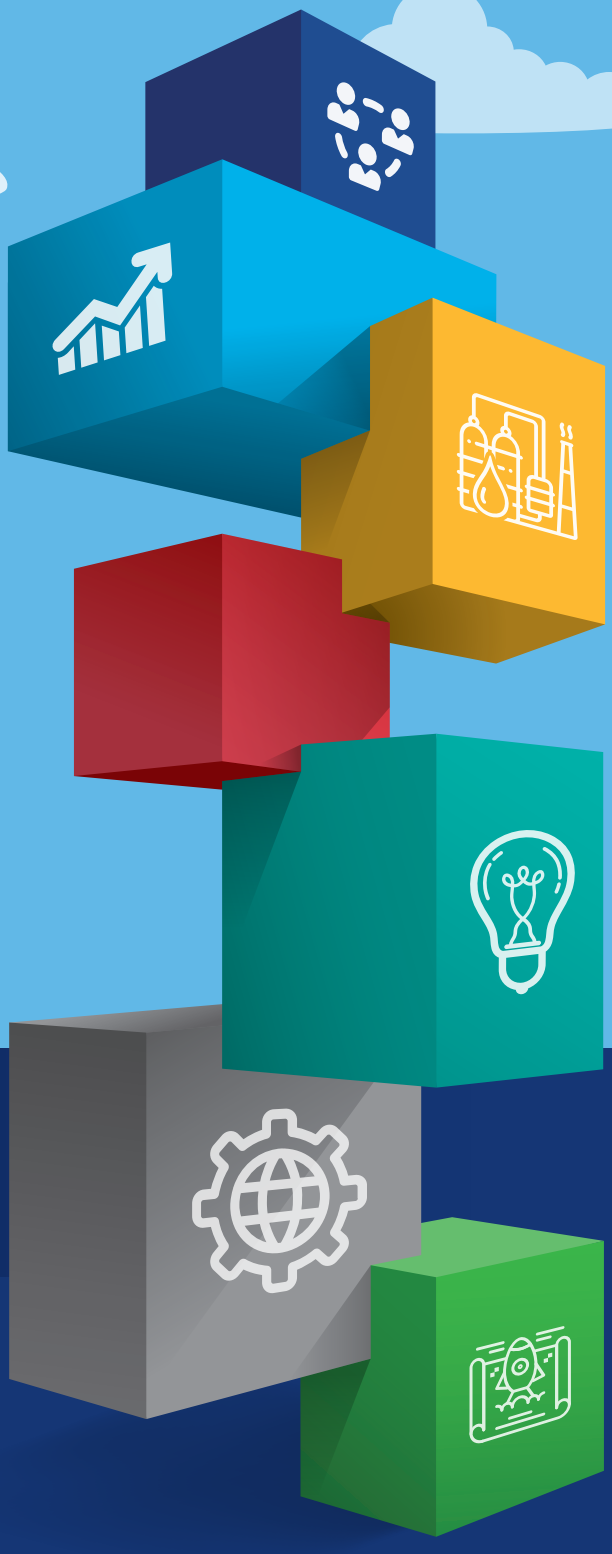
ISSUE 08 | BY CONCORD PROJECT TECHNOLOGIES INC.

VELOCITY

INNOVATION AND LEADERSHIP FOR CAPITAL PROJECTS

ADVANCED WORK PACKAGING

THE FUNDAMENTALS EDITION



CONCORD FUNDAMENTALS:
A series of articles that lay the foundation for AWP

P. 03 | The Case for Advanced Work Packaging

P. 14 | **4 STEPS** to Building a Path of Construction

P. 24 | Why Capital Project Executives Need a Predictability Mindset

CONTENTS

EDITORIAL: IT'S TIME TO RAISE THE BAR
Why to we accept that most capital projects are late and over-budget?
p. 01

CONCORD FUNDAMENTALS: THE CASE FOR ADVANCED WORK PACKAGING (AWP)
Why AWP is considered best practice.
p. 03

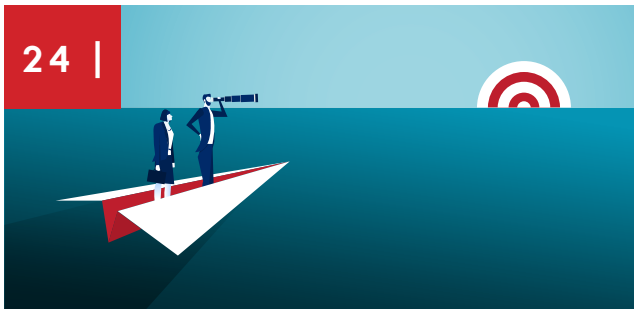
CONCORD FUNDAMENTALS: CONSTRUCTION WORK PACKAGES
A guide to purpose, design and execution.
p. 06

CONCORD FUNDAMENTALS: ENGINEERING WORK PACKAGE FUNDAMENTALS FOR CAPITAL PROJECTS
Engineering that supports construction.
p. 12

CONCORD FUNDAMENTALS: 4 STEPS TO BUILDING A PATH OF CONSTRUCTION (POC)
A four-step guide to a solid PoC.
p. 14

CONCORD FUNDAMENTALS: WORKFACE PLANNING FUNDAMENTALS FOR CAPITAL PROJECTS
An introduction to Installation Work Packages.
p. 09

CONCORD FUNDAMENTALS: ARE YOU READY FOR ADVANCED WORK PACKAGING?
A maturity assessment can help you find out.
p. 18



5 ROADBLOCKS TO TRANSFORMATIONAL CHANGE IN CAPITAL PROJECTS
What does it take to achieve meaningful transformation?
p. 21

WHY CAPITAL PROJECT EXECUTIVES NEED A PREDICTABILITY MINDSET
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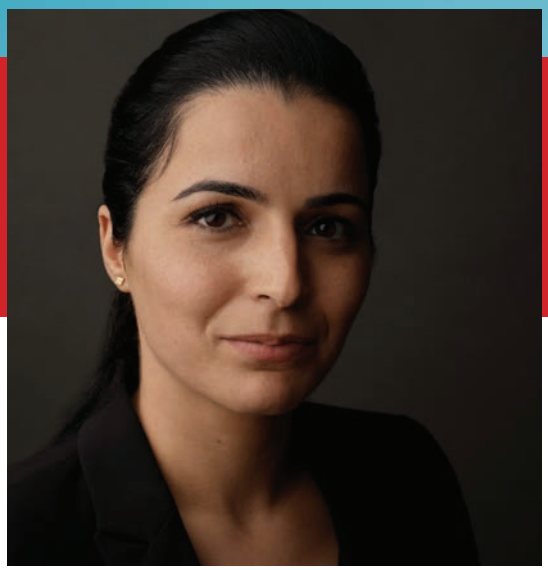
p. 24

EDITORIAL

It's Time to Raise the Bar

BY OLFA HAMDI



Why do we tacitly accept the fact that most capital projects are late and over-budget?

It's time to raise our standards for capital project leadership.

We must dismantle a business culture that accepts changeable plans, allows unstable schedules, and tolerates hopelessly outdated technology and inefficient systems.

> The first step toward achieving a culture of predictability and accountability is for us to establish consensus around fundamentals. – OLFA HAMDI

Instead, we must create and promote a new and vibrant culture rooted in predictability and accountability, a culture in which on-time, on-budget delivery is not just celebrated and rewarded, but *expected* as a non-negotiable baseline for industry participation.

We have put people on the moon. We have split the atom. It *is* possible to plan and execute a construction project on-time and on-budget, but we don't demand it from ourselves as an industry. We need to raise the bar.

The first step toward achieving a culture of predictability and accountability is for us to establish consensus around fundamentals.

Advanced Work Packaging gives us a powerful, common language to start talking intelligently about the challenges inherent in what we do; indeed, there is a flourishing discourse around AWP both online and offline, and in circles of practice.

What is missing from this conversation, however, is a shared understanding of the basics. In order for us to fully leverage the power of AWP, we must have a shared understanding not just of the system itself, but of the terminology, principles, and best practices the underpin it.

Here at Concord, we're committed to cultivating change and empowering capital project professionals.

As part of this commitment, we're pleased to present the 8th Edition of Velocity — *The Fundamentals Edition*. In this issue of the magazine, we've consolidated the fundamentals of Advanced Work Packaging (AWP) and Predictability Thinking™ in one place for the benefit of both established AWP practitioners and those new to the field.

It is our hope that in providing fact-based, field-tested information, we will assist in establishing this very necessary — and long overdue — consensus around AWP fundamentals.

Part of the reason I started Concord is that I believe it is possible to deliver successful projects, on-time, and on-budget. For more than a decade, I've been helping clients incorporate AWP fundamentals and principles into their work processes, and now with the advent of Predictability Thinking™, we see more success than ever.

I refuse to accept the status quo of unpredictable capital projects management, and I urge you to join me in building a new, predictable future for us all.

CONCORD FUNDAMENTALS:

THE CASE FOR Advanced Work Packaging

BY OLFA HAMDI

ADVANCED WORK PACKAGING AND PREDICTABILITY THINKING™ ARE QUICKLY EMERGING AS BEST PRACTICES IN CAPITAL PROJECT MANAGEMENT. HERE'S WHY.

For nearly a decade now, forward-thinking capital project leaders have applied Advanced Work Packaging (AWP) techniques and strategies in an effort to transform antiquated and deeply entrenched models of capital project planning and execution. This groundbreaking new system has delivered remarkable benefits to the companies that embrace it and, as a result, AWP has secured a place as an industry best practice — but the transformation is not yet complete.

More recently, Predictability Thinking™ has emerged as a critical precursor to successful Advanced Work Packaging initiatives. If AWP is a set of tools and tactics, Predictability Thinking™ is an operational paradigm that underpins it: a principle-driven approach to thinking about capital project execution that goes beyond tools and tactics to deliver comprehensive, transformational change.

For those new to the concepts and practices, however, AWP can seem complex and overwhelming, and it can be hard to see the forest for the trees. What is the case for Advanced Work Packaging? This article seeks to answer that question.

First, a brief history. Advanced Work Packaging traces its roots back to the Alberta Oilsands, in northern Alberta, Canada. In 2010, the Construction Owners Association

of Alberta partnered with the Construction Industry Institute to study and strengthen early concepts. A team of researchers based at the University of Texas at Austin worked together to document best practices and recommendations — I was a key member of that team.

We presented our first reports in 2013 at the Annual CII conference, and shortly after that, I went on to found the Advanced Work Packaging Institute, a non-profit organization dedicated to raising awareness about AWP and reaching out to the industry professionals to further develop the concept. When I first started publishing about Advanced Work Packaging, the only other packaging-related articles online were for literal product paper packaging solutions. Now, the online conversation about AWP is flourishing. A few years after founding the AWP Institute, I co-founded Concord Project Technologies, a services company driving the implementation of an groundbreaking, proven AWP execution model rooted in Predictability Thinking™.

Back in 2012, our question was a simple one: What more can we do to improve construction efficiency? We discovered that problems in the field can almost always be traced back to the earliest phases of project planning and development. There are myriad ways in which early decisions impact field productivity, but the most critical problems arise when a construction plan fails to accurately capture the real-life complexities of construction. Designing a construction plan without accounting for constraints is like planning to climb Everest without accounting for the cold — failure is inevitable. And yet, we do it all the time.

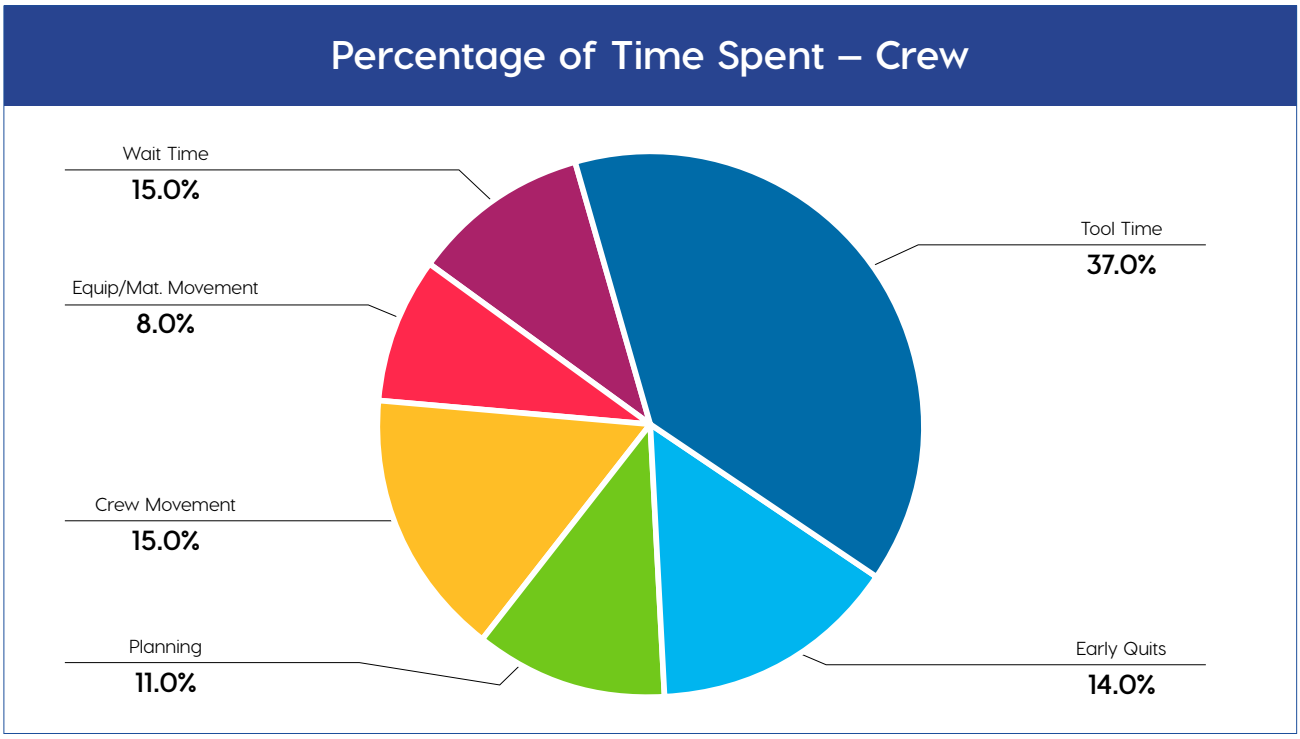
The best solution to this problem is to start packaging work well in advance of construction, and that is how Advanced Work Packaging got its name. A construction-driven strategy can improve our two most important metrics: supervision time and field productivity, or time-on-tools.

Here's how.

1 | Improved Field Safety and Productivity

Enhanced safety and increased productivity are a direct consequence of AWP implementation.

Packaging work early in the project lifecycle and delivering fully resourced Installation Work Packages to construction teams has two powerful benefits. First, crews spend more time on their tools, and random, unplanned work is all but eliminated.



Second, supervisors spend more time in the field (and less time on paperwork). Organized and predictable work is safer and far more productive, saving time, money, and lives. Both Owners and contractors benefit.

2 | Predictable Project Outcomes

The truth is that capital projects remain woefully unpredictable and that as an industry, we seem to have accepted this as a natural consequence of engaging in complex project work. It doesn't have to be that way. Applying Predictability Thinking™ and packaging work well in advance of construction helps project teams — especially engineering — identify potential problems months and even years before they manifest in the field as delays or cost overruns. Once identified, engineering issues can be discussed and proactively addressed, forestalling problems that would otherwise impact project outcomes. Predictable engineering leads to predictable construction. From equipment and permits to labor and leadership, early identification and resolution of problems are critical to predictable project delivery.

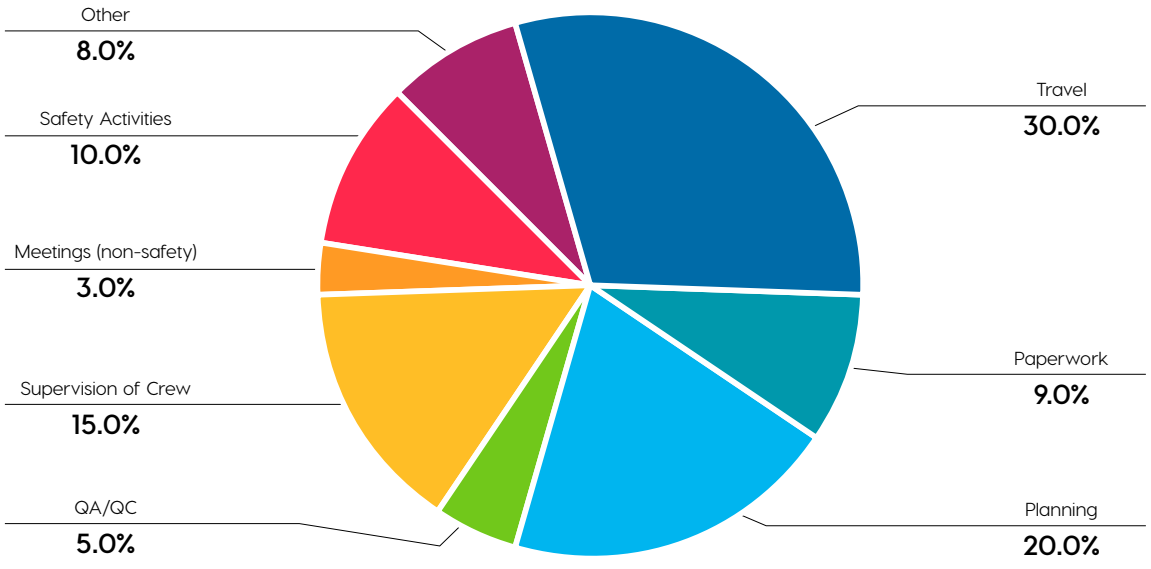
3 | Fewer Change Orders

Change orders are expensive. Whether it's a scope change or a design change, the impact of a change order invariably goes well beyond the order itself. Project teams who have their work packaged in advance of the funds' authorization gate make fewer changes, saving their organizations hundreds of thousands of dollars on every project — sometimes far more. Advanced Work Packaging requires project leaders to engage in construction-driven planning early in the project lifecycle, to identify objectives, risks, constraints, and trade-offs, and to focus on developing a construction-driven execution strategy. By the time the project reaches Stage Gate 3, the team had identified and addressed its blind spots and resolved many of the issues that might have otherwise become expensive change orders.

4 | More Business

Most Owners now understand that packaging work in advance makes projects more predictable and profitable, and creates more sustainable contractor relationships. As a result, they are building Advanced Work Packaging into their contractual language, and contractor companies who are prepared to meet those contract obligations are more likely to win those bids. AWP and Predictability Thinking™ combined are so potent that we expect them to become a non-negotiable element of most

Percentage of Time Spent – Foreman



capital construction project contracts by 2025. Start now, and you'll give your firm a competitive advantage.

5 | Improved Human Resource Management

Today, there is no clear career path for capital project leaders. By adopting Advanced Work Packaging as a standard in your organization, you are showing your team what predictable project stewardship looks like and outlining for them the skills and attributes they need to develop to achieve excellence. When you identify a junior associate with the potential to become a project leader, make them your AWP Champion, get them a mentor, and identify AWP training opportunities that will position them for success.

6 | Stronger Bottom Line

Advanced Work Packaging saves money and improves the bottom line on capital construction projects. In many cases, the financial cost of implementing AWP will be earned back if just one major change is averted in the course of construction. More time on tools, on-time project delivery, more winning bids — these and more contribute to a bigger bottom line for companies that embrace AWP.

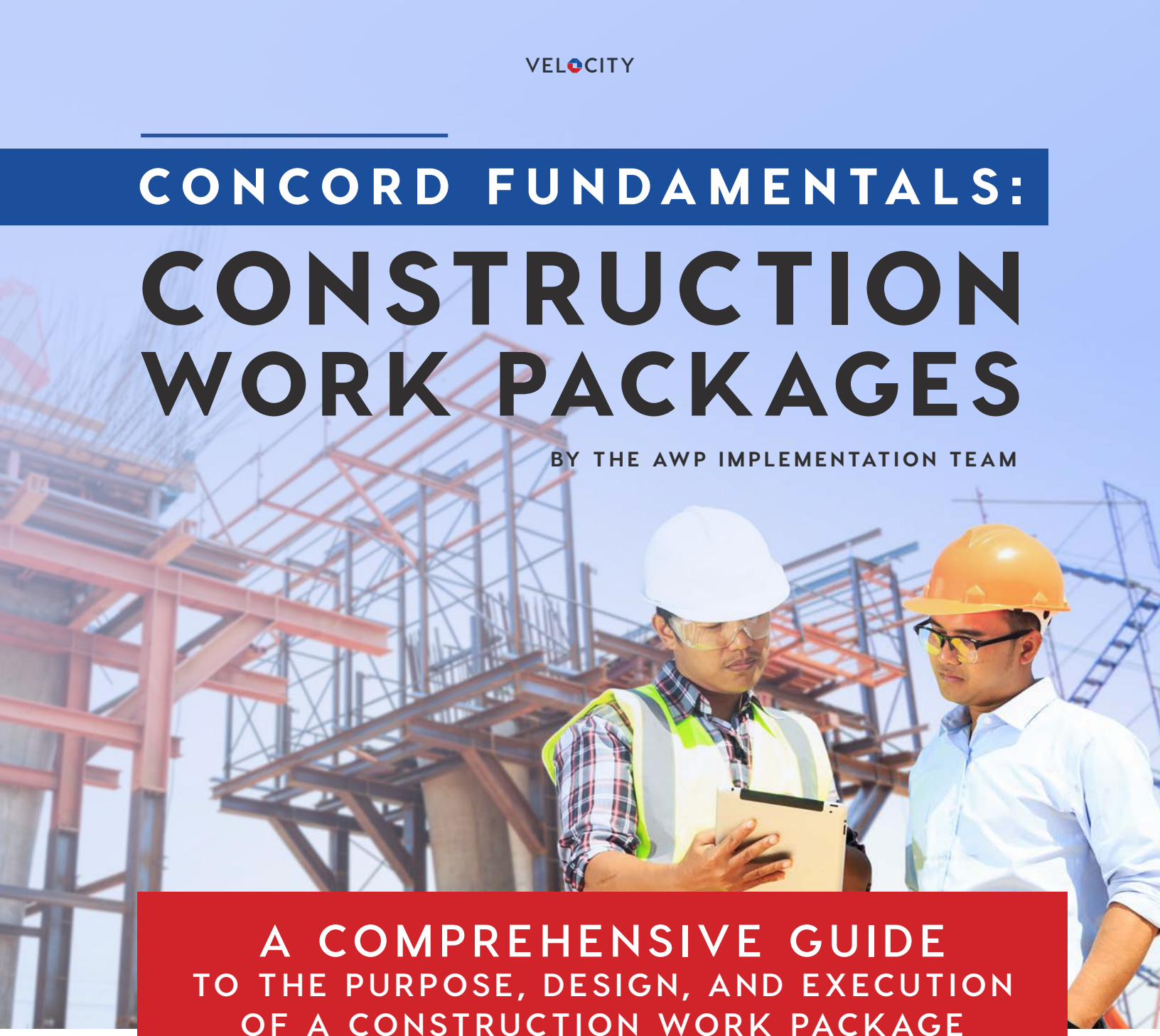
Advanced Work Packaging is good for business. If you're ready to get started, we're standing by to help with a maturity assessment, training, coaching or consulting. Contact us today.

> "Designing a construction plan without accounting for constraints is like planning to climb Everest without accounting for the cold – failure is inevitable." – OLFA HAMDI

CONCORD FUNDAMENTALS:

CONSTRUCTION WORK PACKAGES

BY THE AWP IMPLEMENTATION TEAM



A COMPREHENSIVE GUIDE
TO THE PURPOSE, DESIGN, AND EXECUTION OF A CONSTRUCTION WORK PACKAGE

The best way to understand the purpose and value of a Construction Work Package is to compare it to the traditional way of managing construction, so let's start there.

In most capital construction firms today, the bidding process begins as soon as engineering teams have delivered their initial documentation for a project. At this point, the executable elements of the project are not yet defined — far from it — but leadership teams finally have some initial technical details in-hand. In a good-faith effort to get the project off to a timely start, they initiate contractor negotiations.

In the absence of detailed plans and deliverables, however, contractors cannot make fact-based cost estimates or time commitments. As a result, negotiators default to a time-and-materials contract — after all, that's the only kind of contract that makes sense given the limited available information. Unfortunately, time-and-materials contracts contain little inbuilt incentive for contractors to work quickly or efficiently.

A cynic might say that it offers the opposite incentive, since the longer the project takes, the more money they make.

The ground has not even been broken, and the project leaders have unwittingly sown the seeds for delays and cost overruns.

There is a better way.

The Difference that Construction Work Packages Can Make

First, it is important to understand that Construction Work Packages (CWPs) are not produced during the construction phase. This is a widely held misconception.

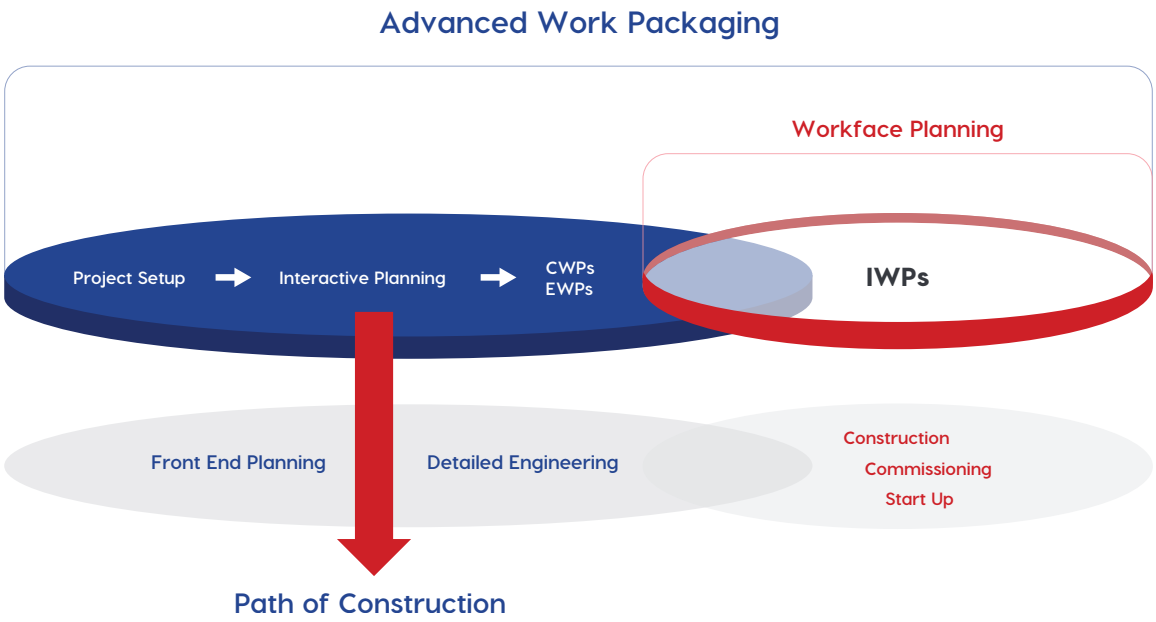
On the contrary, an organization that has applied the principles of Advanced Work Packaging (AWP) will develop CWPs long before initiating negotiations with contractors. Indeed, the CWP will form the basis of those negotiations.

On a well-run AWP project, the development of CWPs begins immediately after the detailed engineering phase, when the first Engineering Work Packages (EWPs) are complete. Using the EWPs and the Path of Construction for reference, the planning team works to create reasonably sized packages of work and to sequence them in a way that supports timely, predictable project completion. This is the ultimate goal of packaging work *in advance*.

Contractor negotiations begin only after the scope of construction is clear and the Construction Work Packages are complete. With detailed plans and deliverables in-hand, contractors can make fact-based cost estimates and time commitments. As a result, negotiators can enter into contracts that stipulate both the executable construction task and the deadline for completion.

This is the real power of packaging work in advance: it changes the contractual dynamics so that contractors have a strong incentive to collaborate, work efficiently and deliver on-time and on-budget. In short, it makes everything more *predictable*.

The Need for Construction-Driven Planning and Execution



PAGE 8

Who Builds CWPs? What is Inside a CWP?

Generally speaking, a construction work package includes all of the information required for the elements therein to be completed. This includes:

- Comprehensive engineering information for the defined scope of work
- Timing and deadlines
- Labor requirements
- Constructability details
- Heavy Lifting requirements (cranes, etc.)
- Construction Strategy
- Anything else required by the contractor

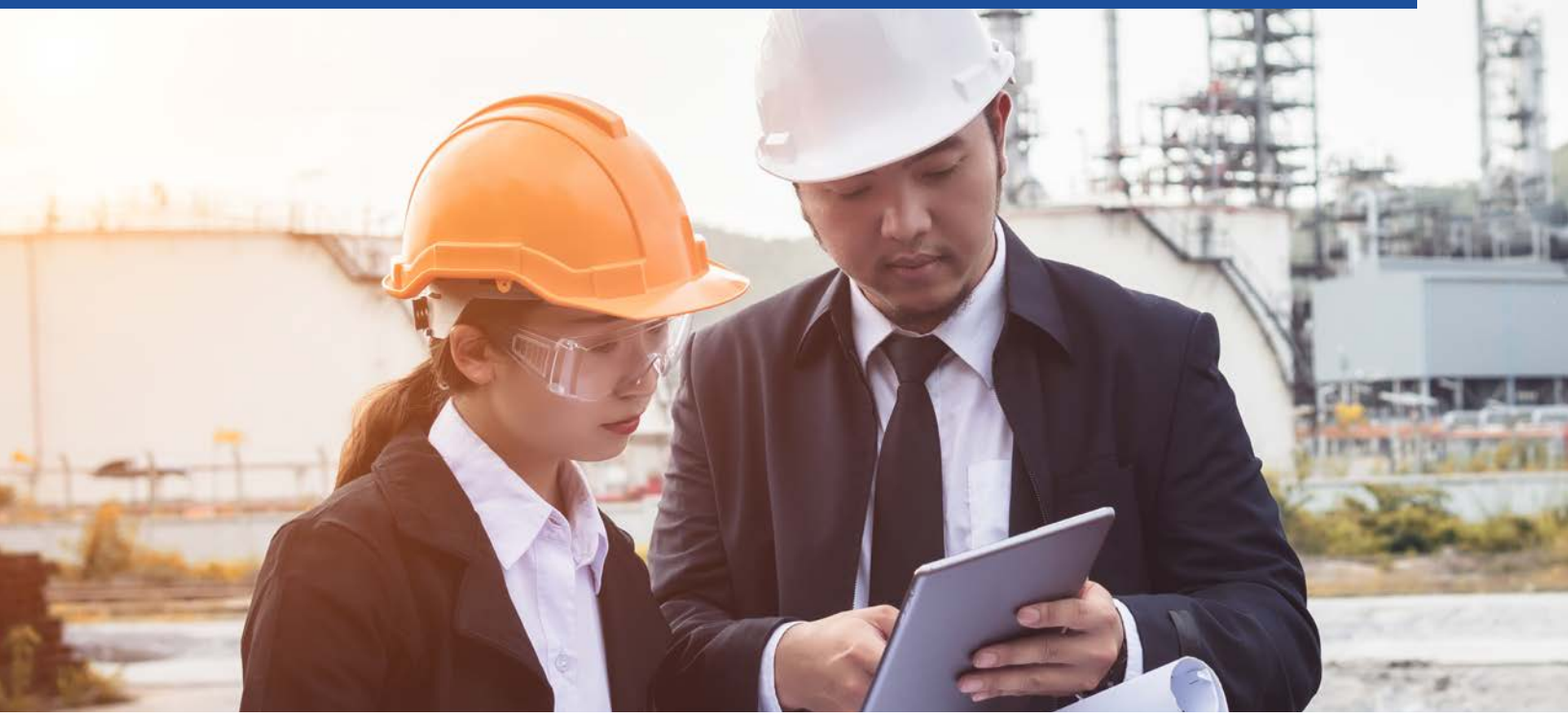
The size of an average CWP varies, but a typical work package contains several months of work for a contractor organization. The Construction Manager is accountable for the CWPs, but they are built by a multi-disciplinary team that includes safety, engineering, quality, planning, scheduling, construction, engineering and other experts.

Contractor companies are responsible for building the Installation Work Packages (IWPs) that flow from the contracted CWPs. They may need to upgrade their project management capabilities or hire a Workface Planner. However, it is important that contractors remain in control of the construction execution and responsible for the outcomes. Efficient work improves their bottom line; delay and cost overruns do the opposite.

Ultimately, a well-designed Construction Work Package is one of the most important tools a team has for improving overall project predictability. Building on the Path of Construction (PoC) and solid Engineering Work Packages, well-sequenced CWPs provide a solid foundation for on-time, on-budget project delivery.

A well-designed Construction Work Package is one of the most important tools a team has for improving overall project predictability.

CONCORD FUNDAMENTALS:



ENGINEERING WORK PACKAGE FUNDAMENTALS FOR CAPITAL PROJECTS

BY THE AWP IMPLEMENTATION TEAM

A SIMPLE GUIDE TO ENGINEERING WORK PACKAGE FUNDAMENTALS, A FOUNDATIONAL COMPONENT OF THE ADVANCED WORK PACKAGING PROCESS

There is a growing consensus that Engineering Work Packages (EWPs) are the most efficient and effective way to organize a modern capital project engineering team. Still, many of our clients ask how engineering work package fundamentals differ from traditional engineering models, and they wonder why we insist on adding a new deliverable to their already-overburdened engineering teams.

Engineering Work Packages are not a new deliverable. As practitioners of Advanced Work Packaging (AWP), we simply use EWPs to prioritize, deliver and leverage the work you're already doing. Here's how.

What is an Engineering Work Package?

An Engineering Work Package (EWP) is a diverse set of engineering deliverables that are assembled to support a specified scope of construction work.

Engineering Work Packages typically form the basis of Construction Work Packages, and ideally contain everything a workface planner needs to create Installation Work Packages for the specified scopes of work. As such, EWPs are a foundational component of the Advanced Work Packaging process and must be composed with due consideration and care. It's important for capital project teams to be aware of engineering work package fundamentals to help ensure predictable project delivery.

What's Inside an Engineering Work Package?

The contents of an EWP vary by project, scope and package, but a comprehensive and well-designed EWP typically includes some or all of the following:

- A concise description of the intended construction scope
- An explanation of key assumptions
- Related isometric drawings and connection points
- Engineering data
- Bills of materials
- Permit requirements
- Design specifications
- Vendor data
- General impact plan
- Separate documentation issues for needed support
- Change evaluation

These deliverables have one thing in common: they are related to a single discipline. EWPs are unidisciplinary.

Milestone vs. Engineering Work Packages

Capital projects traditionally organize engineering around milestones and estimated overall hours. When teams discuss progress, they typically express it as a percentage of hours spent or design deliverables completed (i.e. "engineering is 45% complete"). This approach allows project managers to estimate how many engineering work hours are remaining on the project, which is an important metric.

Engineering Work Packages can give you this metric, and more.

When a capital project team embraces Advanced Work Packaging and engineers begin working with EWPs, they start to express progress as a ratio (i.e. "we have completed 45 of 100 EWPs"). Since each work package contains an estimate of engineering work hours, project managers can still understand how many engineering work hours remain.

In addition, however, *project teams can also understand how engineering progress correlates to construction progress.* The ratio will be different for every project, but on all projects the level of visibility will increase dramatically. Engineering teams will have a very clear idea of how their work on EWPs is directing, expediting or delaying the work in the field.

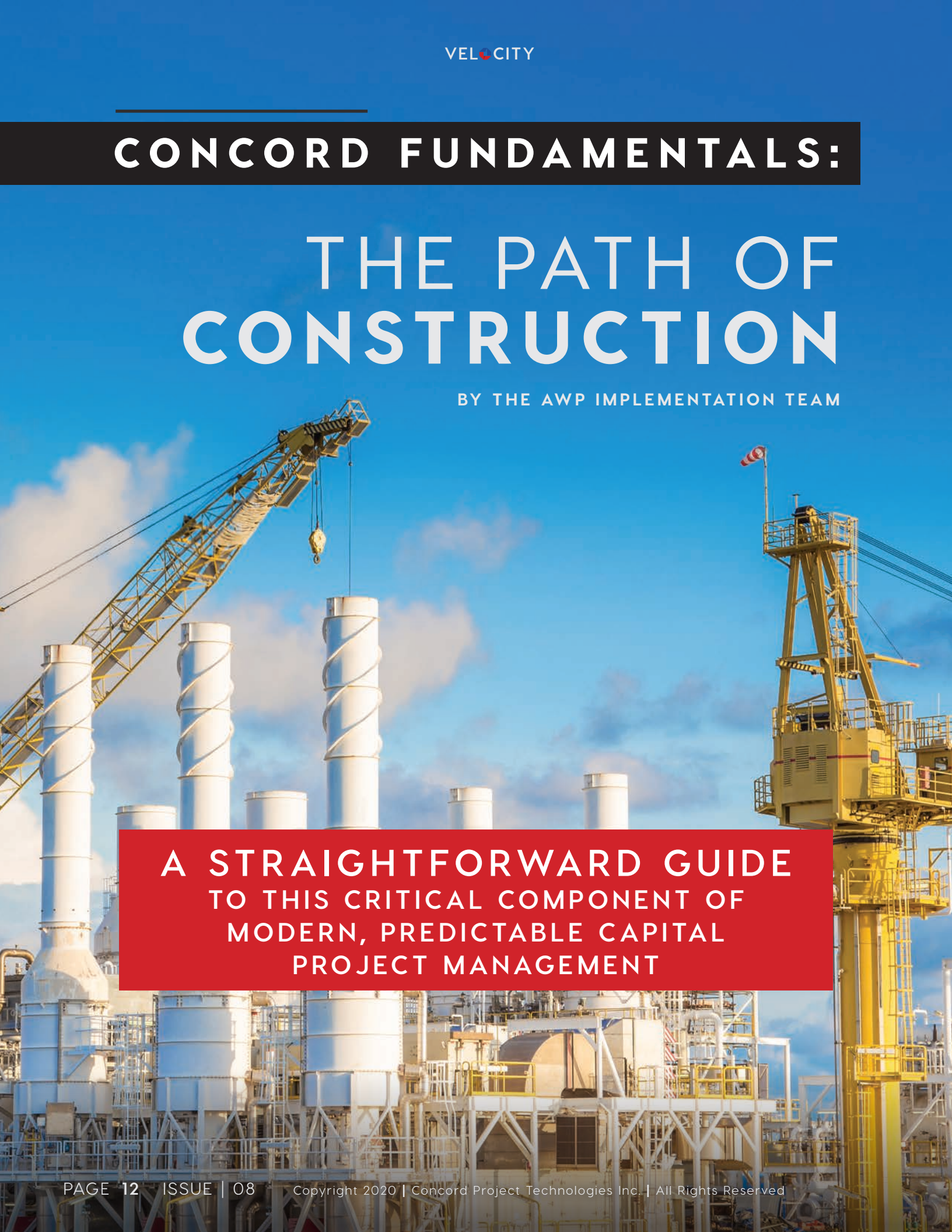
Engineering Work Packages Support Predictable Project Delivery

With AWP in place, capital project leaders who want construction to begin on time can start by making a concerted effort to ensure that engineers are delivering EWPs on schedule. This will facilitate the timely development of Construction Work Packages, the implementation of a clear Path of Construction, and, finally, the development of Installation Work Packages that actually get capital projects built.

CONCORD FUNDAMENTALS:

THE PATH OF CONSTRUCTION

BY THE AWP IMPLEMENTATION TEAM



A STRAIGHTFORWARD GUIDE
TO THIS CRITICAL COMPONENT OF MODERN, PREDICTABLE CAPITAL PROJECT MANAGEMENT

The capital project construction industry is in transition, and there is a great deal of confusion around the definition and purpose of one key element of modern capital project management — the Path of Construction. This short guide is intended to resolve this confusion and to serve as a quick-reference guide for new and established AWP and Predictability practitioners alike.

First, let's dispel two stubborn rumours. A modern Path of Construction document is not a reference to constructability. While constructability analysis and reviews are important, they are entirely different from a Path of Construction, or PoC. A Construction Management Plan is also important, but it is not a PoC.

What is a Path of Construction?

A Path of Construction is a document that explains how you are going to build your capital project in the field, and how engineering and procurement deliverables will support that effort in a timely fashion. In Advanced Work Packaging terms, the PoC is the step-by-step guide to your construction delivery strategy, outlining the sequencing of your Construction Work Areas and Construction Work Packages. The PoC is developed very early in a project's front-end definition phase.

The PoC is necessary because it is the only formal opportunity that a project team will have to align everybody around the construction-driven imperative, from procurement and engineering all the way to construction. The Path of Construction is like the skeleton of a project; without it, the entire operation is much more likely to collapse in upon itself.

When Concord started working with companies to implement Advanced Work Packaging, we quickly discovered that most companies do not implement a Path of Construction as part of their primary deliverables. We made it part of our mission to get an operational Path of Construction in place with all of our clients. Here's why.

1 | The Power of Process

The process of establishing a Path of Construction is an important part of aligning a team around a construction-driven approach to predictable capital project delivery. We aim for an interactive, collaborative process that brings engineering, procurement and construction together. These sessions must be led by project and engineering managers as well as construction leaders. Indeed, the failure to bring construction leaders into these conversations is a seminal mistake — one of six major signs you've lost your way on the Path of Construction. On any project over $20 million, you will need multiple sessions to develop a high-quality Path of Construction. This investment will pay dividends throughout the project life cycle.

2 | An Improved Constraints Analysis

A solid analysis of constraints is a pre-requisite for an effective Path of Construction, and so the preparation of a PoC will, in effect, force a more comprehensive constraints analysis. This means that a project team must review *all* constraints associated with the project — material, procurement, engineering, site conditions, etc. — in order to prepare a strong PoC. The benefits of a fulsome constraints analysis go well beyond the creation of a PoC, as any seasoned capital project manager will tell you.

3 | Enhances Assurance for Owner and EPC Companies

The final Path of Construction document itself will guide the work of everyone on the project, and it will also become one of the deliverables that an Owner assurance team considers as part of the independent review requirements before the Full Investment Decision (FID) is made. Owners review the scope, risk register and staffing, but the PoC is the only document that shows that the team has considered *how* they will actually construct the facility and how all the other disciplines will feed construction with the right info at the right time. It is an invaluable tool.

Connecting People for Predictable Projects

We've seen great success where companies and teams invest time and capital in the creation of a PoC, because the document provides a touchstone throughout the project life cycle and translates the same execution sequence into everybody's language. For example, when teams experience problems in the creation of packages — a common hurdle — the PoC provides assurance that the project will continue apace. It's an awareness upgrade.

The process of establishing a PoC also dramatically improves collaboration. It provides an opportunity to discuss issues that don't normally get discussed during early phases of the capital construction process. For example, the development of a PoC will often force discussion between construction and Operations, so that Operations teams better understand the impact that their requests have on construction. You cannot underestimate the value of these person-to-person connections in improving overall project predictability.

CONCORD FUNDAMENTALS:

4 STEPS

TO BUILDING A PATH OF CONSTRUCTION (POC)

Here's a simple four-step guide to the process of creating a Path of Construction (PoC).

BY THE AWP IMPLEMENTATION TEAM

The most important thing to remember about building a Path of Construction, also called PoC, is this: start as early as possible. At the very latest, you'll want to make it part of your Phase 3 front-end definition. If you're already in detailed engineering or execution, you've missed your chance, and a PoC will yield little or no benefit for your project.

If you've still got time, and you're ready to get started, keep reading for a step-by-step overview of what a PoC design and implementation process looks like.

Step 1: Commitment

The first thing you need to build an effective Path of Construction is buy-in into the importance of construction driven planning and construction-driven engineering. The key to buy-in is understanding.

Having a Path of Construction in place is like having a GPS in your car – you know your Critical Path, but the PoC shows you precisely how you'll get there.

If you're not there yet, you'll need to take a step back and work on getting started with advanced work packaging.

Why? Because your team won't understand the benefits of a PoC unless they first understand the benefits and value of AWP. Understanding is the precursor to commitment, and commitment is critical to the success of your PoC. Remember that the PoC is a formal deliverable, and putting it together will require extensive preparation followed by a series of collaborative meetings — your team will have to be dedicated to do it well. If your team isn't on board with AWP, and doesn't understand why a PoC is necessary, you're setting yourself up for failure.

Step 2: Preparation

The length of the preparation phase varies, depending on the size and scope of the project. Preparation for building a path of construction begins with collection of relevant data, constraints and project execution information, from across the entire project, including but not exclusive to:

- Scope Statement
- Schedule
- Plot Plan
- Project Execution Plan (PEP)
- Construction Management Plan (CMP)
- Constraints Assessment(s)
- Heavy lift requirements
- Long leads

This and other multi-disciplinary information will be used to prepare a list of the Construction Work Areas that are right for your project. To make sense of it all you will need to have a scheduler on board, with an early Level 3 schedule in hand. With this preparatory work in place, you'll have all your key data, a resource-loaded schedule broken out by weeks, and a sense of your Critical Path — all of which is required to develop a comprehensive Path of Construction.

Step 3: Collaboration

Here's the key to meaningful collaboration: Get the right people in the room. Your construction team will lead the discussion, and your engineering team must be there, too. Your project manager, scheduler, estimator, procurement representative and AWP champion must be in the room, too, along with anyone else who plays a critical role on your unique project. If the right people aren't in the room, you're setting your PoC up to fail.

You'll also want to ensure that these collaborative planning sessions are facilitated by someone who understands interactive planning. At Concord, we've developed a standard agenda that moves project teams from zero to first draft as quickly as possible. On a small project, that might take three days; on a megaproject, it could take three intensive weeks. The key determinants are the size of the project, and the quality of data available to the team.

Step 4: Communication

The final, critical step to building a path of construction is to put it all together and communicate it to the entire project team. A Path of Construction document does little good if it's left to gather dust on a shelf somewhere, and it's useless if the people who receive it don't understand what it's for.

The construction manager owns the Path of Construction, but it's leadership's responsibility to make certain that anyone who is expected to leverage the PoC has a solid understanding of what it is and how to use it. At the very least, your team will need to revisit the PoC each time there is a major change to scope, design or project objectives. It is a living document, and should remain so until handoff.

Having a Path of Construction in place is like having a GPS in your car — you know your Critical Path, but the PoC shows you precisely how you'll get there.

CONCORD FUNDAMENTALS:

Workface Planning Fundamentals for CAPITAL PROJECTS

BY THE AWP IMPLEMENTATION TEAM

YOUR INTRODUCTION TO THE FINAL STEP IN THE ADVANCED WORK PACKAGING PROCESS

What is Workface Planning?

In construction capital projects, Workface Planning is the organization of field execution around the creation of fully resourced packages of work that can be executed by a single construction crew in a discrete period of time, typically five to 10 days or around 1,000 hours.

These blocks of work, called Installation Work Packages (IWPs), have four important characteristics that we'll examine one by one. We call these the workface planning fundamentals.

First, IWPs are developed by a dedicated Workface Planner.

The person in this new role gives his or her full attention to the creation and management of IWPs. Reporting to the Construction Manager, the Workface Planner parses Construction Work Packages into IWPs, monitors the packages before being delivered to the field, while they're in the field, and seeks to identify and eliminate constraints. With the support of the Workface Planner, the Construction Manager and Foreman are liberated to focus on managing crews in the field.

Second, IWPs are typically broken down by trade or discipline.

For example, an IWP might contain a small, well-defined package of work for a single civil construction crew that is working to install a section of underground pipe. This helps project leaders establish, maintain and manage effective, efficient construction teams.

Third, IWPs are fully resourced and ready to execute.

This means that all the labor, materials, tools, drawings and other project requirements are in place, and the crew members have everything they need to complete the work that is in the package. This helps to improve safety, maximize tool time and reduce resource-related delays.

Fourth, IWPs are subject to ongoing, active constraint management.

Workface Planners are actively engaged in constraint management both before *and after* an IWP is released to the field. This active approach to monitoring and eliminating constraints helps to identify potential problems and solve them before they impact project efficiency.

What's in an Installation Work Package?

The contents of an IWP vary by discipline and scope and package, but most IWPs include some or all of the following:

- Scope of the IWP
- Description of the Work Plan
- Engineering data
- Estimate of hours
- List of required tools and equipment
- List of required resources
- Unique safety considerations
- Comprehensive engineering data

What are the Benefits of Installation Work Packages?

Advanced Work Packaging acknowledges an important fact about capital projects: Problems in the field are almost always rooted in mistakes made months and even years earlier in the project preparation phase. The application of AWP principles and protocols — including workface planning fundamentals and IWPs — can help to reduce these types of mistakes. Practitioners seek to resolve issues before they become problems.

On a practical, day-to-day level, IWPs themselves ensure that each crew is working on feasible, resourced work, which reduces lost time and improves efficiency. The continuous monitoring of packages in the field helps leaders adjust to last-minute changes. Finally, projects that use IWPs are definitely safer.

CONCORD FUNDAMENTALS:

Are you Ready for ADVANCED WORK PACKAGING?

BY THE CONCORD RESEARCH TEAM

THE BEST WAY TO FIND OUT IS TO UNDERTAKE A COMPREHENSIVE MATURITY ASSESSMENT. HERE'S HOW TO DO IT RIGHT.

An ideal maturity assessment should look at all areas of organizational and project delivery capacity, beginning well before AWP is adopted.

The foundation for a successful transition to Advanced Work Packaging (AWP) is laid long before the creation of a single work package, before the org chart is redrawn and new software is installed, even before the introductory training session. The first stake is driven into the ground when a forward-thinking executive asks this critical question: "Are we ready for Advanced Work Packaging?"

Contrary to popular belief, the answer is not obvious: Merely wanting or deciding to adopt AWP is not enough. Attempting to implement AWP when your organization is not ready is like embarking on an ultramarathon without any training: You are setting yourself up for failure. This is why the first question leaders must seek to answer is whether their organizations are ready to adopt Advanced Work Packaging. How solid are your project delivery systems? How effective are your teams? Do you have a fully articulated project delivery architecture? Is your leadership solid enough to move to predictable project delivery?

These are just a few of the questions that will dictate if, how and when you integrate AWP into your organization; there are many more. Fundamentally, the question is: Are you ready for advanced work packaging?

The Benefits of a Formal Maturity Assessment

A formal maturity assessment is best undertaken before you take any concrete steps toward adopting Advanced Work Packaging in your organization. The goal here is to develop a comprehensive understanding of your organization's existing project delivery systems, as well as leadership, culture and other key elements that will directly impact the success — or failure — of your AWP integration.

Stay true to your capital strategy. To do this, focus on linking resource requests to the goals in your capital strategy. Ultimately, a project is a resource request. Does this one fit with your capital strategy?

An AWP transformation can be complex; don't wing it. Consider that when you implement a new protocol like Advanced Work Packaging, you're introducing a host of new elements to your teams, including new language, new deliverables and new ways of working together. You need to know where you stand so that you can approach your unique transformation in a way that will really work for your organization.

The reality is that not every company is ready to adopt AWP in its entirety, and even among those who are ready for AWP, the path to integration can look very different. As a leader, you must ensure that your AWP adoption plan will be effective in bringing your people and systems along with you, and to do that you need to understand your strengths and weaknesses, and catalogue the risks and roadblocks you'll face along the way.

The best way to gain this understanding is through a maturity assessment, but very little has been written about AWP readiness, organizational maturity and comprehensive assessments. CII's IR-272, co-authored by Concord CEO Olfa Hamdi, identified three levels of AWP maturity:

Early — The organization is piloting AWP strategies

Level 2 — The organization is using multiple, integrated AWP elements

Level 3 — All areas of the company have adopted AWP principles

The best way to gain this understanding is through a maturity assessment, but very little has been written about AWP readiness, organizational maturity and comprehensive assessments.

Who Can Benefit from a Maturity Assessment?

Both Owners and EPC companies need an AWP maturity assessment, particularly those with a portfolio of capital projects and an internal project management structure. Why? Because companies with comprehensive project protocols have both formal and informal mechanisms that directly impact project delivery and predictability. Leaders who want to maintain and improve existing performance should be reluctant to tinker with these systems unless they have a clear view of the immediate and long-term consequences. The only organization that can get away without a maturity system is a company executing a one-off capital project.

An Inside Look at Concord's Four Pillars of Maturity

Our comprehensive maturity assessment evaluates more than 120 distinct elements and provides leaders and executives with all of the information required to make smart decisions about how best to implement AWP in their organizations.

We review multiple data sets across several business areas including but not exclusive to staffing, construction management and project strategy, management and delivery. Our focus on a handful of key pillars makes the analysis easy to apply to the unique circumstances of each organization we work with:

The Planning Pillar

Take a detailed look at your planning approach and practices to see if they're compatible with the principles of Advanced Work Packaging.

The Engineering Pillar

Assess the degree to which your company is construction-driven, and examine whether you teams are capable of aligning your engineering with a Path of Construction.

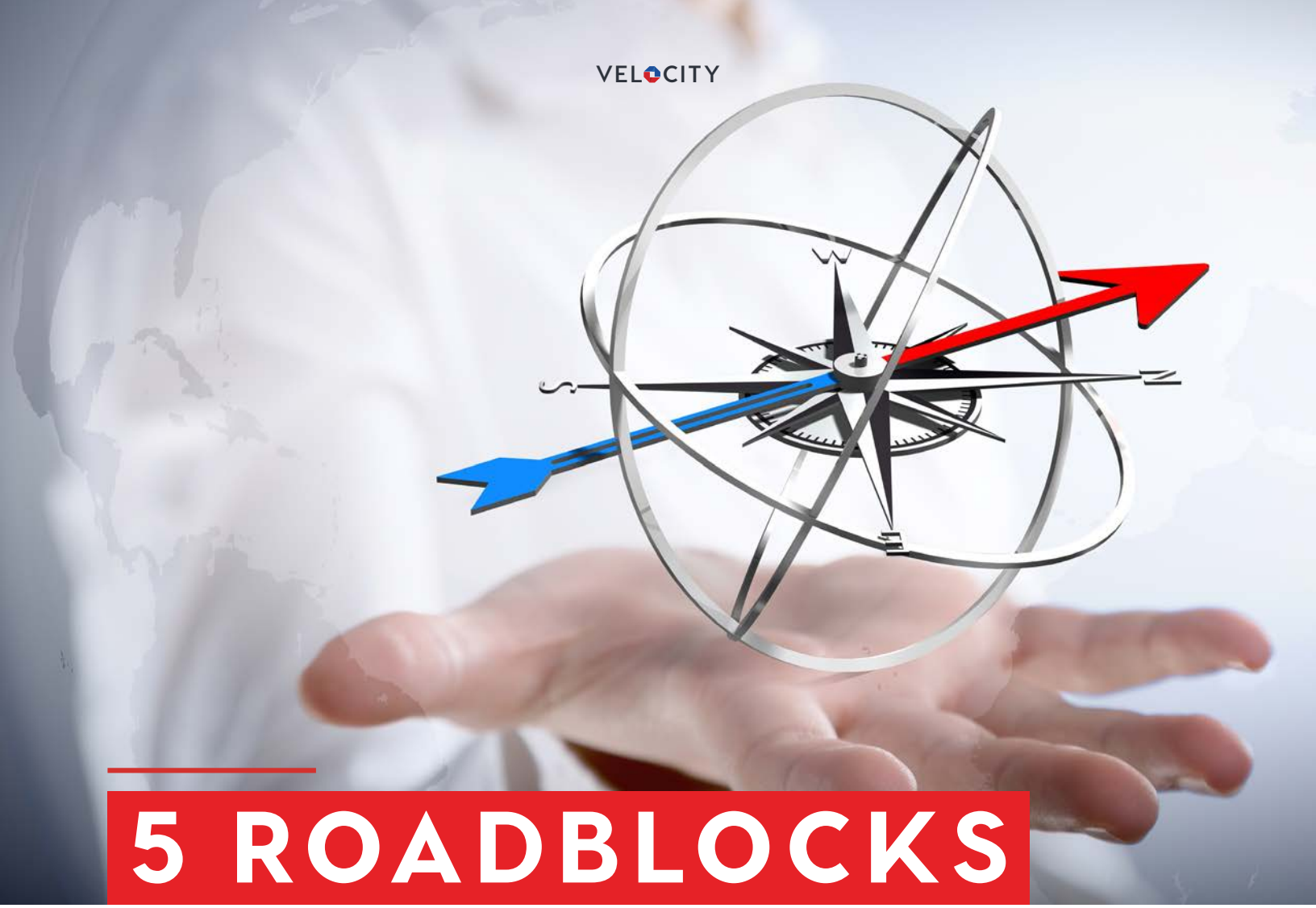
The Construction Pillar

Examine all construction execution-related practices that correlate with project outcomes like safety and labor productivity.

The Collaboration Pillar

Assess the leadership, culture, contracting strategy, and a host of other factors that impact the ability of your team and stakeholders to function in a disciplined manner.

Attempting to implement AWP when you're not ready is like embarking on an ultramarathon without training: You are setting yourself up for failure.



5 ROADBLOCKS to Transformational Change in Capital Projects

BY OLFA HAMDI

WHAT DOES IT REALLY TAKE TO ACHIEVE MEANINGFUL, TRANSFORMATIONAL CHANGE IN CAPITAL PROJECTS?

Why is it so hard to achieve transformational change in capital projects?

Change management is not only an art, but a science. The field is very well-established, with countless academics spending their entire careers studying change management at Ivy League schools dedicated to helping people and organizations through momentous change. A search for "change management" on Amazon yields some 10,000 volumes. Some of the world's mightiest corporations have leveraged proven change management tactics to achieve wholesale transformation in their organizations.

Why hasn't this happened in the capital projects industry?

Simply put, our industry doesn't understand change. We haven't invested in understanding what it takes to make change happen, and we don't even agree on what factors improve results and outcomes. In this article, I'll explore five key roadblocks to transformational change in capital projects, with the hope that, together, we can begin to dismantle them.

Roadblock #1: Over-Reliance on Best Practices

Many organizations look to best practices to improve organizational efficiency and profitability, and in many cases, this is a good first step. If your objective is limited in scope and you're aiming to improve a single deliverable or outcome — say, improve your front-end loading practices or inter-departmental alignment — then adopting a proven best practice will work.

Unfortunately, however, the sum of best practices does not equal transformational change in capital projects. We've learned this the hard way. In the early days, we thought that implementing a few key concepts and workflows would lead to improvements across an organization — but it takes far more than that.

Roadblock #2: Failure to Invest

Leaders need to recognize that change management is a project of its own, not a simple task that can be added to the margins of your project manager's day. The fact is that transformational change in capital projects requires a significant investment of time, money and human resources. Leaders must be prepared to invest.

What does this look like in practice? It starts with dedicated funding and adequate staffing — if you want to create change, you need boots on the ground. You need to allow time for preparation, you need to establish KPIs, monitor progress and required an outcomes-based assessment at each milestone — just like every other project you run.

Very few companies invest in transformational change for capital projects, and so very few companies succeed.

Roadblock #3: One-Size-Fits-All Training

Ultimately, you need your people to embrace transformational change. To do this, you need to define and deliver information about change in ways they can understand. This means that the same information must be delivered differently to executives, project managers, engineers, construction teams and field labor, among others.

To be clear, the information itself is standardized — everybody needs to be operating from the same playbook. But the way you communicate this information — the training format, the words, even the tenor — should change depending on who you're training. Why? Because you need buy-in from all levels, not just senior management.

> "The sum of best practices does not equal transformational change in capital projects." – OLFA HAMDI

> Change management is the discipline that guides how we prepare, equip and support individuals to successfully adopt change in order to drive organizational success and outcomes. – PROSCI

Roadblock #4: Unreasonable Expectations

Change takes time. When we talk about transformational change in capital projects, we're usually talking about large-scale organizational change like building a construction-driven planning and engineering culture, adopting Predictability Thinking™ or implementing Advanced Work Packaging. For a typical project or site, this can take between two and five years. For an international corporation with multiple sites around the work, it can take a decade.

If you think you're going to achieve transformational change with a few pilot programs over a couple of months, you're going to be disappointed. You can change a system or workflow overnight, sure, but changing people and business culture takes time.

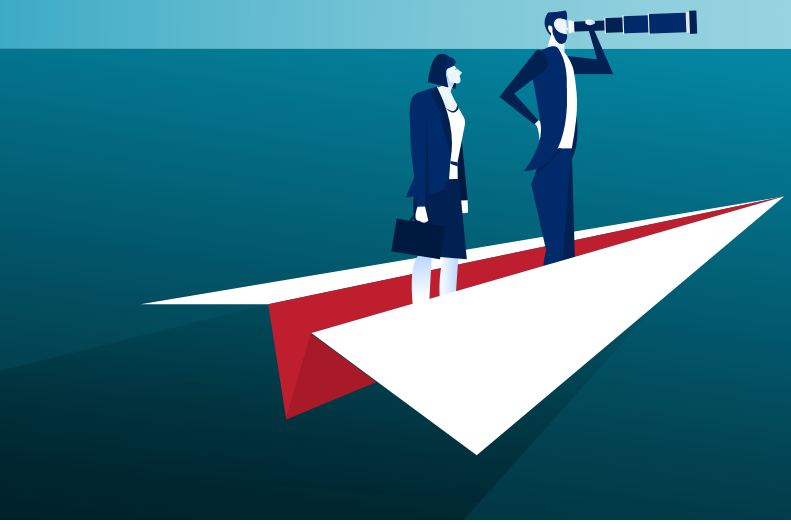
Roadblock #5: Unwillingness to Commit

I'm going to be blunt: Don't try to fake it. When it comes to transformational change in capital projects, leaders can't be talking out of both sides of their mouths, promoting change in public while clinging to the past in private.

Leaders have to be sold out for change, and they must be embarking on a change management project for the right reasons. If you're only adopting Advanced Work Packaging because you need to be able to put it on a project bid, your team will sense the absence of commitment and your attempts at change will fail. Change requires commitment and integrity.

Why Capital Project Executives Need a PREDICTABILITY MINDSET

BY OLFA HAMDI



LIKE ALL OF THE MOST POWERFUL LEADERSHIP APPROACHES, PREDICTABILITY THINKING™ STARTS AT THE TOP. OLFA HAMDI EXPLAINS WHY.

Capital project outcomes are affected by a constellation of factors, and chief among them is whether the leadership adopts a predictability mindset.

We've all worked on a project undermined by an ineffective contracting strategy, inadequate stakeholder negotiations or a general lack of clarity around cost and schedule tradeoffs. We've all known leaders who skimp on risk assessment and then get caught off guard by foreseeable problems. Sometimes, all it takes to sabotage predictable project execution is a leader who is too quick to pull the trigger.

All of these are failures of Predictability Thinking™, and they can be remedied by adopting a predictability mindset.

Here at Concord, we tell clients that unless the project executive is on board with Predictability Thinking™, the prospects for transformative change are dim.

This is Not Another Job for your Project Manager

Like all of the most powerful leadership approaches, Predictability Thinking™ starts at the top. A predictability mindset must be adopted by executives first, and managers second. Who qualifies as a project executive? Formal titles vary, but generally we're talking about people in or above the project sponsor, joint-venture director and venture manager roles.

In other words, Predictability Thinking™ begins with the people at the center of the business opportunity, the people who will be held accountable when the results — financial and otherwise — come in.

Ideally, the people in these roles are seasoned capital project executives with a robust understanding of every aspect of project development. Often, however, they're senior executives with little appreciable background in capital projects. Tell me which kind of person you have in your project sponsor role, and I'll tell you how predictable your project will be.

Part of the problem is that there is no obvious career path to becoming a project sponsor, and

> The magic recipe for predictable project delivery includes a project sponsor who champions Predictability Thinking™. ”
>
> – OLFA HAMDI

there are no best practices for cultivating project sponsors in an organization. Some forward-thinking companies have established their own protocols for grooming future project sponsors, immersing them in a culture of Predictability Thinking™, emphasizing a risk-management approach, and helping them to establish a solid understanding of capital project delivery systems by rotating them through key departments. Many, however, do not — and that's where the problems begin.

A Magic Recipe for Predictable Projects

The magic recipe for predictable project delivery includes a project sponsor who understands and champions Predictability Thinking™ at all levels. Sponsors can achieve this through their backgrounds, by collecting experience in all aspects of capital project delivery, or they can achieve it by making a conscious effort to study and understand all of the forces that impact predictable project delivery. That's why Concord offers the Predictability + AWP executive training.

Cheat Sheet: How do I Adopt a Predictability Mindset?

A blog post isn't long enough to explain all the ways in which a predictability mindset will impact your operations, but here are four elements that almost all predictability-minded leaders will employ.

1 | Staffing

Staffing is directly correlated with overall project success, and project leaders who have adopted Predictability Thinking™ always hire with predictability in mind. They also have a solid appreciation of the correlation between staffing and their capital project outcomes.

2 | Leadership

Executives, including project sponsors, must work to understand the leadership style of the managers who work with them and consider what it will take to mitigate weaknesses and gaps to improve predictable outcomes.

3 | Project Execution Planning

Sponsors with a predictability mindset appreciate the power of a good Path of Construction and have a clear understanding of how it correlates with key objectives like cost and schedule. While they do not lead the development of the PEP or the PoC, they are always involved in decisions requiring major trade-offs.

3 | Culture

The sponsor must understand the working culture between her teams, contractors, site and geographical location where the project is, and she must have the tools required to understand how that culture impacts predictable results.

Fundamentally, Predictability Thinking™ offers executives both the framework and the tools required to identify, understand and evaluate the known unknowns that impact project predictability. Don't let anyone tell you that you can achieve a predictability mindset with new software or a revamped org chart. A predictability mindset is about awareness, which requires just two simple things: education and experience.

A predictability mindset must be adopted by executives first, and managers second.

Ready to get trained in Advanced Work Packaging? Contact us today.

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