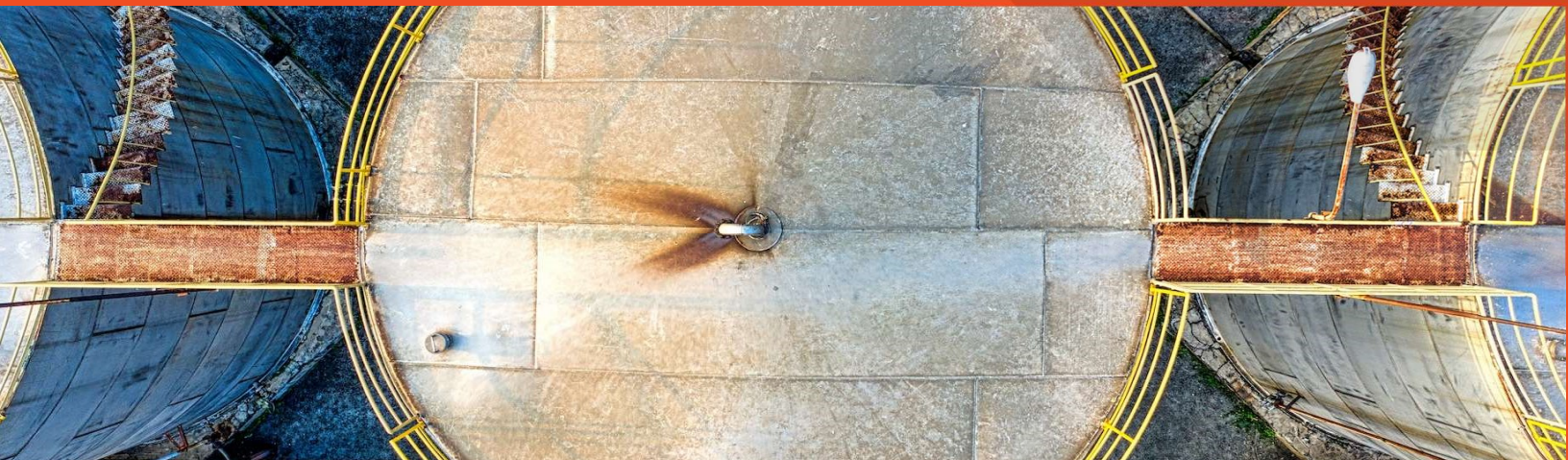
"A material cannot be available in time" sounds like a simple, yes/no problem, but it contains a great deal of complexity. This situation is usually the result of a chain of circumstances, which are often fixable if known at the time. Sometimes it is true, but there are ways to recover from the problem which don't require delays or broken work packages. The key to success is to give the right person the right information at the right time to make the right decision for the project.

WHY IT BREAKS DOWN

During the supply chain process, from requisition to delivery at the work face, there are many steps and handovers. There are requests for information and responses. There are documents and certificates. There are releases and numbers. A problem with any of these can lead to a delay which, if left unnoticed long enough, will lead to construction delays. These problems become more likely in the major project environment, where literally millions of materials are competing for the attention of everyone in the supply chain. People's attention is naturally drawn to the biggest and hardest to fix delays, at the end of the supply chain, while earlier problems, which can often be easiest to fix, pass unnoticed. These problems are often missed communications or overlooked notices, rather than just physical milestones in the supply chain process like departure and arrival. Garner structures the communication between all supply chain participants about individual materials and shipments, making it reportable, alertable, and actionable, to make problems visible earlier. If any step in the communication about materials or shipments is taking longer than it ought, this could lead to a delay down the road. Garner shows and treats the communications steps and activities as part of the material and shipment life cycle just like physical milestones, which helps users understand and work with all the important supply chain events.

As well as making problems visible by structuring communications, Garner helps users structure their problem response. The first element of successful problem response is identifying which problems need to be solved first. Prioritizing issues helps ensure that users address the issues which they should be working on in a timely way. This saves time for other users because they aren't having to deal with escalated issues. Garner helps users achieve proper prioritization by giving every user an individual dashboard of actions to take, including managerial escalations. Most of these actions are the communications of one sort or another, including questions and responses, releases, and approvals, which are needed to keep the supply chain moving. These automatically direct users to the right actions they need to take.

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PUTTING THE SOLUTION TO WORK

Once a user identifies the problem or issue to work on, they must address it. The correct action varies depending on the issue: it may be complex and require consideration and judgment, or it may be simple and require only a knowledge of standard operating procedure. Garner makes both kinds of action easier.

The Garner platform captures data from all supply chain participants, using a variety of techniques including Garner's powerful API, data file uploads, or modules connecting to the API of other supply chain participants. Garner can handle any data or documents found in those systems, thanks to its unique design which defines all data in the system in terms of simple, configurable data elements. Garner can link to documents or data in non-Garner systems, to ensure that the data presented through Garner is always the most up to date possible. This ensures that users have all the data they need to make good decisions.

For users making simple decisions or taking simple actions, based on a limited set of criteria, Garner can also help. For each user group, certain kinds of information can be hidden or made optional, and certain kinds of action can be facilitated with buttons or made impossible. Thus, users with simple job descriptions are presented with only the information and options they need to do their job. As with all the Garner system, this can be defined during configuration by our implementation team, with no programming required.

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GARNER

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