Beyond the Baseline – Unleashing Success with Earned Value Management

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Session 1 – Summary

The first session (yesterday) looked at:

The three components needed for effective project control

Defining the requirements:
- Tools to identify the current situation
- Flexible tools to help plan and optimize future work
- Precise tools to monitor and record actual performance

The current ‘state-of-play’ including planned and actual updates to the core EVM standards.

Accepting risk and uncertainty – no one can accurately predict the future.

Why managing to deliver on-time is more important than on-budget, time is money!

This session will focus on how to implement effective controls

Introduction – Knowledge Hub Session 2

Session 1 summary

Outlining a controls system that works

Shifting EVM towards providing robust information early, including accepting uncertainty

A brief overview of forward planning options from CPM through lean to agile

Using AI to enhance management information

Dealing with the essential governance, audit, and contractual requirements – we still need the project accountants

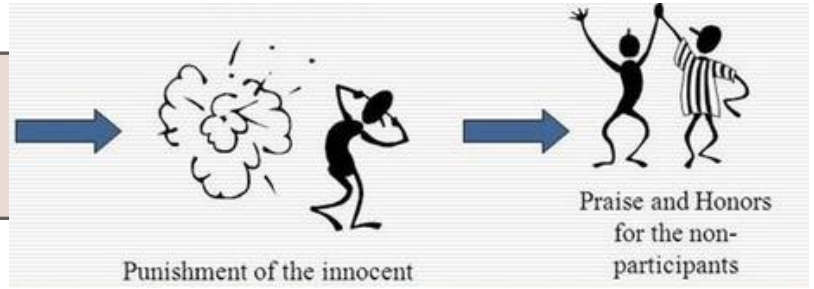
Conclusion

Introduction – Knowledge Hub Session 2

← Project Timeline →

Precommitment / Feasibility	Delivery Phase

Commitment



This presentation is focused on the project delivery phase – post-commitment

The assumptions underpinning the session are:

1. The project scope, cost and duration are defined (either as a contract or a formal approval)
2. There is a plan to achieve the scope within the cost and time constraints
3. The work is being managed as a ‘traditional project’

A Controls System That Works

An effective controls system will:

- Tell management within a couple of days where they need to focus attention
- Help management change the work to resolve problems and lock in gains
- Allow due process for reporting, administration, and audit purposes

These are different objectives, requiring different tools and approaches

Simple EVM (SV only) can support the time-urgent identification of issues

Full EVM can support contractual reporting after AC is included

CPM Master Schedules define the objectives to achieve but do not help improve resource productivity during the project

A Controls System That Works

The paradigm shift in thinking from traditional approaches is:

1. Productivity is the key to performance – momentum matters
2. Improving resource productivity improves performance
3. Achieving improvement needs both short-term and long-term thinking
4. **Getting the right resources, in the right place, doing the right work, at the right time is more important than trying to manage cost**
5. Cost is an output derived from:
   - The cost of the resources used (procurement and the market)
   - How effectively and efficiently the resources are being used
6. Every day's delay in working to improve resource effectiveness is a lost day **that will never be recovered**

Refocusing EVM – Detailed ≠ Useful

What information is more useful?

A. The welding team have only completed 2/3 of the work scheduled
B. The welding team have completed 2,563 meters of weld the baseline target was 3,642m
C. Welding AC = $128,000, EV = $82,016 , CV = -$45,984

Information ‘A’ is immediately available,

‘B’ will not be available until Wednesday next week

‘C’ will not be available for 3 weeks

Refocusing EVM – Detailed ≠ Useful

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Contract administration needs 'B' (and probably more information on different types of weld, metal thickness, etc.) – waiting a couple of weeks is not a problem to get accurate information for:

- Contract payments
- Internal accounts, and
- Audit purposes

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If you are managing the welding team; there is no practical difference between 'A' and 'B'– both tell you productivity needs to increase by at least 50%

Waiting a week or longer for marginally more precise information makes the problem worse – **you have been underperforming for an additional 7 days**

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'C' is simply history – look at the options likely to cause this negative CV:
- The welding contract was let at a rate 50% higher than the estimate
- Welding is far less efficient than estimated (low productivity / changes / rework / etc.)
- A combination of the above

Working to fix productivity is the only option that has the potential to reduce the –ve CV

'A' lets you start immediately – **'C'** means wasting 3 weeks while the low productivity continues

Refocusing EVM – Detailed ≠ Useful

The challenge is shifting EVM towards providing robust information early, including accepting uncertainty

Work Performance Management (WPM)

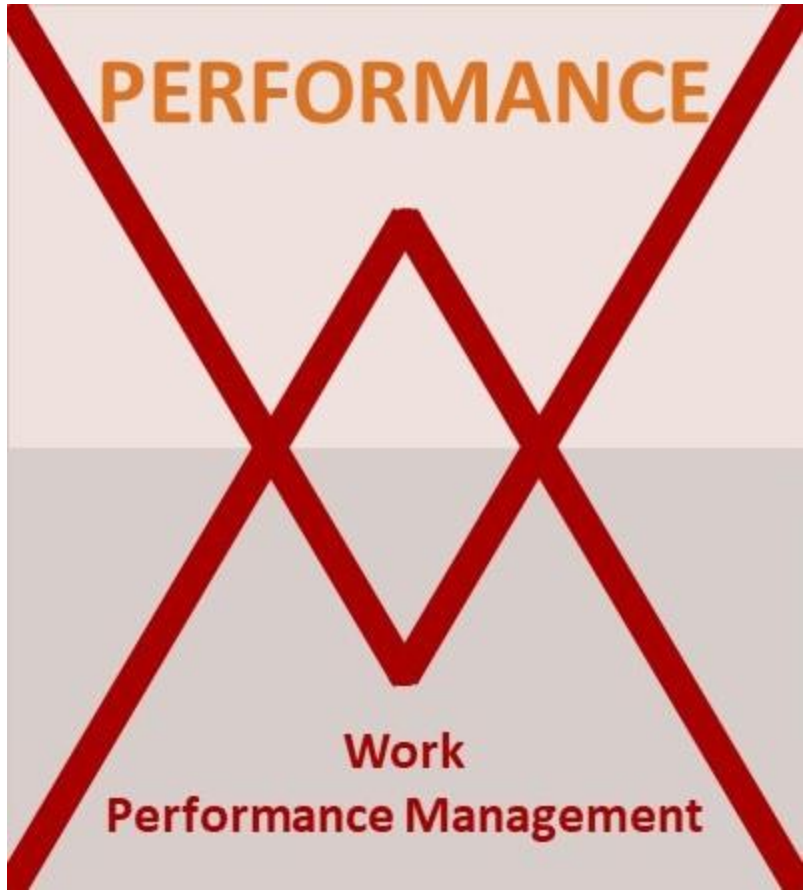
Based on Earned Schedule – works with standard EVM

Focuses on measuring productivity achieved -vs- planned

The measure of productivity can be:
- $ - monetary values tie into the rest of EVM
- Any other useful metric (eg, meters)

The comparison is **Planned (PV) -vs- Earned (EV)** both are immediately available

The objective is to identify **Work Elements** that need attention

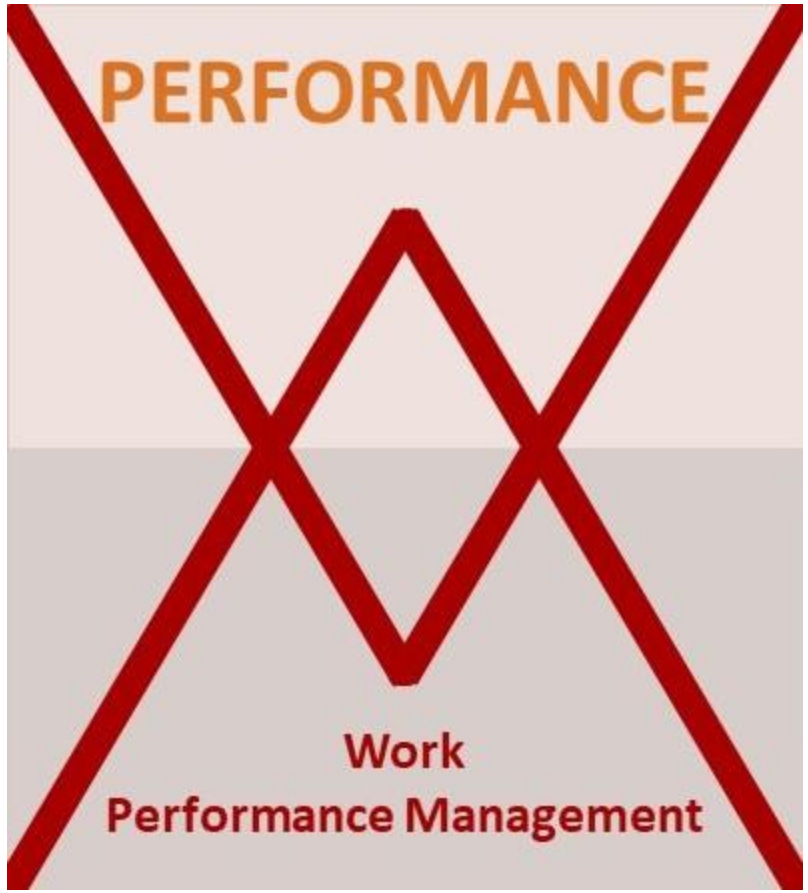


Refocusing EVM – Detailed ≠ Useful

Work Element = a trade or skill in an area
(work package or part of a work package)

Required information for each **Work Element**, for each period:

1. How much work has been achieved vs required performance
2. What are the trends
3. Where are the opportunities
4. What exactly is the cause of each problem / issue



For more on WPM see: https://mosaicprojects.com.au/PC-3-10-WPM.php

Refocusing EVM – Detailed ≠ Useful

Work achieved (ie, EV) can be assessed

Near enough really is good enough

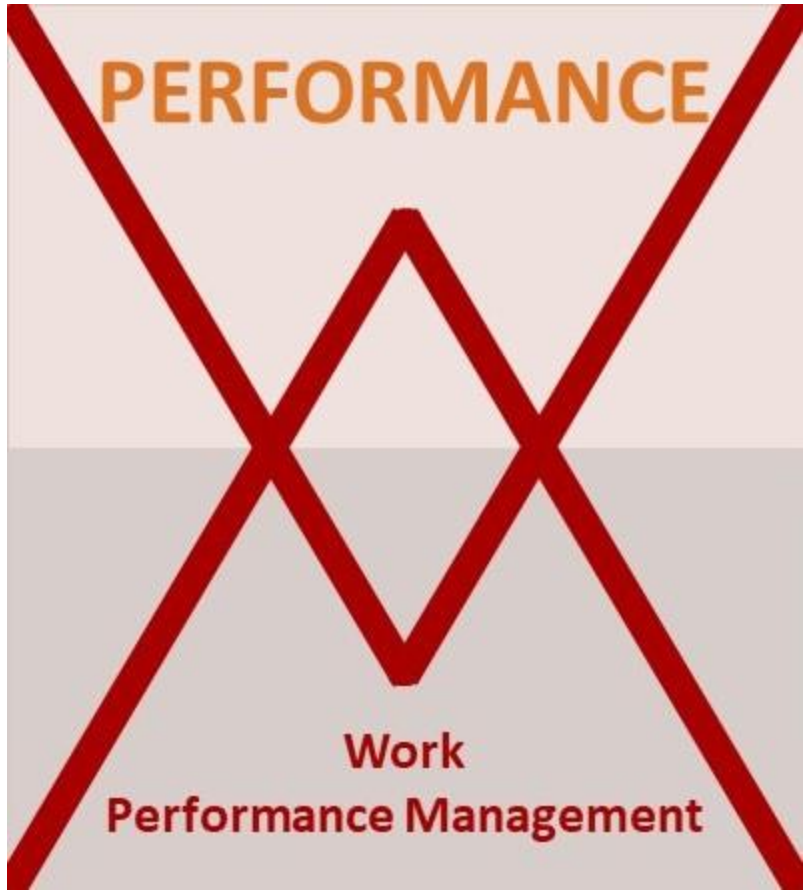
The objective is to identify problem areas needing management input to improve outcomes going forward

If you know welding has underproduced by some 1000 meters in the last period you know you have a problem

The controls challenge is to identify the problem

The management challenge is to fix the problem

No one need precisely accurate and detailed data to understand where the problem is (procrastination = asking for more detail)



Refocusing EVM – Detailed ≠ Useful

This basic information can be built into a full EVM system:

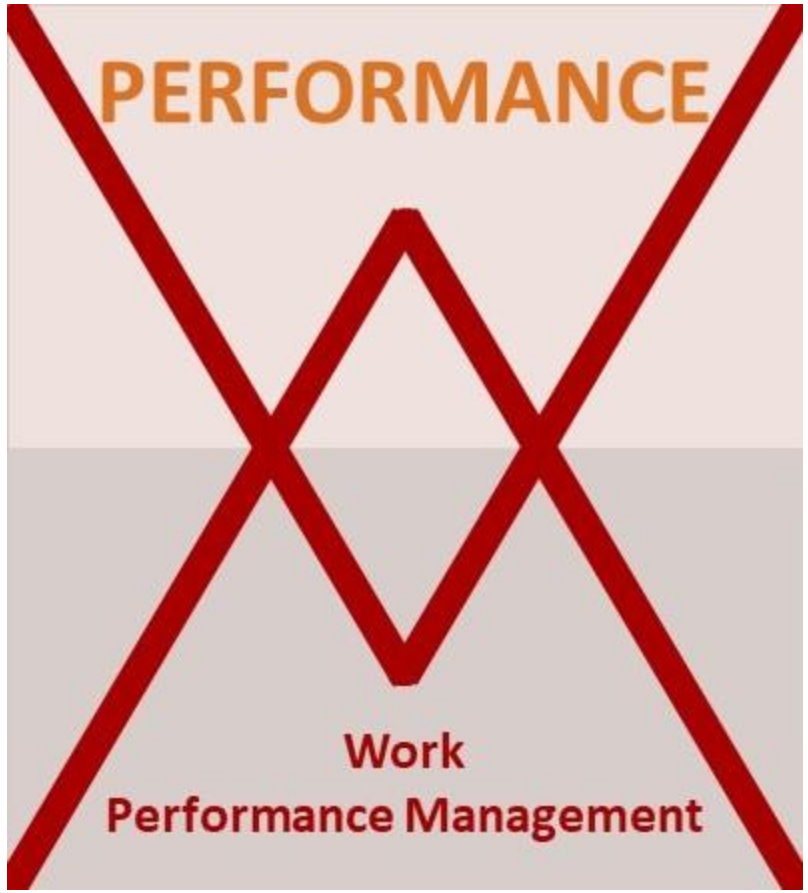
Work Elements can be aligned with Work Packages, or

A number of Work Elements can form part of a Work Package

The work performed measure is the Earned Value, either
- Directly with $ used as the metric
- Indirectly with the work measure being converted to $

Once you know the EV and SV for each Work Element, the information simply rolls up through the EVM model, with AC added later

Alternatively, you can use the WPM spreadsheet:
https://mosaicprojects.com.au/shop-easy-WPM_WS.php



Forward Planning Options

The three phases of forward planning & problem fixing:

1. Plan and optimize future work to make the best use of the available resources to lock in opportunities and mitigate issues

   - Working with the currently available resources – they are all you have

2. Optimise/redesign workflows and eliminate waste

   - Lean and Six Sigma approaches

3. Revisit procurement to obtain enough of the right resources at the right time

   - The cost of **not** having the right resources will always exceed the costs of getting the right resources - the work has to be done to the required quality standards

Forward Planning Options

Tools for short-term planning and work organising (starting immediately**):**

1. Different approaches work best in different situations – work with the teams' preferences

2. There are lots of options:
   - Scrum / Agile / Velocity
   - LEAN / Last Planner / Takt
   - Short term look-ahead (bar charts)

3. The plan must be developed with the people who will be doing the work

4. Focus on being real – not some arbitrary deadline

The objective is to build a plan that works and get people working to the plan

Forward Planning Options

Optimise/redesign workflows and eliminate waste (flows on from planning**):**

Eliminate Waste

Defects
Efforts caused by rework, scrap and incorrect information.

Overproduction
Production that is more than needed or before it is needed.

Waiting
Wasted time waiting for the next step in a process.

Non-Utilized Talent
Underutilizing people's talents, skills & knowledge.

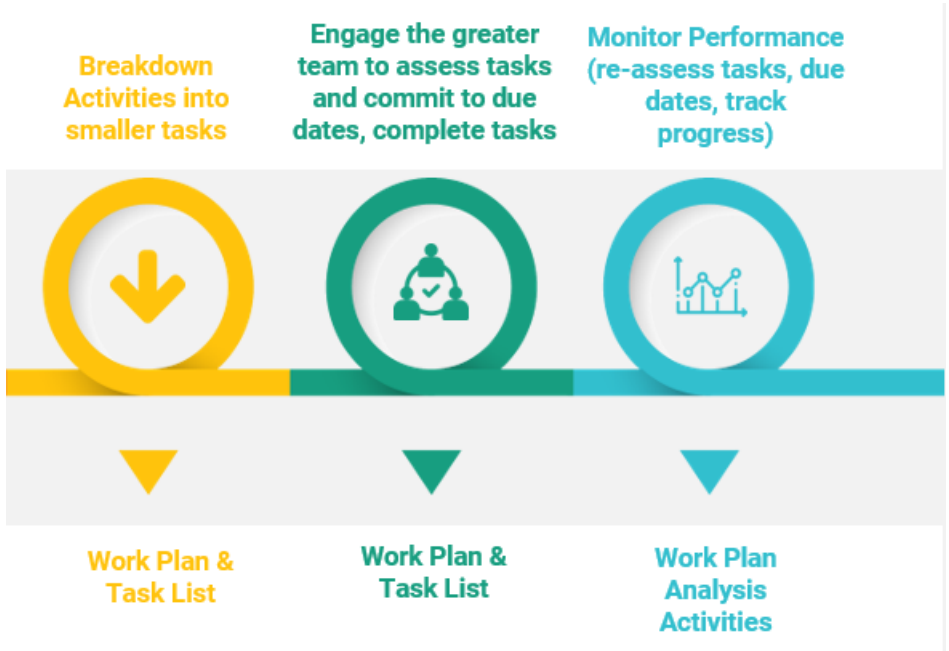
Transportation
Unnecessary movements of products & materials.

Inventory
Excess products and materials not being processed.

Motion
Unnecessary movements by people (ex. walking).

Extra-Processing
More work or higher quality than is required by the customer.

Optimise Workflows



Forward Planning Options

Revisit procurement (when you know what resources are really needed**):**

Cost is only a small part of the equation:

- **Capability** is more important than hourly cost rates
  (if they cannot do the work properly it does not matter how cheap their quote is)
- **Availability** is more important than quoted prices
  (the cost of delay will always be more then the price difference between quotes)
- **Compatibility** is essential, they have to be able to work with you and the other contractors

If adequate resources are not available (probable – you have already been to the market) the project baseline needs redesigning to accommodate reality

There is no value in deluding yourself or your clients

Forward Planning Options

Key considerations:

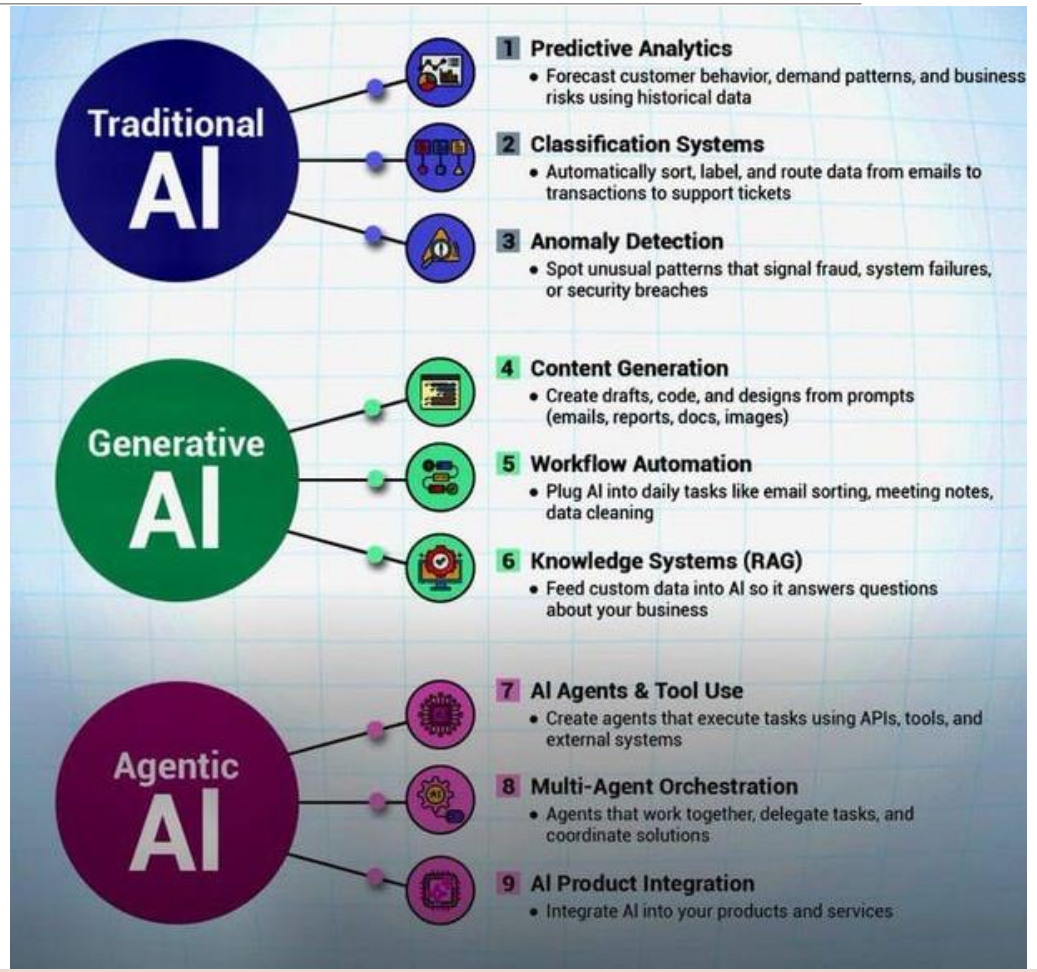
1. The sooner you start working on a problem, the sooner it will be resolved
2. Problems always get worse with time
3. **Not** fixing the problem will always cost far more than the cost of the fix
4. **But wasting time and money on an insoluble problem is not smart**
5. When insoluble problems are encountered, the project plans need reframing to reflect reality
   - no one benefits from pretending the project will finish as planned when you know it will not
6. Reframing may involve:
   - Developing different approaches that achieve the final targets
   - Recognition that the plan cannot be achieved and dealing with the reality of what can
   - A bit of both

Using AI to enhance information

AI has the potential to enhance the controls process

- Automatically collecting progress information
- Running parts of your EVM system; eg, importing, categorizing and allocating actual costs
- Standardising the production of reports
- Rolling up data from the Work Elements to the Work Package
- Checking for anomalies and errors

My presentation: ***AI is not intelligent, but it can be useful*** looked at one aspect of using AI in projects



Essential Governance Requirements

We still need the accountants ☹ A lot of people think money matters

Financial and contractual controls need to be as accurate as possible

Audit functions and taxation requirements are always present

Money is needed to pay for the project and flow to the supply chain

The paradox embedded in this presentation is:

- Money matters, but
- The best cost outcome is achieved by focusing on getting the project work done (not $$$)

Conclusion

Cost follows the cause – the best project outcome (time) delivers the best cost outcome

We have the tools – this two-part session was focused on adjusting the way they are used to deliver better management and control

Adapting the controls process to deliver actionable information within a couple of days is easy

Changing management attitudes to work vigorously on the problems identified will be much harder

Workflow management only needs one data point – are we doing enough work properly
- This is needed for each work element

All other information is secondary – it is needed for reporting and administration

The ideas in this presentation are not new P-D-C-A has been around since the 1920s
(see: 'Shewhart cycle')

Questions?

Questions can be asked now, or

Contact the presenter at:

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