

Project Production Management – Exploring Improvements in Capital Project Delivery

Capital projects are the life-blood of a great many businesses – they enable growth, they provide new sources of revenue and they renew the assets that keep those businesses operating efficiently and effectively. This puts project management at the heart of delivering the business outcomes that these owners, and the delivery organisations that serve them, are looking for. However, traditional project management is not always as effective at delivering the project outcomes that clients expect and that delivery businesses require to remain profitable and competitive. That is not to say that traditional project management approaches have not generate some highly successful results; however, the myriad of mediocre projects and the all-too-common “bad project” suggests that there are opportunities for development and improvement. Beyond this, there are those projects of such high criticality and/or delivery complexity that we recognise that they call for an extraordinary approach to management if they are to be successful.

The Blind Spot...

We believe that one of the key shortcomings in traditional project management is that its systems and processes are focused on creating a “static plan” (for time, cost, resource deployment, etc) then measuring progress against that plan. There are limited structured approaches to make the execution of work conform to the plan and/or refine the plan to optimise project outcomes. This lack of dynamic planning and control of work execution (or production) is a significant gap – a “blind spot” – in the dynamic project environment. We look to fill this gap with what we call “production management” – improving the efficiency and effectiveness which we design, construct and operationalise projects.

What is Production?

Production is the sum total of all the activities, and their interactions, that go into creating the operational project – the “product” that results from a capital project. Sometimes referred to as “value streams”, it is the network of value-adding activities (including design engineering, procurement and supply of materials/equipment, construction and commissioning) and non-value-adding but necessary activities (including permits, quality documentation and

approvals) as they flow together to achieve the project outcome. In short, it is the day-to-day execution of project work.

Creating Competitive Advantage Through Project Delivery Performance

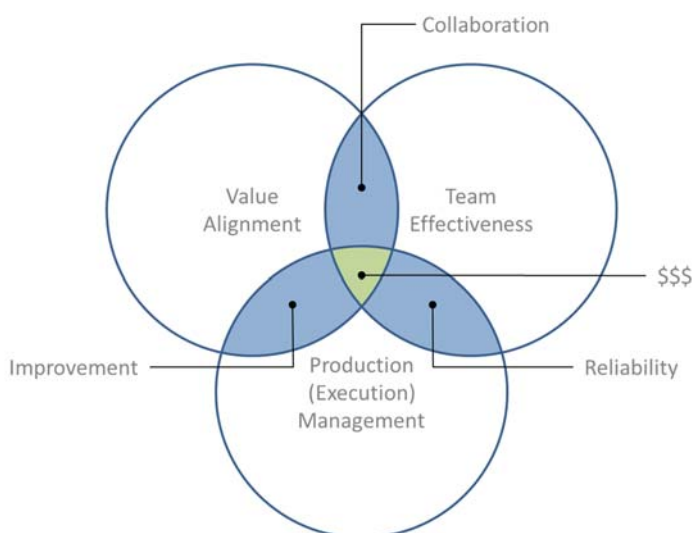
Continuum Performance was founded on the premise that there are a number of performance “continua” that exist within capital project delivery. There is a delivery performance continuum that should extend from the performance objectives the owner has for the project right through to the day-to-day work execution activities. There is a developmental performance continuum that should extend from conceptual (or tender) design through detailed design and construction and right up to commissioning and operational handover. There is business performance continuum that should link owners’ realisation of their return on capital investment goals with delivery organisations achieving their growth and profitability objectives. Most importantly, there is performance continuum that links all three – creating opportunities for competitive advantage through project delivery performance. It is possible to improve the profitability and top-line growth of project delivery organisations while responding to owners’ ever-increasing need for greater capital efficiency and more effective business outcomes.

Cost Differential	Business Outcome	Leverage	Focus
<-15%	Preferred Provider	Value Creation	Collaboration
-15%	Competitive Advantage	Operational Efficiency	Improvement
-10%	3x Profit	Production Efficiency	Reliability
-5%	2x Profit	Time Management	Activities
+5%	Normal Profit	Team Effectiveness	Resources
+15%	Overhead Recovery		
>+15%	Failure	None	Recovery

BAU Price

Through our work with projects and clients we have seen that creation of this higher level performance continuum – this competitive advantage – moves through developmental stages. By progressively expanding the project delivery focus, ever-greater points of performance leverage are achieved. As a result, significant improves can be made on cost versus “business as usual” (tendered) price.

Moving through these developmental stages successfully requires a focus on what we see as the three key influences on project delivery performance: value alignment, team effectiveness, and production management. Most specifically, it is the intersection of these influences where the project delivery magic lives and the ability to produce exceptional results can be derived. It is by expanding each of these spheres of influence on our projects that we maximise this interaction and increase the delivery performance leverage that we are able to achieve.



Value Alignment

This is not “values” – as in our belief systems – but what represents value in delivering the project. Aligning on what represents “value” in the eyes of the customer is the key to establishing common objectives, creating a target for continuous improvement and achieving overall project optimisation. Individualised value sets lead to sub-optimisation and various groups and individuals pulling in different directions. Since value can only be seen through the eyes of the customer, defining the “customer” is a key concept – there are “macro” customers such as the client that is paying the bills or the senior management of the contracting organisations that are concerned with overall project outcomes. There are also “micro” customers such as the next trade or discipline that our enabling work will be handed to or the construction team that a design output is meant to serve. This means that there are both macro values around which the team needs to align as well as micro values that individuals and work groups need to find common ground. Both types are important to understand from a delivery performance perspective – in some ways the latter more influential than the former.

One of the most profound expressions of value alignment is a delivery strategy that has been co-created and “owned” by the entire delivery team and is then manifested in the project schedule and cost plan.

Team Effectiveness

This is not simply how well the team performs but the structural and operational characteristics that generate effectiveness. Effective teams are those that are cross-functional, organized in an integrated team structure, benefit from a leadership team that provides the support necessary to allow them to function effectively and have alignment of purpose. It is a team that takes advantage of capabilities at “the edge of the organisation” by using a distributed approach to planning and control the work rather than a central command and control one – where the staff most responsible for doing the work are responsible for planning and controlling its execution (in a structured, rigorous manner – not an adhoc one). The project delivery leadership are responsible for ensuring commitment and discipline to the approach and driving continuous improvement. Effective teams are the ones that create a pool of resourced humans not the ones that dip from the well of human resources.

Production Management

Capital project delivery is a transformational process (e.g., performance requirements are transformed into process design, process design into detail specification, specification into fabrication, fabricated equipment is delivered into inventory, inventory is erected into constructed plant) and as a result it responds as a production system. This means that industrial engineering principles and production laws govern the overall efficiency of the execution

environment and can be used to analyse and, if we choose, optimise the system. The reality is that we "manage production" on every single project...the fundamental question is the effectiveness of the management approach. As Ed Pound from Factory Physics, a fellow member of the Project Production Institute, says "your work systems are perfectly optimised for the results you're getting."

When we refer to Production Management in a rigorous and structured manner, there are three focus areas and a fourth that brings them together as one:

- **Production Planning and Control.** A rigorous approach for managing the project work flow (from design right through procurement, construction and commissioning) at an execution-level. It is accomplished by prioritising and reliably completing those activities, on a daily basis, that matter most to achieving an overall delivery strategy, in an environment where change and unknowns are ever-present.
- **Value Creation in Design.** Techniques to utilise design as a value creation process rather than a deliverables generation activity so you design what you are happy to build, procure and commission. This is done by developing the design of the "product" at the same time that you are designing the "process to produce the product."
- **Supply Chain Management.** The optimization of the supply chain (labour and materials) from creation of procurement documentation through to delivery of the procured item/service to the work face so that supply is meeting demand in accordance with your delivery strategy.
- **Design for Manufacture and Assembly (DFMA).** DFMA or modularisation techniques bring together the three previous techniques in a manner that begins to truly transform elements of capital projects into a manufacturing environment.

Our experience shows that to improve delivery performance using the concepts outlined above, it must be acknowledged that we are looking at a new way of doing the business of capital project delivery – it is not merely a re-branding of traditional techniques. The implementation of new ways of working requires not only the development of capabilities, but also the development of commitment. While technical education and training supports the development of capabilities, ownership and co-creation generates commitment. We have created the *Exploratory Session* as a means of doing both simultaneously while ensuring that the team continues to progress the business objectives.

The Program

The *Exploratory Session* is a workshop program that focuses on:

- **Defining Business Objectives and Critical Success Factors.** To effectively identify improvement opportunities and the initiatives that will enable them, the team must align on the specific business objectives, outcome targets and areas that are critical to success. This

includes both the strategic approach to delivering the project as well as the strategic approach to operating as a project team.

- **Production Concepts.** Developing the conceptual understanding of the things that impact efficiency and effectiveness in the work execution environment and how work execution efficiency affects project performance.
- **Production Management Techniques.** Translating those concepts into practical applications in the project environment. This includes the business processes that need to be implemented, the types of systems that enable these processes and the organisational approach that makes them effective. This includes a discussion of how others are applying these techniques to their projects.
- **Action Planning.** This workshop is not conceived as an academic exercise or a training program. It is anticipated that team will evaluate the various production management approaches against the agreed view of the project objectives and areas of criticality to determine where best to create project value. This view will then be embodied in a clearly articulated plan of action – or Implementation Plan as we typically describe it. The action planning discussion will include insights into the specific leadership skills necessary to successfully incorporate production management into the overall project management approach.

Who is it for?

The *Exploratory Session* design has been aimed at what we typically refer to as the “project delivery leadership” – key management and supervisory staff in the design, construction and commissioning of the project. However, it provides valuable developmental insights for any member of the project organisation that is responsible for delivery – from project engineers to project delivery operations management. This program is, first and foremost, about creating a competitive advantage out of project delivery performance.

What does it consist of?

The *Exploratory Session* is comprised of:

- Two full-day workshop sessions divided into four half-day modules.
- Documentation of the workshop outcomes into an Implementation Plan.

Workshop Session

The workshop is set up to accommodate between 5 and 20 participants and can be delivered in your offices or at an off-site location depending on your

preference. It utilises the why, how, what educational model to unpack conceptual information into approach, then approach into technique. The workshop is designed to incorporate the unique aspects of this particular project as well as discussion around the participants' project experiences.

The four modules are structured along the following:

Module 1 – Defining Business Objectives and Critical Success Factors

- Business Expectations for the Project
- Key Project Objectives, Their Drivers and Target Outcomes
- Areas Critical to Successfully Achieving Targeted Outcomes
- Delivery Strategy Development and Deployment
- Risk Management

Module 2 – Understanding the Impact of Production on Project Performance

- Historical Perspective on Project Management and Project Delivery Performance
 - Current state of project delivery performance
 - Historical perspective on productivity in construction
 - The historical development of project management practice
- Introduction to Production Management
 - Production simulation – The impact of variability on project performance
 - Production simulation – The impact of work flow on project performance
 - Concepts that underpin the design and control of a project production system

Module 3 – Applying Production Management to the Management of Projects

- Introduction to the Project Delivery Performance model
- Value Alignment
- Effective Teams
- Production Management Applications
 - Production planning and control
 - Value creation in design
 - Supply chain optimisation
 - Design for manufacture and assembly (modularisation)

Module 4 – Action Planning

- Discuss and capture potential initiatives for implementation based on the opportunities for creating value
- Develop a detailed action plan moving forward on those areas determined to be of benefit
- Identify business processes and enabling systems' approach

- Discuss leadership of a Production Management approach

Implementation Plan

Following completion of the exploratory workshop, the outputs will be used to develop a draft Implementation Plan for consideration and review by the project leadership. The final Implementation Plan will then be developed for action by the Project Team.



About Us...

Jeff Schwisow is a project delivery professional with nearly 30 years of project management experience. As a “student of the project management game,” he rigorously studied and applied traditional project management practices and over that period, he learned that these practices were not enough to ensure success. He saw that traditional project management approaches were focusing on what was “happening in the coaches’ box and on the scoreboard”

but there was inadequate attention being paid to “how the game was being played on the field”...and it is on the field where games are won and lost.

It was in further developing his “principles of exceptional performance” and his passionate for helping teams deliver truly exceptional outcomes that Jeff to found Continuum Performance in 2010.

Our focus is on increasing returns on capital investment through more efficient, effective project delivery performance. The thing that sets Continuum Performance programs and services apart is that we bring an extensive capital project management background together with a highly developed understanding of production management and industrial engineering. This is not only a theoretical understanding, but firsthand experience in how theory impacts on capital project performance.

To Learn More...

For more information about the *Exploratory Session* or any of Continuum Performance’s programs and services contact us at info@continuumperformance.com.au or +61 414 829 070.