



Concord Project Technologies Presents

Advanced Work Packaging Fundamentals

**SPEAKER: OLFA HAMDY | CEO,
CONCORD PROJECT
TECHNOLOGIES**

**MODERATOR: AARON
BARREIRO | CONCORD
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WELCOME TO THE CONCORD ACADEMY™ WEBINAR SERIES

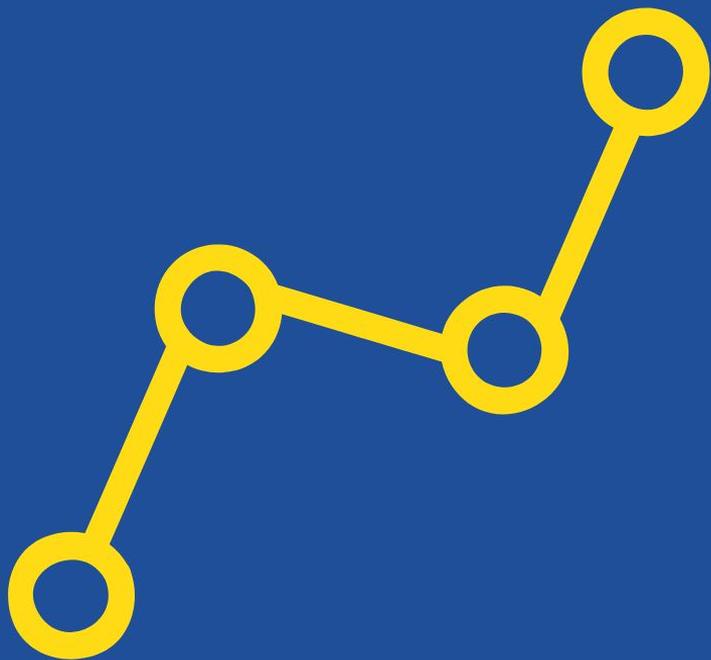
An Initiative Aimed At:

**SHARING
KNOWLEDGE**

**IMPLEMENTING
INDUSTRY BEST
PRACTICES**

but most importantly...





**IT'S AIMED AT
YOU.**

**Your Personal
and Professional Growth**

HOUSEKEEPING

The image shows a Zoom meeting interface. On the left, there are three main controls: 'Join Audio' with a headset icon and 'Computer Audio Connected' text below it; 'Share Screen' with a screen icon; and 'Invite Others' with a person icon and a plus sign. At the bottom, a dark toolbar contains icons for 'Invite', 'Manage Participants' (with a '1' next to it), 'Share Screen', 'Chat' (circled in red), and 'Record'. A red 'End Meeting' button is on the far right. On the right side, a chat window is open, titled 'Chat', containing two messages from 'Me to Everyone': 'Hello everyone my name is Aaron and I'm from Palo Alto, CA' and 'How do you develop the Path of Construction?' with a timestamp of '10:31 PM'. A yellow arrow points from the 'Chat' icon in the toolbar to the chat window, and another yellow arrow points from the chat window to the explanatory text below.

Opens Chat Messages – We ask you to direct both your questions and comments here

COVID 19 SAFETY AND WORK TIPS

★ 3 Other Areas You Should be
Cleaning:

Car (steering wheel, handles, shifter)

Entrance Door Knob to Your Home

Computer Keyboard and Mouse

★ Leaving Work at the Door Even When
You're Working from Home



THE CONCORD ACADEMY™

Features best-in-class training options for leaders who want to empower their people with cutting-edge, outcome-focused instruction

Enterprise training is done remotely, making it an on-demand option for projects and companies

10/10

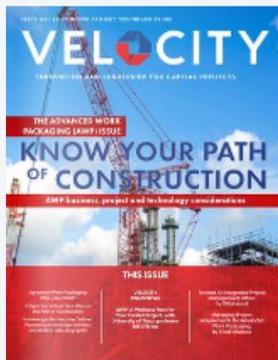
of participants developed a solid understanding of AWP after attending a Concord training



Concord experts received a 4.85/5.00 rating of the experience they provided to training participants

Free Resources from Concord

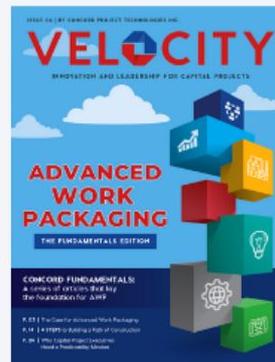
VELOCITY: ISSUE 7



AWP SPECIFIC INSIGHTS

Key insights from
the top experts at
Concord and from
across the industry

VELOCITY: ISSUE 8



YOUR PRESENTER:

OLFA HAMD

SPEAKING ON:

AWP FUNDAMENTALS



Olfa Hamdi is a global expert in the strategic, construction-driven planning and execution of capital projects. She is an American-trained engineer, inventor and Silicon Valley entrepreneur who founded the Advanced Work Packaging Institute before co-founding Concord Project Technologies in 2016. Olfa is a recognized international expert in the field of project management and a credited co-author of the three-volume industry bible on Advanced Work Packaging implementation. She led multiple audit missions of capital projects while working with Independent Project Analysis. She holds a Master of Science in Capital Project Management from The University of Texas at Austin, a Master of Science in Engineering from Ecole Centrale de Lille, and a graduate degree in Alternative Dispute Resolution for construction disputes from Texas School of Law.

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ISSUE 08 | BY CONCORD PROJECT TECHNOLOGIES INC.

VELOCITY

INNOVATION AND LEADERSHIP FOR CAPITAL PROJECTS

ADVANCED WORK PACKAGING

THE FUNDAMENTALS EDITION

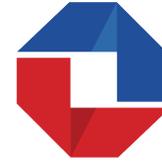
CONCORD FUNDAMENTALS:

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



CONCORD
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Introduction to Advanced Work Packaging Fundamentals

By Olfa Hamdi

This is an introduction to Advanced
Work Packaging (AWP) and the key
principles driving it.

// Designing a construction plan without accounting for constraints is like planning to climb Everest without accounting for the cold - failure is inevitable.

Olfa Hamdi

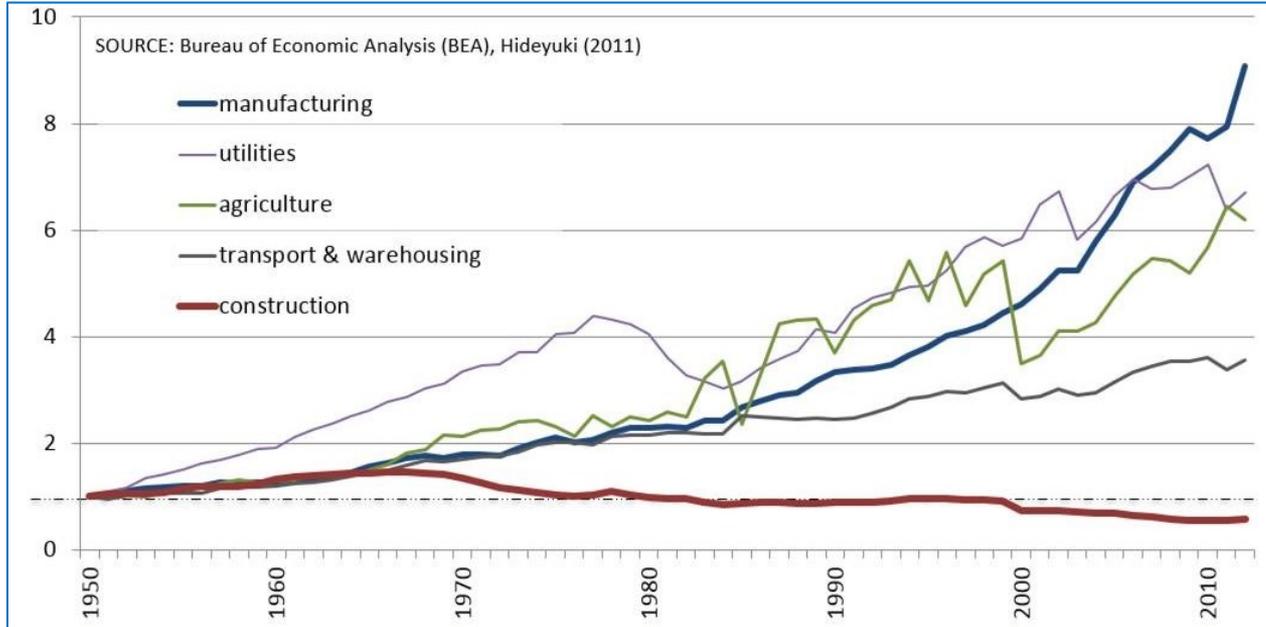
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We will cover 4 key questions:

1. What problems does AWP solve?
2. How is work structured in the AWP system?
3. What is the Path of Construction?
4. How can I get started with AWP?

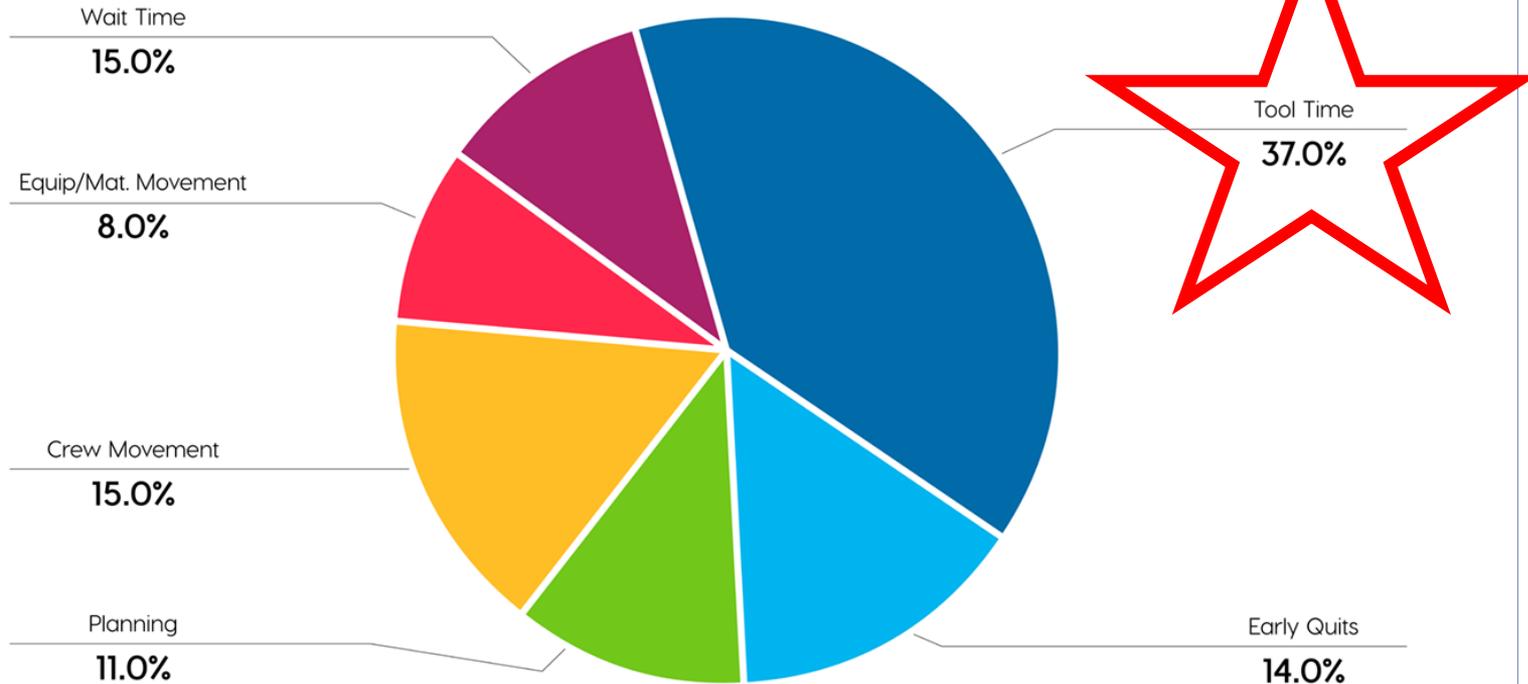
1. What issues does Advanced Work Packaging help solve?

Issue 1: Construction Productivity Performance

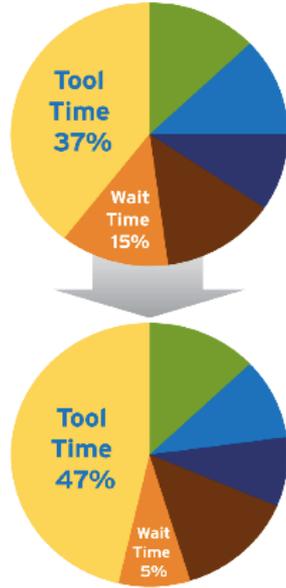


- Chart shows that construction productivity has been in steady decline for decades.
- Construction productivity is correlated with field safety.
- Labor costs remain one of the highest cost items in capital projects. Improving productivity is also achieving major capital gains.
- Decreases in crew productivity mean that projects take longer to complete, while the total installed cost (TIC) of the project inevitably increases.

Percentage of Time Spent – Crew



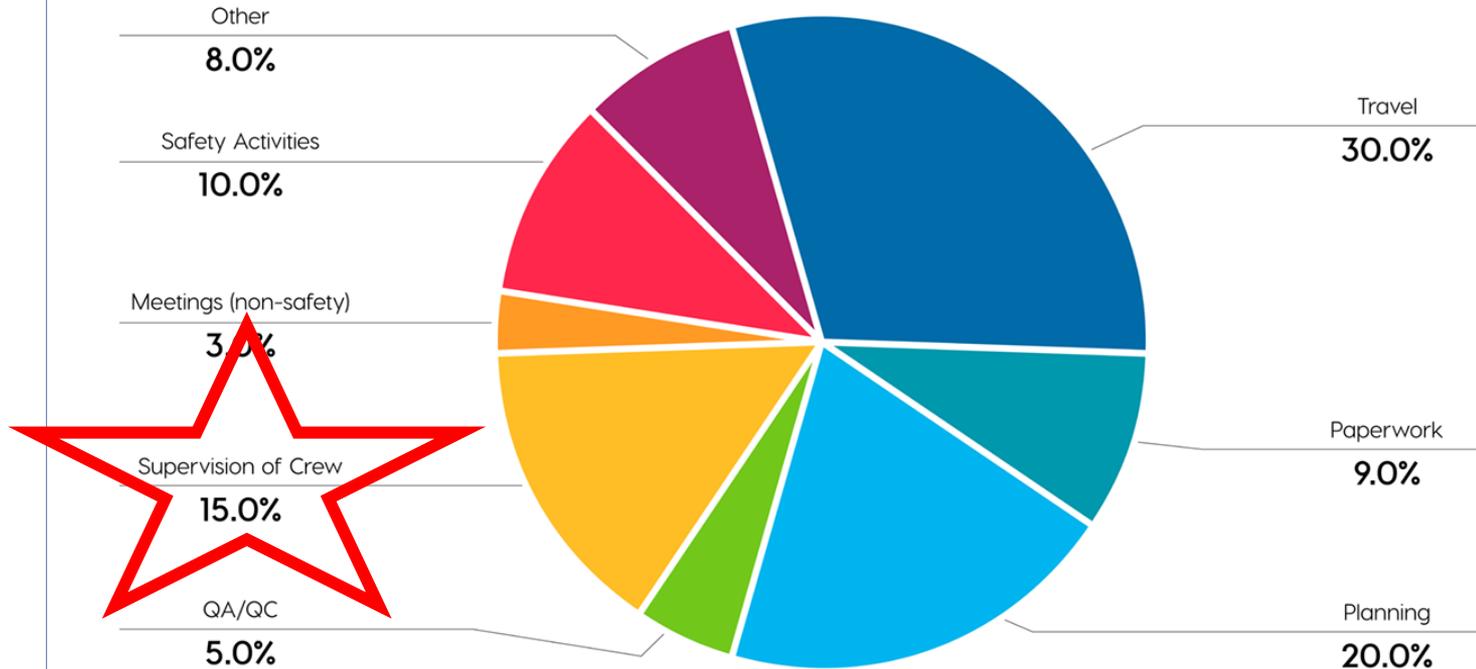
Construction Management & Workforce Planning— Driving Craft Productivity in Nigeria



A 10% increase in tool time
results in a 25% improvement
in productivity



Percentage of Time Spent – Foreman



Your field performance is correlated with your office performance



- ⊙ Scope changes / execution changes
- ⊙ Poor risk management
- ⊙ **Late engineering**
- ⊙ Late procurement
- ⊙ **Poor sequencing**
- ⊙ **Missing Construction-driven planning**
- ⊙ High Turnover
- ⊙ Poor definition
- ⊙ Inadequate staffing and lack of competencies



Recordable incidents
Poor labor productivity
Low direct supervision time
Unpredictable construction

Source: Hamdi, 2013, UT Austin

Issue 2: Predictability & Engineering Performance

- Slip in engineering is now approaching an average of **40 percent** on projects large and small

(Source: IPA, 2017)

- “The most serious problem facing capital projects in the process industries is timely and accurate engineering”

- Since 2008 every measure of engineering quality has declined: error rate, field engineering adequacy, and engineering slip

(Source: IPA, 2017)

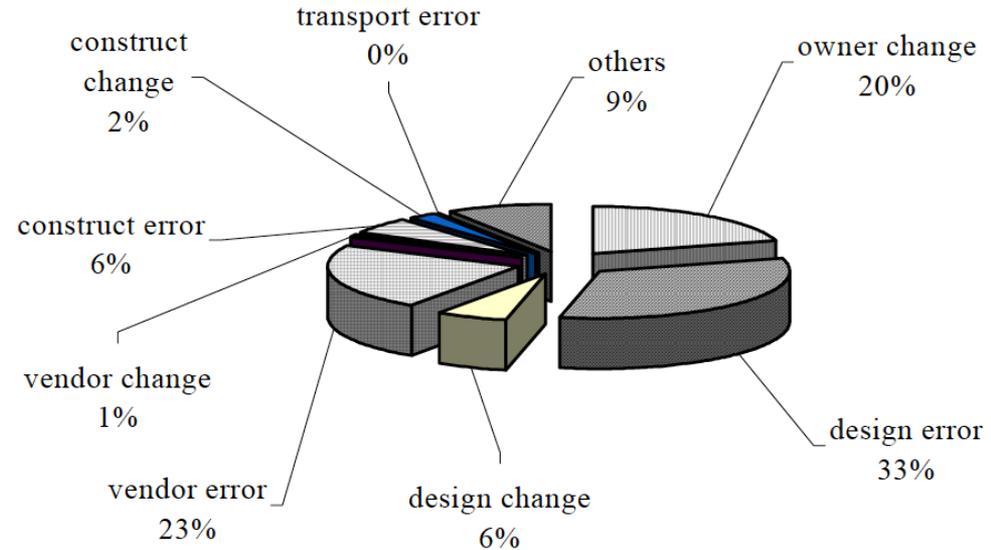


Figure 5.7. Sources of Field Rework *Source: CII, 2014*

Other AWP Documented Benefits

- 1 | Improved Field Safety And Productivity
- 2 | Predictable Project Outcomes
- 3 | Fewer Change Orders
- 4 | More Business
- 5 | Improved Human Resource Management
- 6 | Stronger Bottom Line

2. How is work structured in the AWP system?

Breakdown of packages

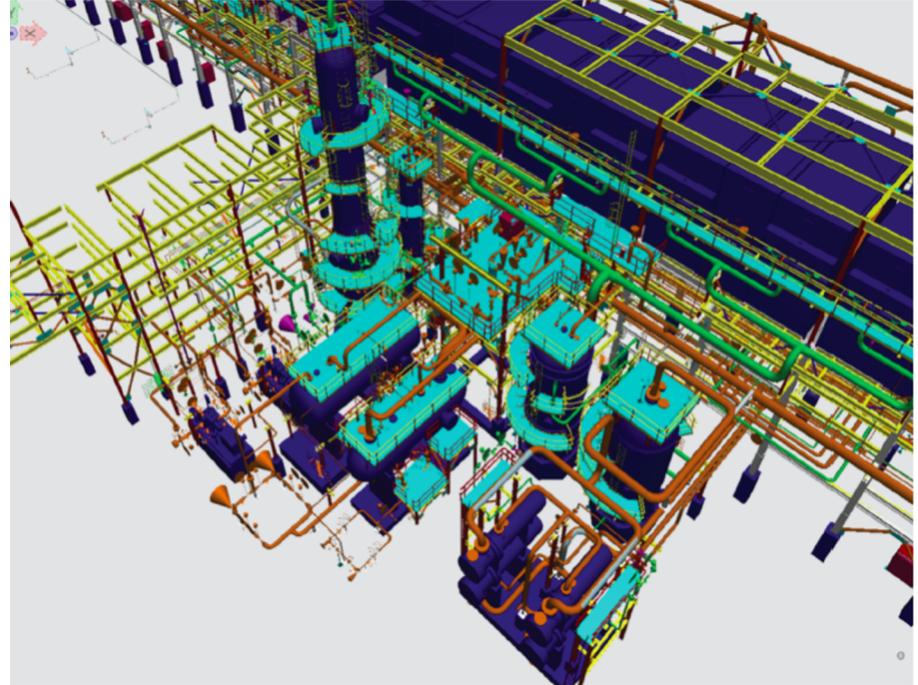
Relationship to stage gate system

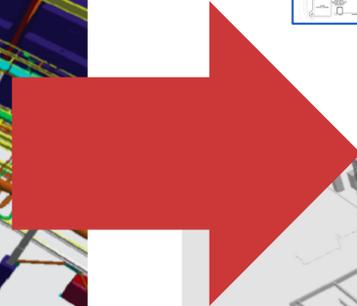
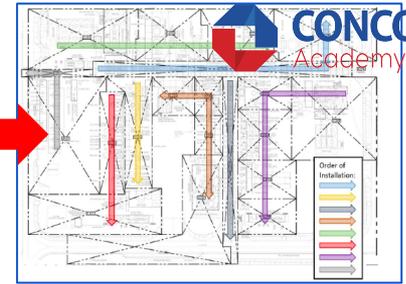
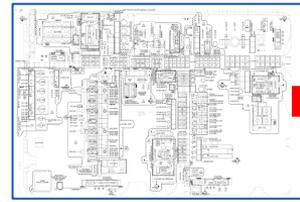
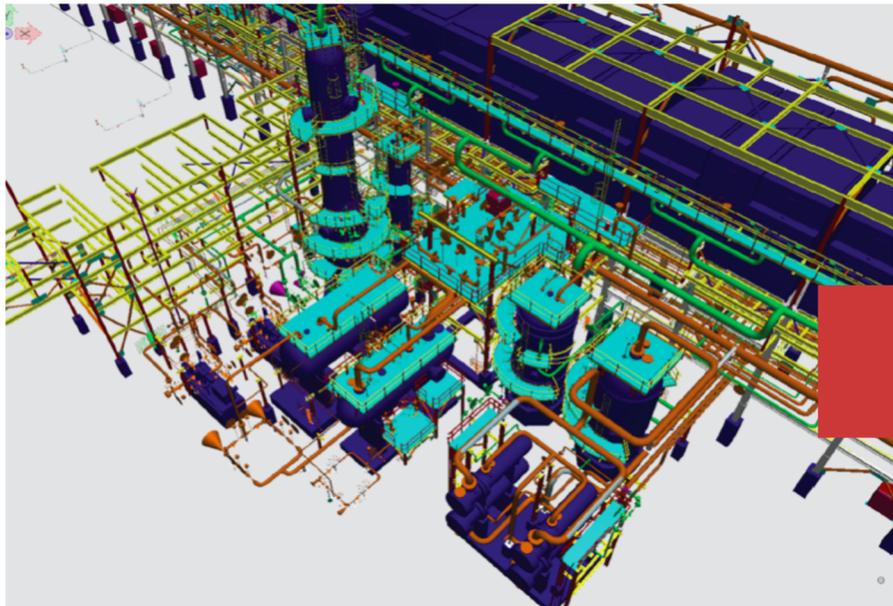
AWP Breakdown: What is the logic of construction?

Advanced Work Packaging is the overall process flow of all the detailed work packages (CWPs, EWPs and IWPs).

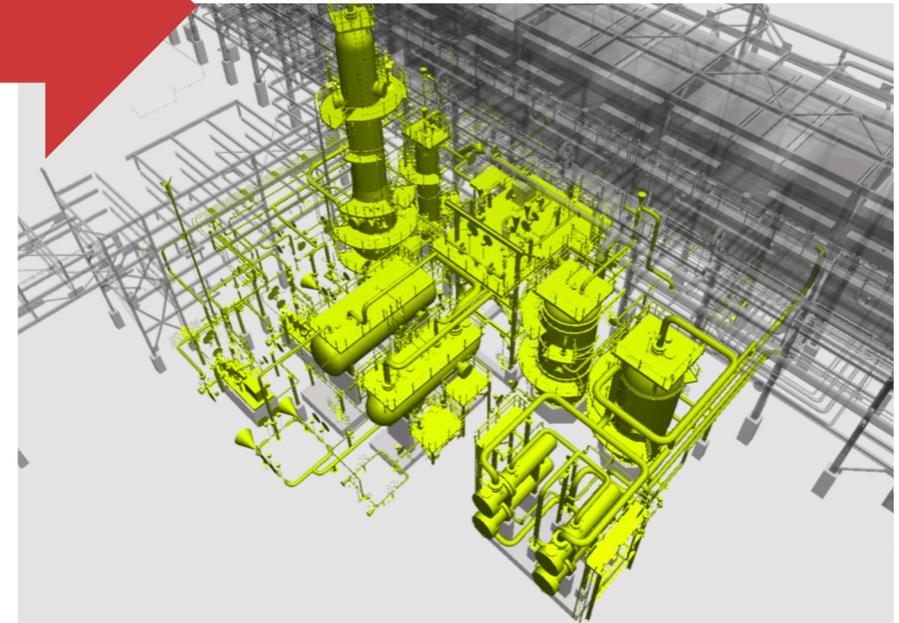
It is a planned, executable process that encompasses the work on an engineering, procurement and construction (EPC) project, beginning with initial planning and continuing through detailed design and construction execution.

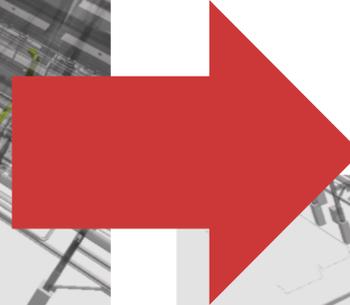
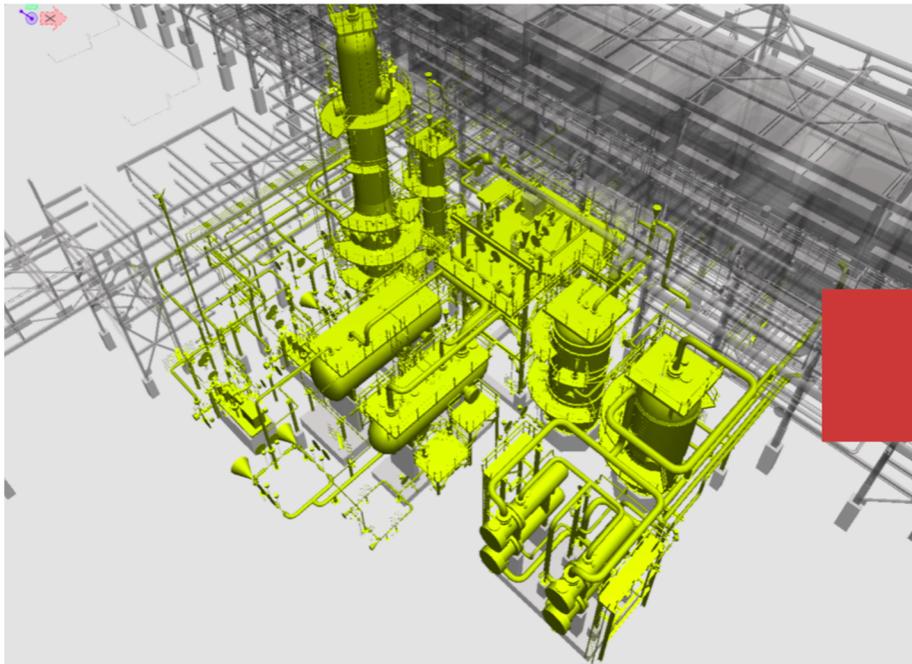
(Construction Industry Institute (CII), 2013).



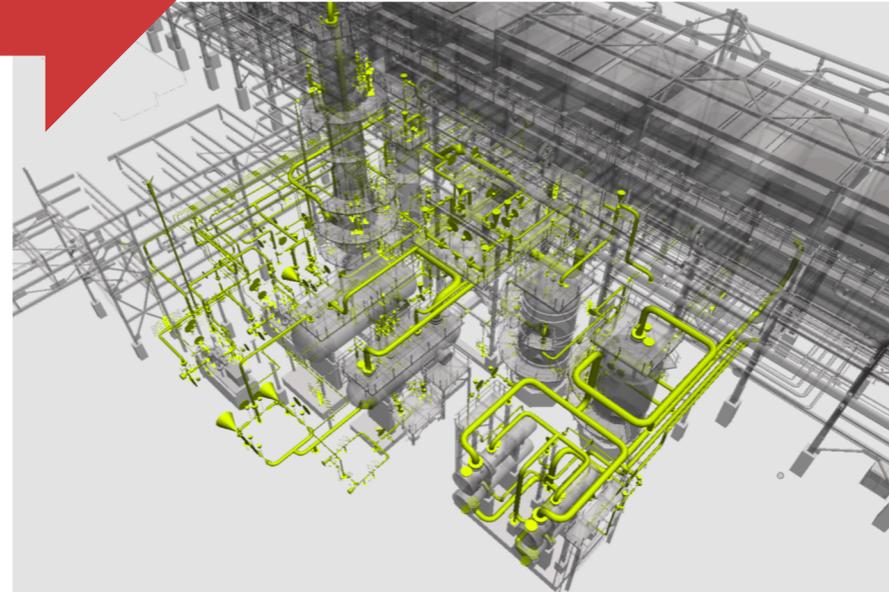


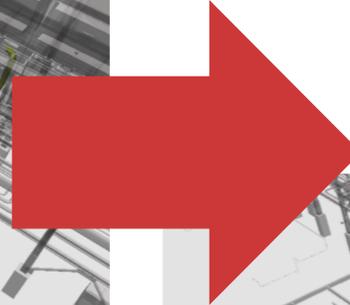
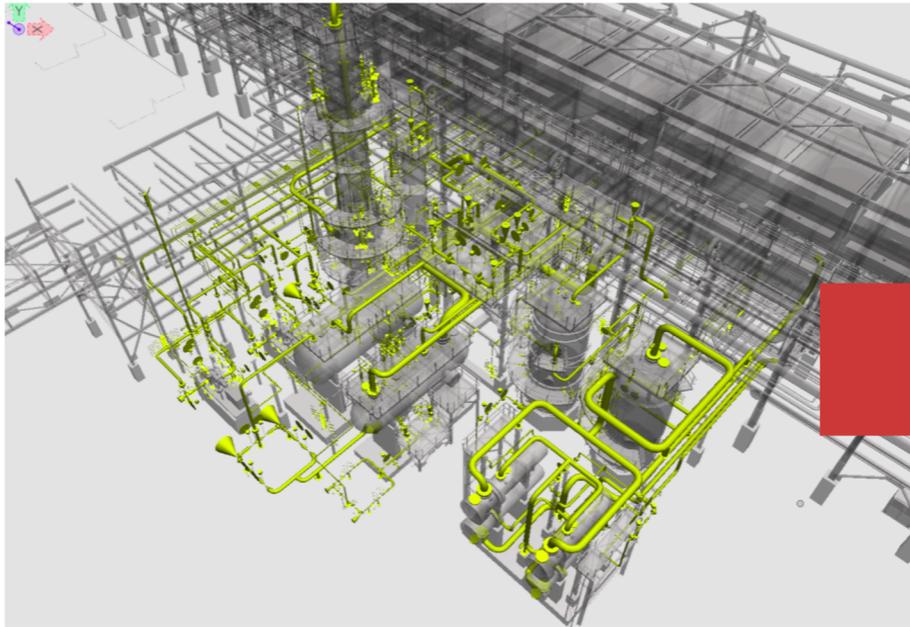
Construction Work Areas - CWA



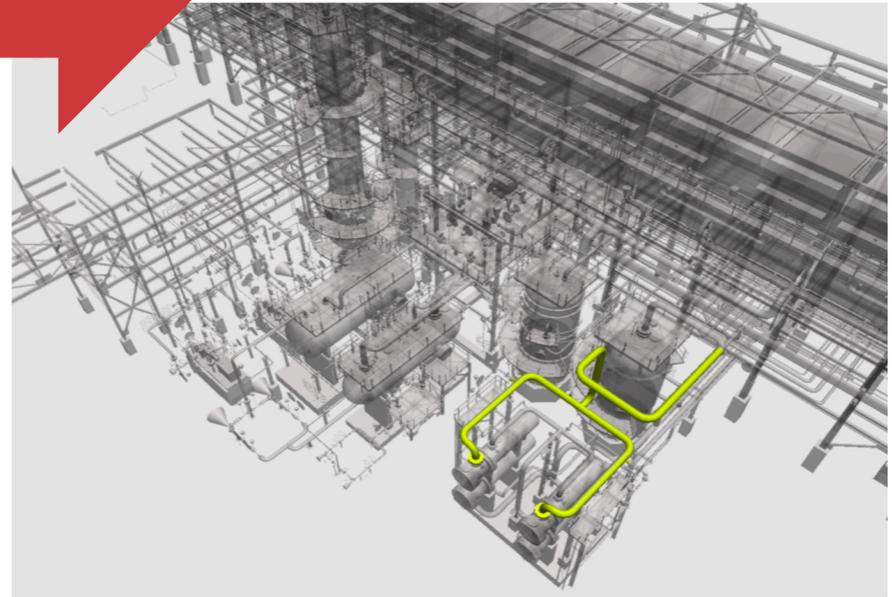


**Engineering Work Packages – EWP
=
Construction Work Package – CWP**

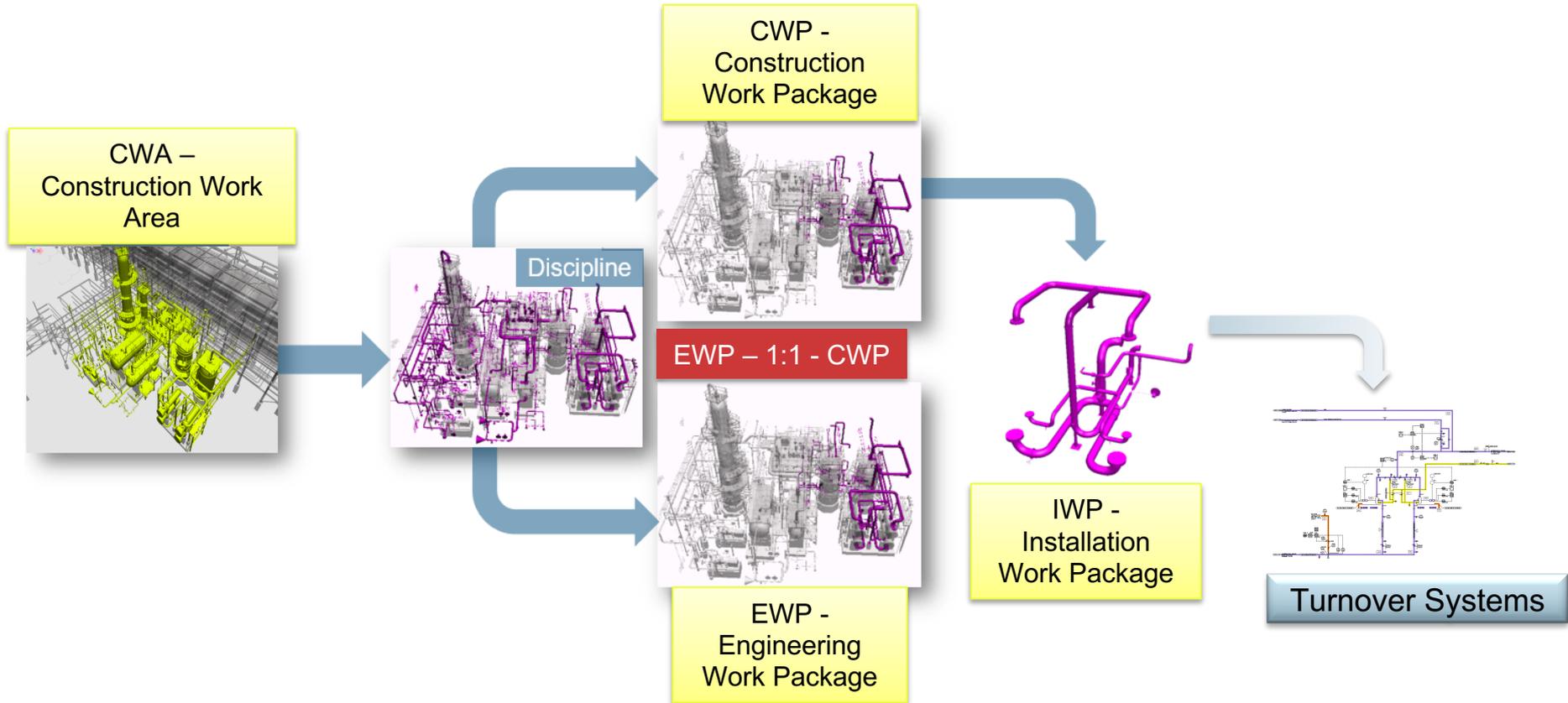




Installation Work Packages – IWP



AWP : Work Package Breakout



AWP in Relationship to the Stage Gate System

Gate 2

Gate 3

Start of Construction

**Not all companies, industries, construction sectors
apply AWP in the same way!!!**

**However, it is important to pay attention to principles
driving AWP and opt for Principled Project
Management and engage in Predictability Thinking**

Front End Planning

Detailed Engineering

Construction
Commissioning
Start Up

Key AWP Principles: Beyond the structure

- Thinking with the end in mind
- Construction-driven planning
- Construction-driven engineering
- Procurement alignment with the Path of Construction
- Logical construction-driven WBS
- Construction leadership and involvement in early stages
- Owner/Engineering alignment on engineering schedule
- Enhanced planning resources for field operations > workforce planning
- Constraints Management
- Accountability driven collaboration: Disciplined collaboration

<https://tconglobal.com/concord-fundamentals-adopting-a-construction-driven-mindset/>

AWP is a set of tools and tactics.
Predictability Thinking™ is an operational paradigm that underpins AWP: A principle-driven approach to thinking about capital project execution that goes beyond tools and tactics to deliver comprehensive, transformational change.

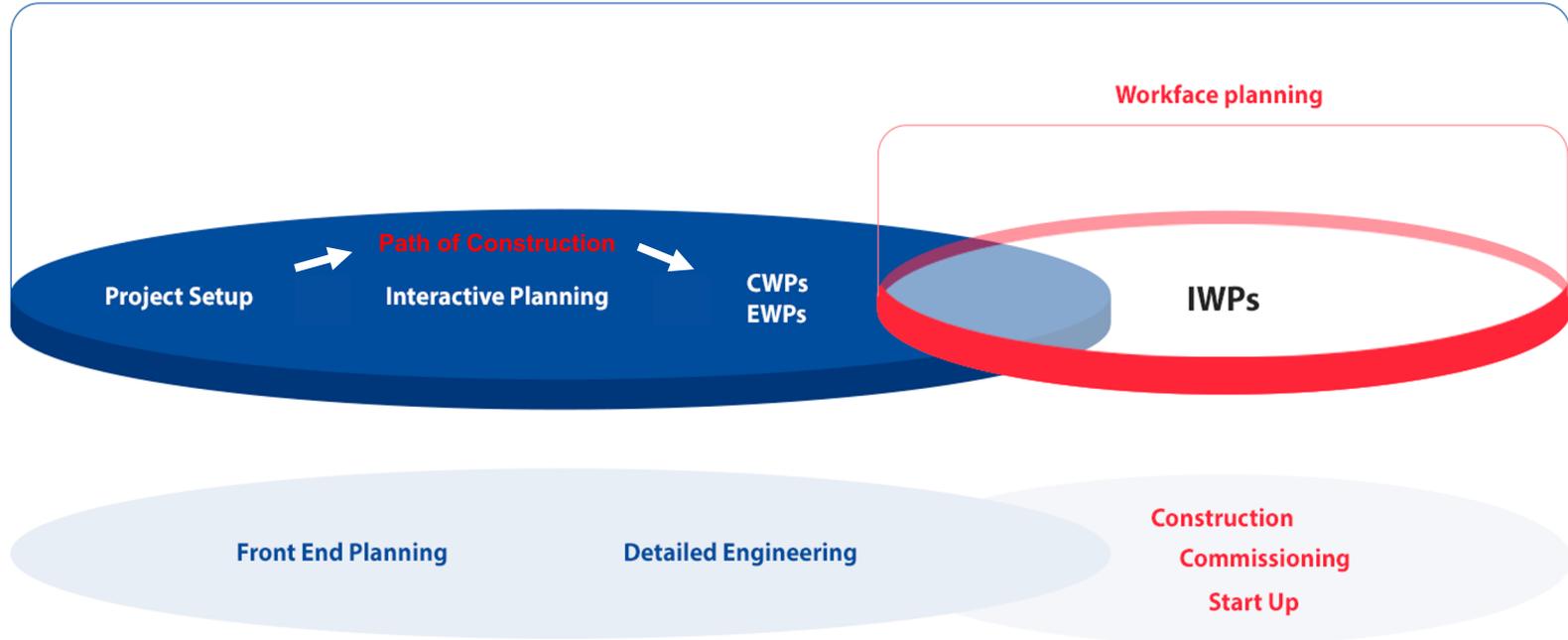
Olfa Hamdi

 Tweet

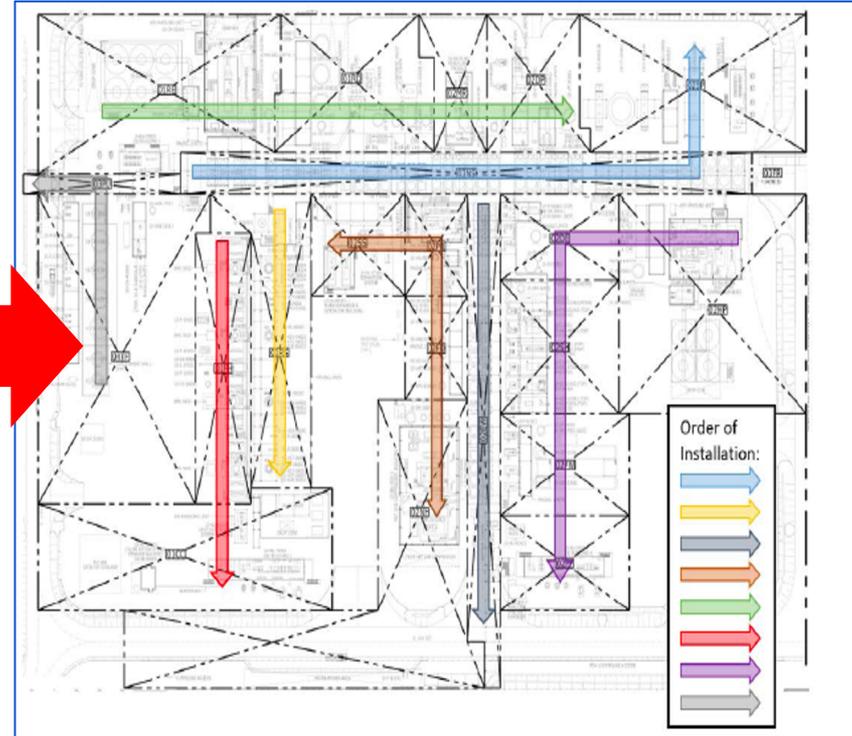
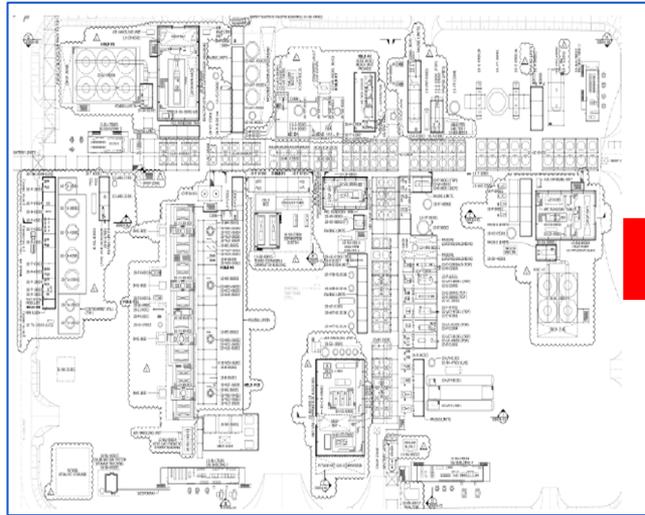
3. What is the Path of Construction?

The Path of Construction: A Critical Deliverable

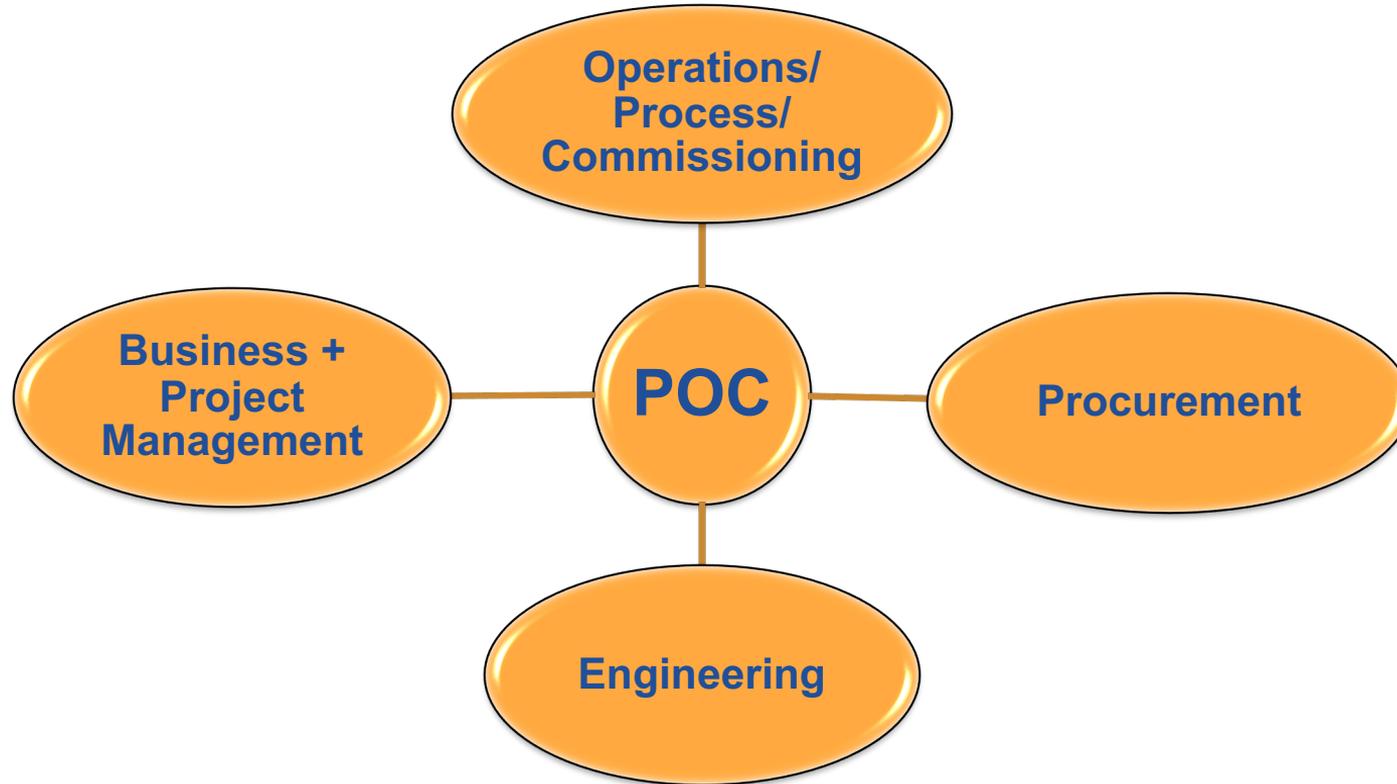
A Path of Construction is a visual representation of the project scope areas (silos) and sequencing within the plot plan.



The Path of Construction: A Critical Deliverable



Who gets involved in the Path of Construction?



Construction



The quality of the POC is an indicator of the likelihood of success of your project in terms of predictability of outcomes

4. How can I get started with AWP?

An AWP Implementation is a Journey

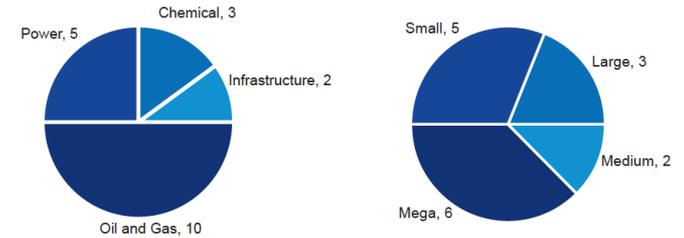
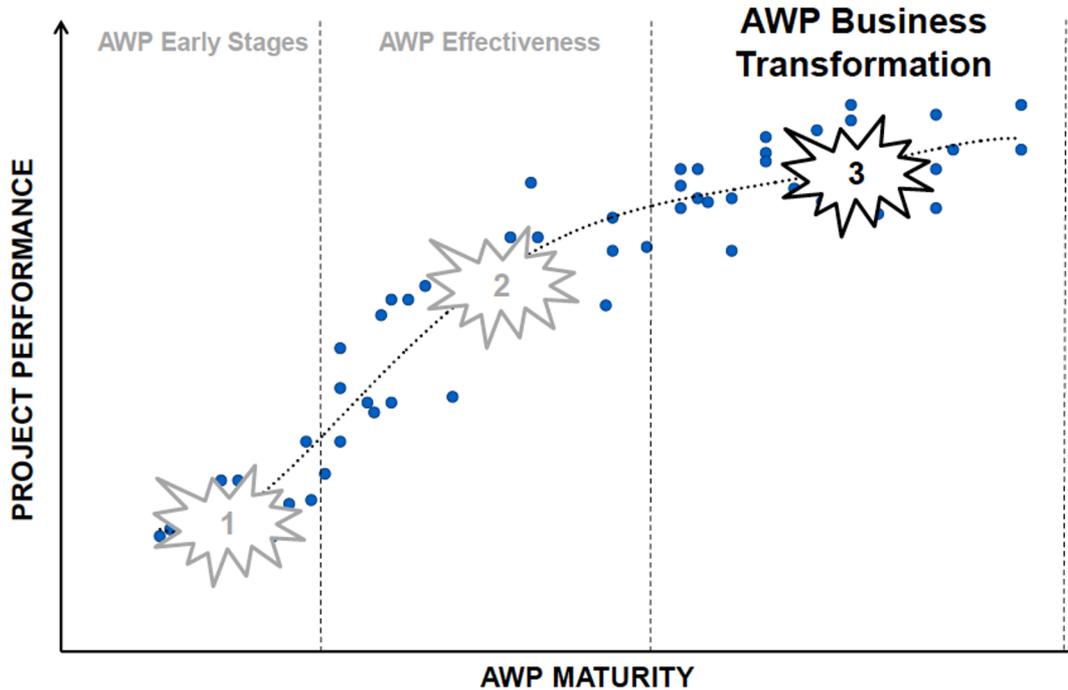


Figure 4 - Case Studies by Sector (left) and by Size (right)

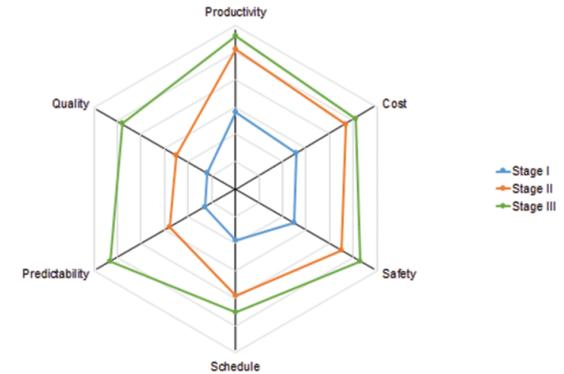


Figure 10 - Performance Break-out per Maturity Phase

AWP Implementation Evidence (CII)

Maturity Stage			
Performance Dimension	1-AWP Early Stage	2-AWP Effectiveness	3- AWP Business Transformation
Productivity	Around 10% increase	Around 25% increase	Around 25% increase
Cost	Project on budget	TIC 10% below estimates	TIC 10% below estimates
Safety	Zero lost-time accident (TRIR below company average)	Zero lost time accidents (TRIR improves with sporadic first-aids and near misses.)	Zero lost time accidents (TRIR improves with sporadic first-aids and near misses.)
Predictability	Significant deviation from baseline estimates	Minor changes to execution schedule	Execution schedule to plan
Quality	Rework in line with previous quality performance	Rework slightly below company's average	Rework substantially below company's average; substantial reduction of RFIs
Schedule	Project on schedule or experienced minor delay	Project slightly ahead of schedule during execution	Project slightly ahead of schedule during execution

Step 1: Training, training, training

Velocity's AWP Fundamentals Issue

<https://tconglobal.com/wp-content/uploads/2020/04/Velocity-Issue-08.pdf>

Velocity's Path of Construction Issue

https://issuu.com/velocityquarterly/docs/the_aws_issue_-_velocity_issue_04_c946608e307196

*Industry Reference Library
Concord Online AWP Space*

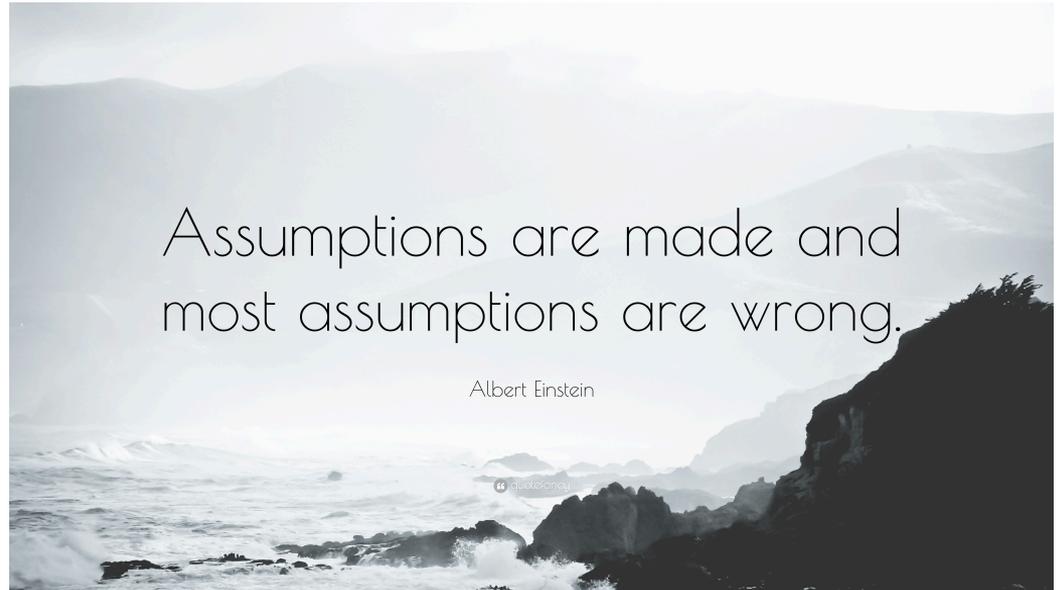
<https://tconglobal.com/category/advanced-work-packaging/>

*COAA Advanced Work Packaging Templates
and Tools*

<https://www.coaa.ca.ca/library/>

AWP Institute Space

<https://www.workpackaging.org/resources>



Understand Lessons Learned & Get Ready

You will not get it all right the first time.

This is not a pass/fail concept. During the first implementation, you will make mistakes. You will learn a lot of lessons. The key is implementing those lessons, and doing it better on the next project. And the next. And the next.

Make sure you have management/executive buy-in.

Training will be key. If management understands the need for AWP, and what you hope to achieve, their support will be greater.

Timing is critical.

Many AWP implementations fail because they start too late. The purpose of AWP is to drive construction planning into the early engineering stages. If you try to do this when detailed engineering is well underway, your ability to influence the sequence of deliverables is greatly diminished.

Working with contractors, intent is crucial.

Train the contractors to the same degree as the project teams. If they understand the reasons for implementing it, and can fully recognize their role in it, they will buy in quickly and sincerely.

Step 2: Consider a Maturity Assessment

The goal is to develop a comprehensive understanding of your site'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.

The Planning Pillar

The Engineering Pillar

The Construction Pillar

The Collaboration & Team Pillar

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

<https://tconglobal.com/are-you-ready-for-advanced-work-packaging/>

Thank You!