ISSUE 06 | BY CONCORD PROJECT TECHNOLOGIES INC.

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THE SMALL & SITE-BASED PROJECTS ISSUE

GETTING BIG RESULTS ON SMALL CAPITAL PROJECTS

THIS ISSUE

P. 14 SMALL CAPITAL PROJECTS: UPGRADE YOUR SITE CAPABILITIES

Supporting capital project managers

P. O4 HOW TO LEAD A CAPITAL PROJECT IN 2019

Construction is the new king

P. O5

TACTICS VS. PRINCIPLES IN CAPITAL PROJECT MANAGEMENT

Principles last forever

P. O3

15

HOW TO GET STARTED WITH SITE-BASED ADVANCED WORK PACKAGING

Five steps to transformation

<u>CONTE</u>NTS

EDITORIAL

Deliver superior performance on site-based projects by transforming your beliefs and behavior.

p. 01

THE 4 COMPLEXITIES OF SITE-BASED REVAMP PROJECTS

Simple steps for identifying and managing the additional complexities of modern revamp projects.

p. O2

HOW TO GET STARTED WITH SITE-BASED ADVANCED WORK PACKAGING

From discovery to rollout to change management, here's what you need to know to get started with site-based AWP today.

p. 04

HOW TO LEAD A CAPITAL PROJECT IN 2019

Our industry is in the middle of a fundamental paradigm shift. If you're not paying attention, you'll be left in the dust.

p. 06

TACTICS VS. PRINCIPLES IN CAPITAL PROJECT MANAGEMENT

Tactics are faddish, reactive and changeable. Principles last forever.

p. 08

ADVANCED WORK PACKAGING FOR SMALL AND SITE-BASED CAPITAL PROJECTS

This powerful work process can benefit projects of all sizes and scopes – all it takes is a little fine-tuning.

p. 10

A BETTER WAY TO MANAGE SITE-BASED CHEMICAL PROJECTS

To harness growth, make a meaningful investment in your project management capacity. Here's how.

p. 12

SMALL CAPITAL PROJECTS: UPGRADE YOUR SITE CAPABILITIES

The 3 simple steps directors can take to start supporting site-based capital project managers.

p. 14









BRIDGE THE GAP: BUILDING A CONNECTED TEAM FOR ADVANCED WORK PACKAGING

How smart capital project managers bridge the gap between engineers and construction.

p. 16

UNDERSTANDING THE CHEMICAL PLANT CONSTRUCTION LANDSCAPE

Fresh ideas and modern tactics for securing a competitive advantage in domestic and international chemical markets.

p. 18

EDITORIAL Roadmap to a Predictable Future

BY OLFA HAMDI



Deliver superior performance on site-based projects by transforming your beliefs and behavior.

What will it take to make site-based projects successful? How do we provide a strong return on investment? How can we deliver on-time? On-budget? The answer to all these questions depends on your commitment to a single word: predictability.

Here at Concord, we've long trumpeted the need for predictability in capital project management, but our recent work piloting Advanced Work Packaging on a site-based project for a global Owner company has served to reinforce its importance. As we completed this work, we challenged ourselves to refine our thinking around site-based projects, and to articulate that thinking for leading practitioners like you. This edition of *Velocity* is the result.

In our Small Is Beautiful edition, we've tried to give you a roadmap to predictability by answering some critical questions. Why is predictability important for site-based projects and how, as an industry, can we develop the leadership capacity to make it a driving force behind our work? How can we apply the acts of innovation and integration to make site-based projects a success? We can start by demanding accurate information throughout the project lifecycle, and then empowering our people to use that information to keep projects on track. Nine out of 10 capital projects go over budget, but seven out of 10 report no budget variance at the 50% schedule mark! This is not a competency problem, it's a behavioral one — people don't want to admit that the project has gone off the rails before even leaving the station, so they spend the first half of the project in denial and the second half in crisis management. We can do better by using work progress systems that reveal issues in real-time and force tough conversations about the reality of the project early on.

Next, we can learn how to lead in ways that support and encourage predictability. For example, revisit your standard procedures and take a look at your executive decisions. Are they set up to reward people and companies who deliver predictable results? If not, they should be. This doesn't just require a change in the operating manual, it requires a change of heart: If leaders don't believe that predictability is non-negotiable, they'll never inspire predictable behavior in their teams. This is because predictability isn't a project controls game, or a numbers game — it's about behavior.

Finally, we must put innovation and integration at the center of our site business plans. If you're not having predictable, superior results, you need to be in a state of continuous improvement.

Our mission here at Concord is simple but powerful. We aim to support the predictable delivery of construction projects and the sustainable growth of capital project organizations. We do this through management systems innovation, and through the implementation of transformative integration strategies such as Advanced Work Packaging. We're presently preparing for a forum on predictability and leadership for site-based projects, and we want to hear what people think of the strategies we've outlined here. If you're interested in contributing, please email ohamdi@tconglobal.com.

Here's to a predictable future,

Olfa Hamdi CEO Concord project Technologies

SITE-BASED REVAMP PROJECTS

SIMPLE STEPS FOR IDENTIFYING AND MANAGING THE ADDITIONAL COMPLEXITIES OF MODERN REVAMP PROJECTS

BY CONCORD RESEARCH TEAM

The capital projects industry is awash in advice about greenfield and megaprojects, the kinds of projects that make headlines and hold the promise of the future. The reality, however, is that process industry organizations spend between 30 and 65 percent of their budgets on small, site-based projects that ring up at less than \$10 million. Who is talking about those?

We are. If we want to transform the capital projects industry, we can't continue to ignore revamp strategy. Revamp project scopes range from replacing a few critical components to massive months-long refurbishing projects that transform facilities from top to bottom. Regardless of scope, however, the issues that arise during a revamp project are vastly different from those that attend a standard construction project.

Here are four critical complexities to consider when embarking on a revamp project.

COMPLEXITY #1

Curating accurate information about existing equipment and systems

This seems like it should be simple. Surely a facility that cost millions of dollars to build has a comprehensive and well-organized storehouse of equipment, systems and facility data? Not always. In fact, companies with high quality storehouses are the exception, rather than the rule. Beyond that, structures and equipment change over time, and often require review even when information about the facility is robust and well-maintained.

As a result, most revamp projects begin with the gathering of vast amounts of information, documents and data. This process is far more complex than most organizations recognize; it's also a critical foundation of revamp project success. There are many, many benefits to a comprehensive curation and assessment process, but chief among them is that high quality information helps prevent inaccurate (and costly) assumptions. Invest at this stage, and save.

COMPLEXITY #2

Navigating operations and shutdown

Generally speaking, revamp projects are undertaken in a plant that is actively transforming feedstock and producing a product. Much of the time, project teams will need to shut down the entire operation to execute the revamp scope, which almost always translates into hard losses for the Owner company. When the plant is not shuttered, the revamp project teams must work around product production teams, adding another layer of complexity to already-complex, highly technical projects.

Consequently, project managers need to be accurate about scope

and relentlessly focused on efficiency. Otherwise they risk significant and unnecessary business losses. The key is to get and stay clear on the opportunity costs associated with the project, and keep the bottom line in sight at all times.

COMPLEXITY #3

Safety in Action

Safety is always a chief concern in industrial facilities, but it is an area of special concern during revamp projects. Project teams often find themselves working on equipment while a plant is operating, introducing the risk that revamp work in one area of the plant will unwittingly impact work – and more importantly, workers — in another area. Teams working on equipment during a weekend or other brief shutdown will see operators returning to their stations in short order, increasing the safety risk. It's another added complexity for revamp project teams, and one that deserves our full attention.

COMPLEXITY #4

Integrating process engineering, operations and maintenance teams

Time and again, revamp projects stall or derail because process engineering, operations and maintenance teams are not effectively integrated into the project team. Many teams go through early definition without meaningfully consulting these important site experts; there may be touch points and occasional reviews, but that's not enough. These allies need full visibility and meaningful input on revamp projects, full stop.

This is not a simple matter of professional respect or deference.

Time an again, revamp projects stall or derail because process engineering, operations and maintenance teams are not effectively integrated into the project team.

Facilities can undergo significant changes in the space of a few months, and those changes may directly impact or undermine your construction schedule. In our experience, the development of formalized, effective communication channels can mitigate and even eliminate this risk.

First, make sure these channels are deliverable-driven — that is, that they don't consist of a meeting, but rather result in a deliverable, like a memo. Process engineers, operations and maintenance professionals need the ability to provide meaningful input, and they must be held accountable for providing this critical insight. Finally, these submissions are time-sensitive — they need to be made early, and they need to be ongoing, with clear protocols for updates.

Capital project professionals engaged in modern revamp projects must remain sensitive to these additional complexities, and should consider working with people who understand how to navigate the unique conditions that arise. Concord is a proven leader in piloting advanced work packaging on revamp projects, and we're committed to sharing our learnings in articles like this one. Now it's your turn.





ADVANCED WORK PACKAGING

FROM DISCOVERY TO ROLLOUT TO CHANGE MANAGEMENT, HERE'S WHAT YOU NEED TO KNOW TO GET STARTED WITH SITE-BASED AWP

BY CONCORD RESEARCH TEAM

Most site-based capital project leaders recognize the benefits of Advanced Work Packaging for their projects. Regardless of whether global or corporate offices are on board, they know they're responsible for improving performance and they know that AWP is the way to do it. But changing the way you work can be daunting, especially when there are millions of dollars on the line.

If you're feeling overwhelmed by the prospect of adopting AWP for sitebased projects, you're not alone. At Concord, we're fortunate to work on site-based capital projects with some of the world's top companies, and even these remarkable organizations face challenges when adopting new processes and technologies.

It can be done, and we can show you how. In this article, we'll share some of what we've learned about how to get started implementing Advanced Work Packaging on site-based capital projects.

Step 1 | Host a Discovery Session

Does this seem obvious? It's not. Leaders too often forget that people need time to get comfortable with new ideas. A free lunch with a short presentation is a low-key way to introduce new work concepts and emerging best practices. A webinar or afternoon meeting can work, too.

A simple discovery session like this gives your entire team an opportunity to digest and discuss, and your leaders and high-performers in particular will thank you for giving them an opportunity to explore these new ideas themselves before they're asked to get on board.

Who conducts this session? If you've got a respected internal advocate,

that's a great place to start. Make sure they have some training, or send them to a conference or off-site seminar to get some. Then let them talk their peers into exploring something new. Another great option is to bring in an Advanced Work Packaging expert to conduct the discovery session and answer questions. Better yet, do both.

The key objective: Help your people understand what AWP is and how it's transforming the capital projects industry. Give them some time to get comfortable with the idea.

Step 2 | Train Your Team

Next up: Introductory Training. On a small site, hold an Advanced Work Packaging training with project managers, engineers and construction leads. On a larger site, identify a pilot project and train only the project managers, engineers and construction leads who will work on the pilot.

You absolutely must work to create the conditions for success by providing your pilot team with all the resources and support they need. You cannot expect them to work in the old environment and succeed.



Step 3 | Give Your Pilot Everything it Needs to Succeed

This seems self-evident, but experience has taught us that it's not. Too often, leaders assume that smart people and a green light are enough to transform decades of entrenched work processes. It's not nearly enough.

You absolutely must work to create the conditions for success by providing your pilot team with all the resources and support they need. You cannot expect them to work in the old environment and succeed. If they ask for new project management software, faster computers, more people give it to them. Do it.

Why? Your pilot is building the workflows and templates that will form the backbone of your site-wide AWP implementation, and that alone is worth the investment. After all, you want those systems to be bulletproof before they're shared and replicated. Equally important, in our experience, is that your pilot sets the tone for how AWP is implemented on your site. If your pilot team has a positive experience — and if they share that experience with their colleagues your rollout will be far more effective.

Step 4 | Rollout

After your pilot has been operating successfully for a year or so, choose up to six projects that will adopt AWP next. Gather the key players from these new projects and do what we here at Concord call a Rollout Training.

A Rollout Training is critically different than an Introductory Training, because you're presenting Advanced Work Packaging as an established process that has been created by and for your company, leveraging industry best practices. The AWP protocols and processes that you share in your rollout training will be based on the first pilot experience and presented as a workflow that is "owned" by and unique to — your company.

This is important, because in order for Advanced Work Packaging to be transformative, it has to become part of the business process of the site — it can't be externalized. If you are working with an outside company to pilot AWP, be sure that you choose one that is committed to building and maturing your site capabilities, so that when they're finished, you can continue on your own without any additional support.

Step 5 | Manage the Change

The sum of your pilot projects does not equal transformation. Once you get to your second wave rollout, you'll need to support the transition to AWP with a sophisticated, company-wide change management effort. This effort includes everything from contract restructuring and technology purchases to implementing effective knowledge management and handling cultural resistance.

This final phase of your transition to AWP is perhaps the most critical. It's not enough to have people who know how to do AWP, or projects that are applying the AWP methodology. In order for Advanced Work Packaging to work effectively in the long term, the company as a whole has to operate in support of the methodology. Your investment in site-based change management services may be the best investment you make this decade.

The most important piece of advice we can give you is this: start today. The process of starting AWP on your site-based projects may be daunting, but it is the way of the future. There will never be a perfect time. Take the leap now, benefit from the first-mover advantage, and position your operation for success.

> The sum of your pilot projects does not equal your site's transformation

How to Lead a Capital Project in 2019

OUR INDUSTRY IS IN THE MIDDLE OF A FUNDAMENTAL PARADIGM SHIFT. IF YOU'RE NOT PAYING ATTENTION, YOU'LL BE LEFT IN THE DUST.

BY OLFA HAMDI

Suddenly, the cause of the cost and schedule overruns became glaringly obvious – we've been doing it all backwards. It has become impossible to ignore the fact that construction-driven capital projects work best. Reams of data show that even the most ambitious projects are more likely to be on-time and on-budget when everybody is working in service of the construction team. It turns out that the people wearing steel-toed work boots and neon-striped dungarees — the people who are actually building the capital project — should be the boss of us all.

Talk about a paradigm shift.

This painfully slow, collective realization is a fortuitous by-product of Advanced Work Packaging. We started out thinking that AWP was just a slightly different approach to what we'd always done. After all, the labor and materials (almost) always got to the site and the projects (almost) always got done, so we had to be doing something right. Right?

Wrong. Forcing ourselves to think about work packages in advance has revealed how shockingly bad we are at ensuring that our construction teams have the design, labor and material they need to get things built. Bringing construction leaders into the room during the planning phases compounded that realization.

Suddenly, the cause of the cost and schedule overruns became glaringly obvious — we've been doing it all backwards.

It gets worse: As an industry we've been focused exclusively on management, endlessly tweaking and fine-tuning and re-inventing the processes that get us from concept to construction. That's not enough anymore: It's time for leadership. Embracing a construction-driven paradigm requires a radical rethinking of the modern capital construction process. I started out by saying that the benefits of transitioning to a construction approach are impossible to ignore, and that's not just hyperbole: If you aren't transitioning, you'll be left behind.

As you embark on these changes, I'd like to propose a new way of looking a things — a new way of leading. It's impossible for me to say precisely what needs to happen in your unique organization, but these three "lenses" can help you see the road ahead much more clearly.

1 | The Team Leadership Lens

The leadership profile of every member of your team matters more than you think. In any organization, at every level, collaborative leaders are worth their weight in gold. Take, for example, two project schedulers, both equally proficient in Primavera. One delivers the schedule, but a second schedules the work and ensures that everyone engages with it. This is leadership: Going beyond pure technical competency to actively drive results.

The capital project industry needs to start identifying and investing in cultivating leadership skills at the functional/discipline levels not just the executive/leadership levels. Why? Because as you embark on this transitional journey, you need a team of leaders.

2 | The Cultural Lens

Starting now, Construction is King. From start to finish, everyone involved in a project should be working in service of the construction team. To say that this requires a paradigm shift is a profound understatement — the cultural transformation that needs to happen will touch every single project participant, from the Owner on down.

The biggest change will happen at the engineering level. Engineering teams are made up of highly educated, extraordinarily skilled, well-compensated professionals who bear a great deal of legal and practical responsibility for a project. These professionals must be persuaded that all of their work is in the service of the construction team. What will it take to change the culture?

One thing is certain, it won't happen on its own. Ultimately, leadership means that Owner companies will have to pull the collaborative and contractual levers they have at their disposal to make this transformation happen. Once Owner companies see the financial and other benefits of running a constructiondriven project, they will no longer be willing to work with engineering firms that do not understand how to work with and support construction.

The construction-first mindset is the way of the future.

3 | The Relationship Lens

We know two things: The relationship between the business side and the project side is a critical one, and that we need to bridge the gap between the two. When business leaders aren't talking to project leaders, they make important decisions without fully considering the project ramifications. High-functioning teams and organizations deserve better.

I'll be honest and say we don't yet have a clear picture as to how to accomplish this. Some of the most promising practices we've seen involve rotating people through business, sponsorship, project, turnaround, shutdown and marketing, to build leaders who understand the full scope of operations. These people are unique in the field, and they become soughtafter leaders with some of the most effective profiles we've seen. We'll keep you posted on any new findings.

In sum, the transition won't be easy. There are bumpy roads ahead, with blind curves and steep drop-offs. But organizations who start now are in the best position to leverage the power of transformation. Why not yours? •

TACTICS VS. PRINCIPLES IN CAPITAL PROJECTS MANAGEMENT

TACTICS ARE FADDISH, REACTIVE AND CHANGEABLE. PRINCIPLES LAST FOREVER.

BY OLFA HAMDI

Tactics are not enough to solve the problems we're facing in contemporary capital project management. We need principles. More to the point, we need to adopt principle-driven Advanced Work Packaging for capital projects.

You already know that AWP works: Studies have shown time and again that projects using AWP are more likely to be on-time and on-budget. But AWP isn't a mere tactic, a management fad that will be jettisoned when the next great idea or system comes along.

When implemented correctly, AWP is a reliable, durable, principle-driven response to deeply entrenched, industry-wide problems. It is the key to capital project system renewal, which is desperately needed in an industry where projects are perpetually late and almost always over-budget. The time is now. Here at Velocity, we started the discussion about the principles that underpin AWP, and we're committed to helping refine those principles over time. It helps that we are on the front lines of AWP implementation, supporting full-scale capital project system renewal at some of the world's most exceptional companies. We are sharing what we're learning, as we go.

The Problem with Tactics

Tactics are not solutions, but they're often implemented as if they are. We adopt a new technology, implement a new work process or engage a new tool, and we expect results. We fall for the marketing copy. We want to believe the hype.

Tactics rarely work because capital projects are complex, and no single technology or managerial approach takes all the moving pieces into account. The business context, company culture, contracting strategy and incentives — all of these will either help or harm the efficacy of your new tactics. If you're not respectful of everyone's interests, the project won't function well.

Why do we insist on maintaining this kind of piecemeal approach to capital project improvement?

At Concord, we take a different approach. We step back and look at the big picture. We bring together a multi-disciplinary coalition of experts to execute a principle-based, AWPdriven capital project renewal process. In addition to traditional subject matter experts, we focus on the alignment of interests in your organization, leadership development and overall organizational health, among other things. All of these have been ignored in our industry for far too long.

AWP: Not Just Work Packages

Advanced Work Packaging is not just about work packages. AWP



Tactics are not enough to solve the problems we're facing in contemporary capital project management. We need principles.



about profitability and growth. But predictability is a far more powerful principle to apply to capital projects, particularly those using an AWP approach. Why?

1 | Predictability helps the industry improve its basis for estimating.

If predictability is critical, you need solid estimates, and it makes sense to invest more in front-end definition.

2 | Predictability helps us gain clarity around our contractual relationships.

If predictability is our goal, then everybody who is part of the project must be predictable, too. We raise the bar simply by establishing this important principle as central to project execution strategy.

3 | Predictability nurtures and supports your most talented people.

Predictable leaders are successful leaders, and organizations that are committed to predictability in projects help their most valuable team players to gain success in their own careers.

There is no easy, one-size-fits-all fix for what's wrong with capital projects today. A holistic, capital project system renewal is essential. A principle-based, Advanced Work Packaging approach is the answer.

Start today. 🔍

implementation is an unrivalled opportunity for the Owners and the project team to build a coalition that will support more successful projects for years to come. We are closing in on a principle-driven approach that drives real, lasting success, and capital project system renewal is at the center of that approach.

With capital project system renewal, you're not just replacing one gear with another. You're testing the engine, introducing a new oil, you're trying new drivers and new roads. You're working to overhaul the engine as a whole so that it runs faster, works more predictably, and can take you farther than you ever imagined.

The thing is that even within the same company, every project is different. Teams change, people change, business objectives change — that is the reality of capital project development. The systems you have in place must be stable and reliable, but also flexible and responsive. The best way to achieve this is to have a principle-based project delivery system, so that your talented people can operate independently, confident in their understanding of the principles and their application in any number of varied situations.

The Predictability Principle

The most firmly established principle of Advanced Work Packaging is that it must always be construction-driven, and we have written at some length about other principles that drive this emerging approach to capital project management. Today I'm suggesting that predictability be added to our list of key principles that underpin an AWP project, which is to say that every decision made on an AWP project must be looked at through the lens of predictability.

Presently, the industry is relentlessly focused on efficiency. Most major thought leaders talk about tactical efficiency every time they talk

ADVANCED WORK PACKAGING FOR SMALL AND SITE-BASED CAPITAL PROJECTS



This powerful work process can benefit projects of all sizes and scopes – all it takes is a little fine-tuning.

BY THE CONCORD RESEARCH TEAM

There's plenty of evidence that Advanced Work Packaging can transform small site-based projects. The earliest case studies looked at large and small projects, and it's simply a failure of vision to think that this powerful, proven work process can only be applied to multi-billion dollar megaprojects. If you're managing a small- or medium-sized project, this article will introduce you to the simple steps you can take to make your project more efficient by applying the practices and protocols of Advanced Work Packaging (AWP).

Advanced Work Packaging Basics

Advanced Work Packaging, or AWP, is a construction-driven planning and collaboration system for building capital projects. The key word here is construction-driven: The entire AWP process is focused on creating a constraint-free work environment in the field. A constraint-free work environment ensures that field teams have the equipment, materials and instructions they need to complete their work. This reduces idle time, increases labour productivity and improves project outcomes — the hallmarks of an AWP project.

How do you achieve a constraintfree work environment? You start by creating detailed work packages very early in the project lifecycle, in advance. (This is why it's called Advanced Work Packaging). These work packages must be informed by a Project Execution Plan and a detailed Path of Construction, and supported by a comprehensive and disciplined stakeholder integration.

AWP is significantly different from standard work packaging, which is not entirely construction-driven. Standard systems bring in construction leaders just before the shovels go into the ground; by contrast, AWP requires that construction leaders be involved in planning from the outset. Standard systems organize work packages around engineering, design or a myriad of other drivers, whereas AWP requires that work packages be organized solely around the Path of Construction.

1 | Focus on Principles

Get familiar with emerging AWP principles and apply them to your current project management system. Focusing on principles helps you see what's most important (and what isn't); it also means you recognize that a management system is more than an assembly of tools, management and practices. This is by far the most important step.

For example, one key principle of Advanced Work Packaging is that all activity must be construction-driven. Look at your current practices through this lens and assess the degree to which each of your processes is construction-driven. Practical problems will be easy to see: If your construction team isn't involved until all the planning is complete, bring them in sooner. Other problems will be less obvious, but equally important: If your

To leverage all the benefits of AWP, you must not only adopt it at the project level, but at the institutional level as well.

materials management team is stuck working with lagging indicators, you field crews may not have what they need to get the job done. Look deep.

Ask your team: How does this principle translate across the project management system you currently have in place? What needs to change to bring the process into alignment with AWP principles? When you have your answers, take action on the areas that matter most to you right now. Perhaps you want to focus on those that are related to predictability and continuous improvement, or those that will reduce risk or enhance collaboration. Or perhaps you're focused on the bottom line.

Figure out what AWP looks like in the context of your small project, and begin.

2 | Simplify and Customize

The next step to reclaiming AWP for small projects is to undertake the difficult work of simplifying and customizing. Because it has so far been used mainly on large megaprojects, AWP has evolved into a necessarily complex system with many components, several layers and extensive collaboration requirements. You need to cull everything that isn't essential to your small or site-based project. This will differ depending on the organization you're working with and the project you're undertaking. There's no one-size fits all approach to simplifying and customizing AWP.

For example, consider your templates. A large project will have templates containing much more information than what is necessary for a smaller project. If you're embarking on a sitebased retrofit, for example, you may need a template with revamp-related information. The goal should always be to collect and share the information that is relevant to your project.

3 | Scale Your Strategy

Write this on a sticky note and tape it to your desktop: "Pilot projects alone do not drive transformation." Sure, you'll need to pilot your new construction-driven AWP processes. But don't fall prey to the all-too-common illusion that a handful of pilot projects will somehow drive a wholesale transformation of your work processes or your organization. They won't.

By the time your pilot project is wrapping up, you've done much of the heavy lifting in terms of thinking through your internal work processes and testing new approaches. Don't stop now. Your next challenge is to develop and execute an implementation strategy that looks beyond individual project processes.

Step back and look at the big picture. Consider the culture of project delivery in your organization, reassess your contracting strategy, think big. Then develop an implementation plan that addresses not only the project-specific process, but also the organizational processes as a whole. To leverage all the benefits of AWP, you must not only adopt it at the project level, but at the institutional level as well.

Early Adopters Get the Competitive Advantage

The benefits of Advanced Work Packaging are clear, and it's increasingly common to see AWP principles and practices applied to megaproject and major greenfield capital projects the world over. It's still uncommon to see smaller, site-based projects using AWP, and those that move first will secure a strong competitive advantage. Why not you?

A BETTER WAY TO MANAGE SITE-BASED CHEMICAL PROJECTS

To harness growth, make a meaningful investment in your project management capacity. Here's how.

BY THE CONCORD RESEARCH TEAM

If you're a small or medium-sized chemical company and you're growing, chances are you're hiring contractors. If you're growing fast, you're outsourcing even faster. This is standard practice and it often makes good sense, but the choice to hire out work has a dark side that few executives pause to consider: If your in-house team is working overtime to keep contractors on track, who is managing your business?

It's a fine balance, to be sure. Outsourcing is certainly the right choice for many growing businesses. But your in-house team knows your business best, and they're personally invested in your success. Long-term employees have an intimate understanding of your work, past and present, and you should be leveraging their insight and expertise as you develop your strategic plan for the future. At a certain point, smart Owners realize they need to liberate their best people from daily oversight so they can focus on laying the groundwork for growth - but how?

The answer: Invest in your in-house project management capabilities.

Investing in your project management capacity solves a lot of growth-related problems. You can continue working with existing contractors, benefitting from established relationships and shared knowledge. You won't have to disrupt internal or external workflows with new hires. Investing in project management capacity liberates your best people while simultaneously building your company's ability to successfully manage increasing workloads, so you can grow even faster in the future.

Here's the problem: Most companies don't know how to upgrade their project management capacity. It's not enough to simply hire a project manager; if you truly want to position your company for growth, you need to take a step back and revisit your entire project management system. The processes that served you well as a small or mediumsized chemical company simply will not be robust enough to handle the increased demands as you grow. Here's a simple approach that works with many of our clients.

The power of an independent gap analysis

We start by conducting an independent gap analysis. The idea here is to look for inefficiencies in your project delivery system, specifically as they relate to your most important business objectives. We ask: Does your project delivery system meaningfully support your operational, sales and growth goals?

These are critical questions because the essence of building a strong business strategy is choosing what not to do. Killing unnecessary or misaligned initiatives is especially challenging in organizations that have their sights set on growth. As Michael Porter said in his seminal Harvard Business Review article, What Is Strategy: "Among all other influences, the desire to grow has perhaps the most perverse effect on strategy. Trade-offs and limits appear to constrain growth." Precisely the opposite is true, he says: A leader's



job is not to orchestrate "operational improvements and make deals," but rather to be focused on "defining and communicating the company's unique position, making trade-offs, and forging fit among activities." That's what we're talking about here.

What does this look like in practice? You already know that your business manager and other key players are constantly making trade-offs on every project and initiative. How do they know what to prioritize, and what to let slide? If you haven't provided a clear strategy to guide them, they'll decide for themselves based on whatever factors are in play at the moment. Not only this is an incoherent and ineffective approach to business development, it's also bound to create epidemic levels of decision fatigue in your team.

Further, a proliferation of small cap projects that don't support your central strategy are like leeches on the business, sucking out time and energy that would be much more valuable if applied to critical initiatives. The gap analysis is the first step to solving this problem. You'll take a deep look at your project delivery systems and ask whether they're aligned with your key goals. If you want to get to certain markets faster than your competition, or you want to get your contracts signed faster, what do you need to do to get there? Another key question: How does your project delivery system compare to bigger, stronger organizations that are already doing what you want to do? The answers to these and a host of other key questions form the basis of a comprehensive analysis.

A Project Management System Upgrade Plan

From here, we develop a Project Management System Upgrade Plan that will help you streamline your efforts, cutting out unnecessary and misaligned initiatives and focusing on mission-critical work.

For the next two or three years, you work with a partner that will supplement you with external resources while simultaneously helping you to build your internal capacity. This approach has two benefits. First, the impact is immediate: Because your partner brings in external resources, you'll get quick relief from your heavy project management workloads. Second – and more important, in the long run — your partner works alongside you to execute the Project Management System Upgrade Plan and to build the integrated, internal capacity you need to manage that growing workload yourself.

This collaborative work must be finite. The goal: In two or three years, the partner company is gone, and your internal organization is more robust and capable of scaling to accommodate the right kinds of growth. This is what effective change-management looks like.

Invest in yourself. If you're a small or medium-sized chemical company and your best people are focused on managing contractors, it's time to take a step back and figure out how to get those people focused on strategy. We've provided the road map, all you need to do is follow it.

The processes that served you well as a small or medium-sized chemical company simply will not be robust enough to handle the increased demands as you grow.

SMALL CAPITAL PROJECTS: UPGRADE YOUR SITE CAPABILITIES

THE 3 SIMPLE STEPS DIRECTORS CAN TAKE TO START SUPPORTING SITE-BASED CAPITAL PROJECT MANAGERS.

BY THE CONCORD RESEARCH TEAM

Site-based capital projects are small but complex, critical business priorities for modern petrochemical companies. As an industry, we have given them short shrift. The unsung heroes who manage these initiatives don't enjoy the clean slate that greenfield and megaproject managers do — they must juggle established budgets, schedule around shutdowns and make do with existing engineering data and site access. In addition to this remarkable complexity, these projects are almost always undertaken to comply with environmental regulations or to improve (or maintain) processing capacity, which is critical to keeping the site operational and earning.

Yet, a recent analysis by IPA suggests at least 14% of site-based project managers need their capital project systems to be better adapted to their unique requirements. They also want more resources — like operations/production input and cost-controls — and more time for front-end definition.

Here are three simple steps that site and program/project directors can take to support site-based capital project managers. These steps will help your team achieve increased visibility, capture new efficiencies and measurably improve outcomes.

1 | Empower Your Construction Managers

The most powerful way to adapt a company's project delivery system to smaller site-based initiatives is to enhance the role of construction management across the lifecycle of the project. Front-end definition takes a great deal of time and resources, and smaller site-based projects are often pressed for both. If you make construction management a cornerstone of the project front-end development efforts, you'll leverage the unique insights and skills that construction managers bring to the table.

With construction managers at the helm, your team will naturally take a more construction-driven approach to project management, and you'll benefit from increased visibility and efficiency. Ultimately you may find — as we have that a production schedule driven by transparent, predictable work packages is more effective than one driven exclusively by a scheduling tool such as Primavera P6.

2 | Develop solid on-site construction management capacity

There is no substitute for Owner involvement when it comes to small, site-based project delivery. The people who fill key project roles - including project management, engineering management and construction management — should be trained in-house and working on-site. This means that, in many cases, the best decision is for Owners to hire and train their own people. It's the best way to build solid, reliable in-house construction expertise that will support your efforts to prioritize work over the long term. In turn, you'll benefit from greater project predictability.

3 | Start Measuring Project Execution Metrics

A recent examination of 100 sitebased projects found that just 37% met their success-based criteria which means nearly two out of three projects do not. Why?

Most sites collect and analyze a full suite of cost and schedule metrics, but execution and collaboration metrics are overlooked — and for good reason. Traditional project delivery processes for small-capital projects are not structured to support the measurement of the physical scope installation in relation to how teams collaborate to deliver these scopes. It's an old saw in business management, but it's true: What gets measured gets managed. You must measure execution and collaboration in order to manage them well. Consider how your site and sustaining capital projects might improve if you were measuring and managing the following basic execution metrics:

- What percentage of
 Engineering Work Packages
 (EWP) are ready on time?
- How many Construction
 Work Packages (CWP)
 are delivered to contractors
 on time?
- How long does it take to convert a CWP into Installation Work Packages (IWP)?
- What is the turnover rate on your IWPs?
- What are the quantities trends per scope elements? How do they compare to project estimates?

What is the turnover rate on your IWPs?

What are the quantities trends per scope elements? How do they compare to project estimates?

Collecting and analyzing metrics like these will give you unprecedented insight into where exactly your system is breaking down, and what can be done about it — especially if you're also gathering supporting data like decision context and rationale. This can be a source of competitive advantage for sites who work on enhancing the predictability of their project delivery.

With a construction-driven, metricsdriven management approach to your site projects, you'll enjoy more predictable project execution, fewer cost overruns, and a happier team.

Bridge The Gap:

Building a Connected Team for Advanced Work Packaging

HOW SMART CAPITAL PROJECT MANAGERS BRIDGE THE GAP BETWEEN ENGINEERS AND CONSTRUCTION MANAGERS

BY THE CONCORD RESEARCH TEAM

Solid workflows and supportive technology are critical components of a successful capital project, but ultimately we rely on people to make things work. Even teams that understand the benefits of a construction-driven approach will struggle to execute it if they're continually bumping up against entrenched interpersonal and interdepartmental paradigms. This is a particularly big risk when teams are using the Advanced Work Packaging methodology for the first time.

Here are four easy ways to can help your engineers and construction leads work together productively in these changing times.

1| Support engineers in their efforts to collaborate with construction

Historically, capital project engineers have had strong control over every aspect of front-end development, and established systems and protocols are built around their accountabilities. In a constructiondriven environment, engineering has to relinquish some of that control, and some of those systems and protocols will have to change. Beyond these organizational impediments, giving up control simply isn't easy for most people to do — particularly when engineers still shoulder much of the practical and legal risk associated with front-end development.

The solution is to establish a clear, explicit mandate that explains how, when and why construction managers will take a bigger role in front-end development. This is easier in an E/P/C setup, as the engineering company will comply if integration of construction needs is a contractual requirement. For consolidated EPC companies, however, it will be more of a challenge, since the paradigm shift has to happen inside the organization itself. The key: Write it down, provide training on why is construction-driven engineering beneficial for the entire project performance, and offer ongoing support for teams that encounter challenges.

2 | Support construction managers in the office

Construction managers typically come up on the field side of capital project execution and are most at home on an active construction site, where work is physical, visible, and typically done outdoors. A construction-driven project approach requires them to join the project at a much earlier juncture, when the work is done on paper and screens, and progress takes place in meetings, memos and invisible milestones. These are radically different working conditions that demand vastly different skill sets, and construction managers often experience a kind of culture shock. Companies simply cannot expect that someone who has spent decades in the field will transition effortlessly into an office environment.

The solution is to offer practical office support and leverage the construction manager's strengths in an office environment. Consider assigning a mentee who can assist with technology and help navigate office protocols while learning construction



management theory from a field veteran. Allow the Construction Manager to drive interactive planning sessions verbally, with support for PowerPoints, write-ups and flowcharts. Above all, be sensitive to the culture change and support the person in transition.

3 | Focus on active facilitation

When it comes to bridging the gap between engineering and construction, active facilitation means getting key people into the room and working to ensure that they're communicating effectively. If they're not, you need to force the interaction. During the initial meetings, the project manager must be clear that construction is in the front seat, right beside engineering.

The very best way to do this is by modelling and encouraging a new style of discourse. Engineers will need to learn when and how to ask for construction input, and construction managers will need to learn when and how to give it. Remember that, until now, these two parts of your team have operated independently from one another; there are no established communication protocols. Help your team navigate these first meetings by setting a high standard for respectful, productive engagement.

4 | Support people continuously, from start to finish

Engineers and construction managers have radically different experiences of a project. Engineers work in a conceptual way, in their heads and on paper. Construction managers work in a tangible way, with their hands and on-site. You can't integrate these disparate experiences on paper, in an organizational chart. Integration only happens in real life, between real people.

Project managers need to pay close attention to every single person in the org chart: How they view their roles, how they interpret what they need to do, and how they execute. Job titles and descriptions are important, but they don't say anything about a person's nature, strengths or skills. If you continually monitor the members of your team — especially the first time they execute a construction-driven AWP project — you'll be able to maintain a good balance between what they should be doing, what they want to be doing, and what they're good at. •



UNDERSTANDING THE CHEMICAL PLANT CONSTRUCTION LANDSCAPE

BY THE CONCORD RESEARCH TEAM



Fresh ideas and modern tactics for securing a competitive advantage in domestic and international chemical markets.

The shale gas boom that started nearly 15 years ago has upended global energy markets and transformed the chemical plant construction landscape. With the initial economic shock and first wave of investment behind us, what should investors, leaders and executives be focused on today? How can leading companies position themselves for growth and gain a competitive advantage in 2019 and beyond?

According to the American Chemistry Council, "plentiful and affordable natural gas supplies have transformed America's chemical industry from the world's high-cost producer five years ago to among the lowest-cost producers today." The United States, it says, now benefits from "a decisive competitive advantage" in making basic petrochemicals.

The statistics speak for themselves. The industry association counts 333 new chemical projects as directly attributable to shale gas development, generating a staggering \$292 billion in new economic output. By 2020, the council expects the industry to create more than 430,000 direct and indirect new jobs. Most notably for our purposes here, the explosive growth is expected to provide an opportunity to leverage \$202 Billion in new capital investment.

In this potentially hot global market, how can your chemical plant construction you gain a competitive advantage? Here are some tips.

Level-Up Your Local Risk Assessment

When selecting a location for your facility, make labor a key focus of your location-related risk assessment. Your ability to access resources is critical to your success — this is true during the construction phase, of course, when you will be competing for in-demand skilled workers. It will also be true once the plant is running.

The key is to undertake a comprehensive study of local labor conditions. You and your competition will examine base metrics around the number of local labour resources, their level of skill, and known competition. Beyond that, you will certainly want to ascertain whether there have been any local labor actions or strikes.

Smart companies, however, gain a competitive advantage by digging much deeper. How is labor organized in the region? Has that organization changed in recent months or years, or is it expected to change? Is union membership waxing or waning? What do you know about union leadership and local politics? Are there other "invisible" factors that are attracting people to the region, or driving them away? Insight like this cannot be gleaned from public records; it demands old-fashioned shoe-leather investigation and reporting. Your competitive edge will come from your willingness to invest.

Remember: Just because a previous plant has been successful in the region, doesn't mean yours will be. Labor conditions can change fast. Chemical plant investors and executives have learned the hard way that prices can spike in a hot market, wiping out returns overnight. When it comes to labor, chemical construction competes head-to-head with other kinds of industrial construction, and a hot market is always possible. Do your research and put your company on the strongest footing possible.

Mission-Critical Resources on the Global Market

There is no such thing as a local chemical market anymore. No facility, no matter how well-sited, will ever be immune to the vagaries of the global market. Whether you're buying major equipment from overseas or bringing in engineers from other countries, you will always be competing for at least some resources on a global level. Consider: How will international markets impact your ability to secure mission-critical resources?

Establish a Local Presence in Your Destination Market

If you're building a local chemical plant to serve an international market, be sure to have a presence in the destination market. This is especially essential for smaller companies that don't have a built-in "marketwatch" backup at the corporate or international levels. The important thing here is to establish what it will take to succeed in that unique, specific target market. The answers are not always obvious; the cultural, economic and legal contexts demand thorough study. Do not assume that what works in the United States will work in the European Union, in East Africa or in China. Do the legwork.



Your ability to get your product to market faster and cheaper can provide a significant competitive advantage in both the short and long term. In many cases, the best way to secure this advantage is by investing in experienced project management services. When you deliver the facility on-time and on-budget, you begin on solid footing — and you're far more likely to get your next plant financed, too.

Recognize that Experience isn't Always a Good Thing

Joint ventures are common in the chemical construction market, particularly between established companies looking to enter new markets. Be forewarned, though: A project team operating on behalf of a joint venture is as immature as a startup, and needs the same level of investment and nurturing — possibly even more.

Why? Because while each company has established systems and protocols for getting work done, the joint team does not. Unfortunately, many investors and executives assume that the teams will "work it out," and the result is often confusion, conflict and delay. The solution is to treat new joint venture like a startup, providing fresh training and close oversight to ensure that all members of the team understand the work process and deliverables.

> There is no such thing as a local chemical market anymore. No facility, no matter how well-sited, will ever be immune to the vagaries of the global market.

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Concord's mission has been to support the predictable delivery of construction projects and the sustainable growth of capital project organizations.

We do this through management systems innovation and the implementation of integration strategies. We have helped leading global Owner organizations to pilot Advanced Work Packaging (AWP) on petrochemical sites.

Our innovative platform, T-CON, is built to help teams and sites establish enhanced, accountability-driven collaboration.

Start your site transformation today.

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