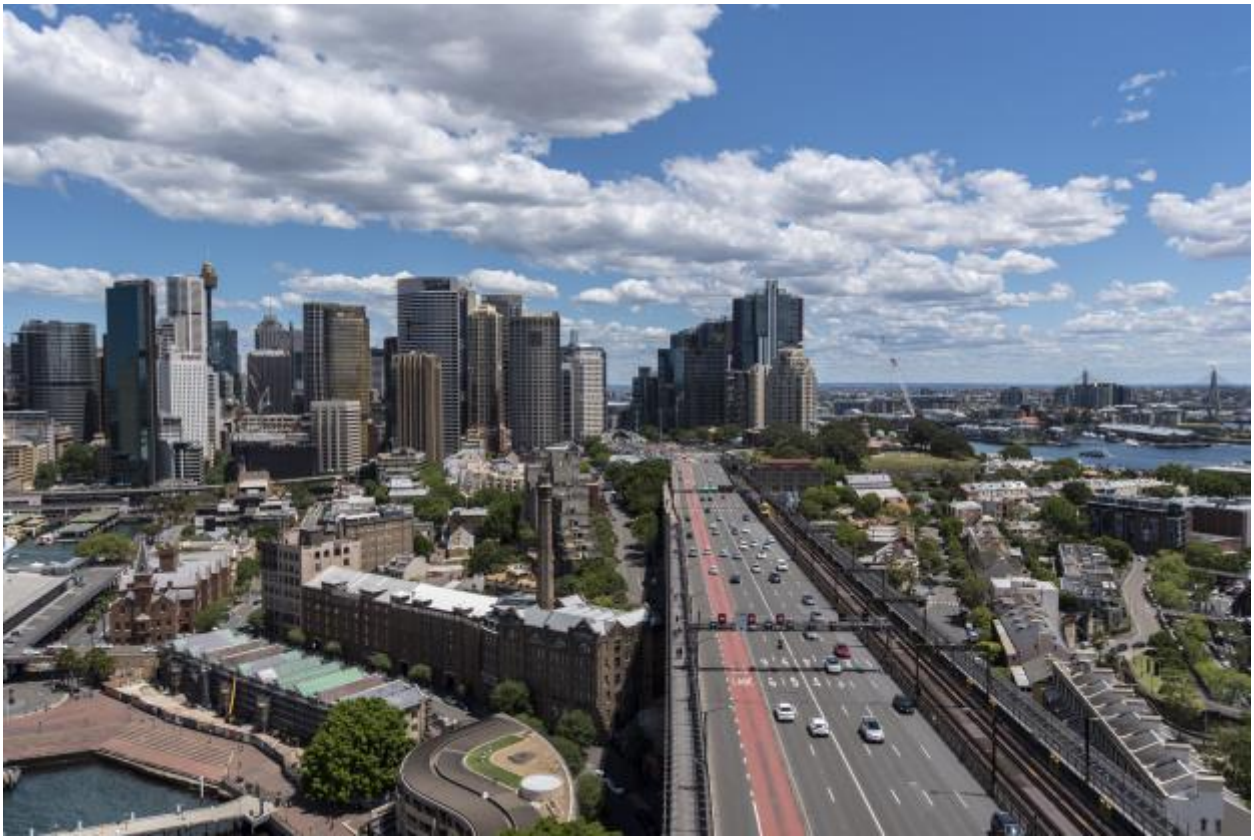
AACE AUSTRALIAN SECTION

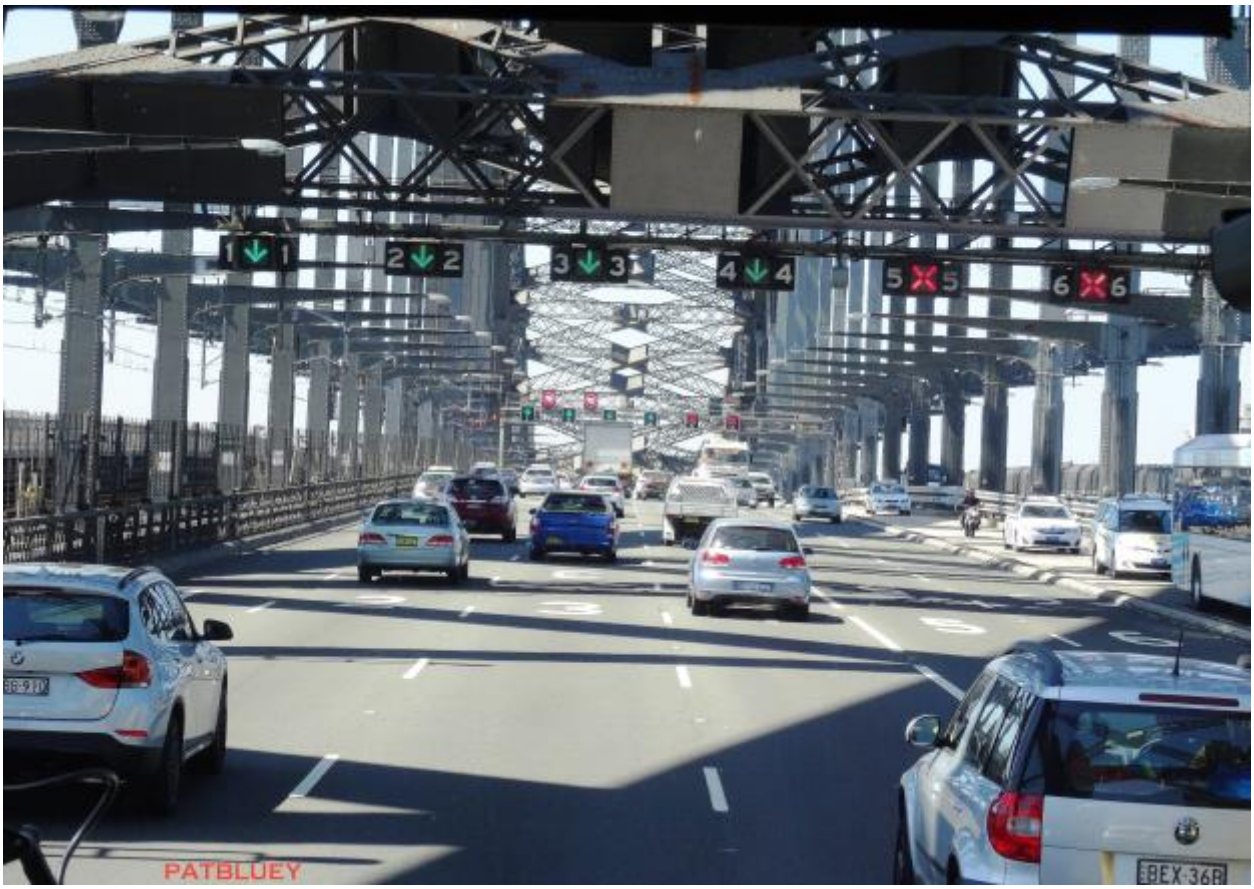


ACES NSW QUARTERLY NEWSLETTER

Quarter 3 - September 2021

Australian Cost Engineering Society (ACES)

In this newsletter



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Upcoming ACES Event

September 2021 Virtual Presentation

Title: Earned Value Management

Presenter: Ish Ahuja, Project Controls Manager at John Holland

Juan Vega, Principal Consultant - Project Controls at Infrastructure Nation

Date: 21st Oct 2021

Time: 17:00 AEST

Abstract: This event will help Construction Professionals, Project Managers, Commercial Managers, Planning & Controls Team, Project Directors in delivering critical projects within budget and ahead of time by utilizing EVM and managing Change Management process along the journey.

Technical Article

From integrated project controls to Reference class forecast – A ramble from a passionate professional

Abhi Datta

BEng, CPEng, MIEAust

I have intentionally called this a ramble because we are amongst friends and we don't have to be politically correct all the time. What's wrong in having a bit of a **ramble** when you are in good company ... Agreed?

While setting up project controls on project or program-based organisations, professionals focus on tracking, review, and management of information needed to meet desired project performance objectives. Project and Program controls start with schedule tracking (planning and scheduling is well accepted in the industry), cost control which frequently gets confused with management accounting, risk, trend and change management.

The rigor to establish integrated project controls (IPC) processes for the organisation is linked with organisational maturity and varies from project to project. This depends upon the rigor shown from the leadership team towards project and program controls. On many projects there can be a siloed approach to planning (as observed on statistically significant number of projects) cost, risk, trend, change and governance with a lack of integration between these processes.

Integration can be perceived as cumbersome and cost intensive. While the cost of establishing and running controls shouldn't be more than the cost saving it delivers, there is clear correlation between establishing controls in mega projects and positive schedule and cost outcomes. IPA (Independent

Project Analysis - https://www.ipaglobal.com/) reported that "good Project Control practices reduce execution schedule slip by 15%. Project Controls cost range from 0.5% to 3% of total project, (including cost accounting), therefore, to break even, Project Control needs to improve cost effectiveness by around 2%."

Another study conducted by the IBC Cost Engineering Committee of IPA around the same time frame, showed "cost improvements for the projects in the study were more than 10%. It is noted that Net Present Value also benefits from schedule improvements."

While in certain private projects, which have a business case and outcomes are a clear direct measure in terms of dollars, it can be a clear decision between either cost or schedule. For example, if a production facility generates oil, minerals or produces widgets it becomes somewhat easier to balance between schedule or cost as an outcome. In several resource sector projects, decision making becomes easier because we know that it's a schedule driven project. This may not be the case in public sector projects, where it could be other factors driving outcomes, like employment or community and stakeholder engagement. Lets be frank and we all know that politicians love these big projects because they can put their names on them as they are highly visbile.

The 5 top reasons seen in public infrastructure project overruns (in terms of cost and schedule) are:

1. Not having reference class forecasting methods to build up the project
2. Scope creep including a lack of clear project objectives.
3. Lack of or insufficient project tracking such as milestones, budget and resources; documentation; reports and analysis.
4. Lack of governance - poor communications including no clear communications pathways or structures (linked to governance)
5. Poor planning which not only in terms of schedule planning but strategic planning including assumptions.

Now, one of the challenges I see in decision making is because everyone sees the data through their own lens i.e. a planner through the planning (time) lens, cost controller through the cost lens and risk lead through the risk lens. Integrated Project controls brings it all together and helps in effective decision making.

A definition of project controls which I like most is the definition of project control to cost engineers which is found in the AACE 10S-90 Recommended Practice and states that project control is a management process for controlling the investment of resources in an asset where investments are made through the execution of a project. Project control includes the general steps of: 1) Project planning including establishing project cost and schedule control baseline; 2) Measuring project performance; 3) Comparing measurement against the project plans; and 4) Taking corrective, mitigating, or improvement action as may be determined through forecasting and further planning activity.

In project management terms, project controls can mean the collection of processes for schedule controls, cost controls, change management, and more. Integrated Project Control is the systematic

integration of customer requirements, supplier-management values, and status information from all data sources in a compatible form for rational decision-making.

This integration of data sources, providing insights and facilitating effective decision making is why I see project controls need to be integrated. Unless we are integrated, we cannot make effective decisions. I would also go ahead and state that project controls is not inherently a part of early project development and there I see its absolute necessity in decision making from early stages of project development.

At an early stage I would think Project controls discipline has a role to play by managing data and use data analytics to ensure realistic time and cost estimates cutting through inherent biases. Australia is investing in mega projects and there is an opportunity of a life to capture that data and ensure that this database is used for help us with future estimates which would give us a realistic view on business cases and providing the best outcome for our nation in terms of productivity. This is reference class forecasting (RCF). In todays ramble let me talk about RCF in a bit more detail.

What is RCF? It is simply a way of predicting the future by looking at similar past situations and their outcomes. I would strongly recommend "Thinking Fast and Slow" by Daniel Kahneman if you want to know a bit more about human biases and why this is so important to note in this context.

For our purposes RCF include identification of potential similar benchmarks, cost norms, or activities at the lowest possible level of the work breakdown structure (WBS) hierarchy. The assembly or work package level of detail, below the control account (CA) level of the WBS hierarchy, where technical scope, schedule, and cost elements are integrated, and this can provide granularity and improve accuracy during the project planning process while providing more realistic cost and schedule development.

Similarly, when using RCF, a more granular risk analysis is possible due to additional data or points of reference. Hence the project controls community must get together in providing inputs to RCF and estimate contingency which is meaningful and free from biases (as much as possible).

In conclusion, IPC in an important factor in all stages of the project and should play a major role in integrating all datapoints in effective decision making. RCF should be stipulated as a requirement with all project estimates. The timing can't be better than this as Australia is going through an unprecedented Infrastructure investment boom and we as a community need to take charge.

Come Join Us!!

Our Mission Statement: To provide national leadership and facilitate professional activities to encourage member contribution to the practice of Cost Engineering in Australia.

Australian Cost Engineering Society (ACES)

The Australian Cost Engineering Society (ACES) was formed in 1996 to provide opportunities for the exchange of information on the development of total cost management technologies in Australia and to encourage increased training and development for practitioners. ACES is a technical society of Engineers Australia and a member of International Cost Engineering Council.

Our Mission Statement: To provide national leadership and facilitate professional activities to encourage member contribution to the practice of cost engineering in Australia.

If you are involved in or have an interest in estimating, cost control, planning & scheduling or project performance then you should join ACES!

Technical Meetings - held regularly and are led by leading practitioners in the field of Project Controls / Cost Management. Provide members with opportunities to discuss relevant issues with their peers.

Conferences - held annually around a theme suggested by ACES members.

Networking Opportunities - ACES will put you in touch with experienced, like minded professionals who will enrich your cost engineering knowledge and give you the satisfaction of contributing back to your profession.

Newsletters - published quarterly and provide relevant information to members on upcoming events and keep you updated on the infrastructure sector. They also include interesting and thought-provoking articles in the field of cost engineering.

Australian Cost Engineering Society

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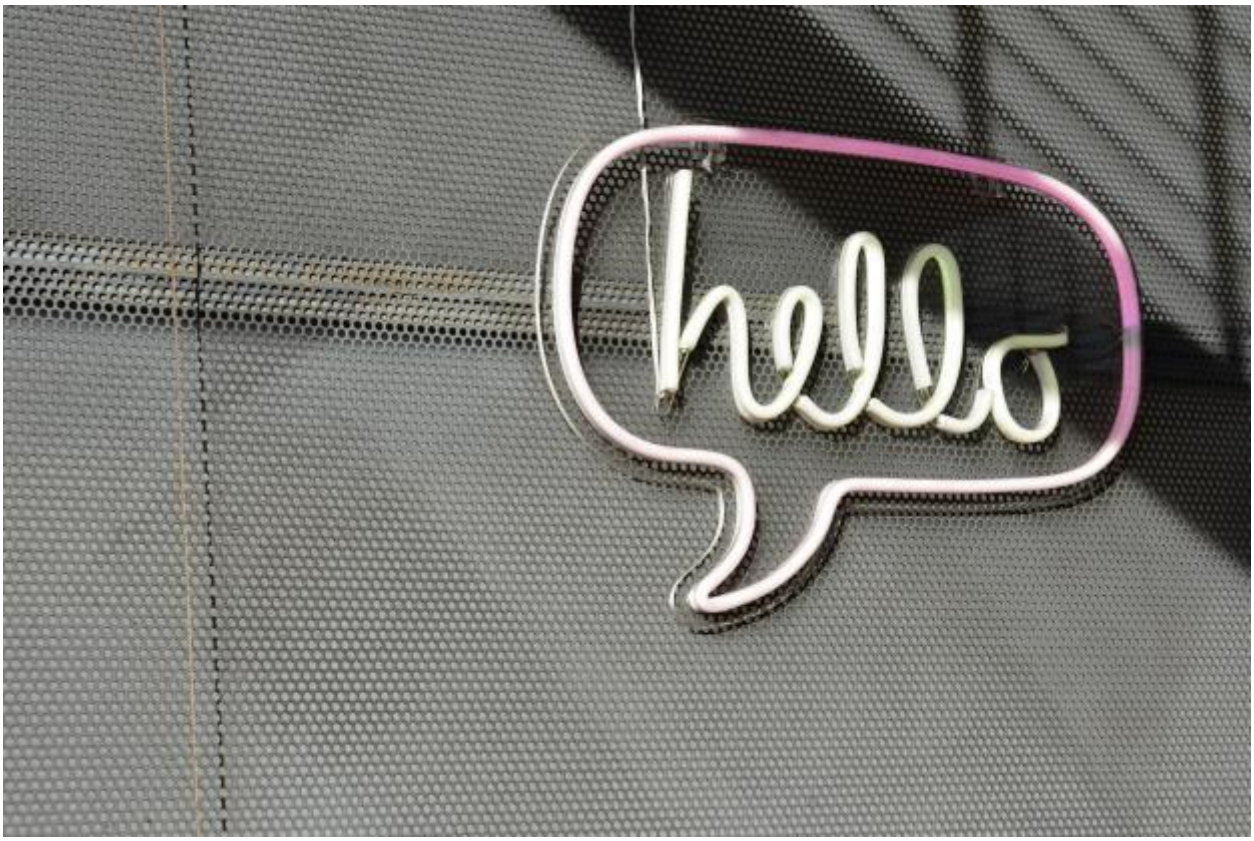
Linkedin: https://www.linkedin.com/company/australian-cost-engineering-society-aces-nsw-chapter/

Contacts



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