



i3d3.net measuring project success

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Product Liaison



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<https://i3d3.net>

the great commission ...

It is often said that sponsors no longer see projects delivered on time, within budget, as specified and with no surprises as sufficient evidence of success. Rather, what they really want is projects that are aligned with their strategic stakeholder objectives, providing a range of financial, social, ethical and environmental benefits that are fully realized as anticipated. This thinking is an expansion of project delivery success (with a focus on implementation) to project success (comprising initiation, implementation and influence). Projects are merely vehicles of change, and project managers as change-agents have a vested interest in successful outcomes.

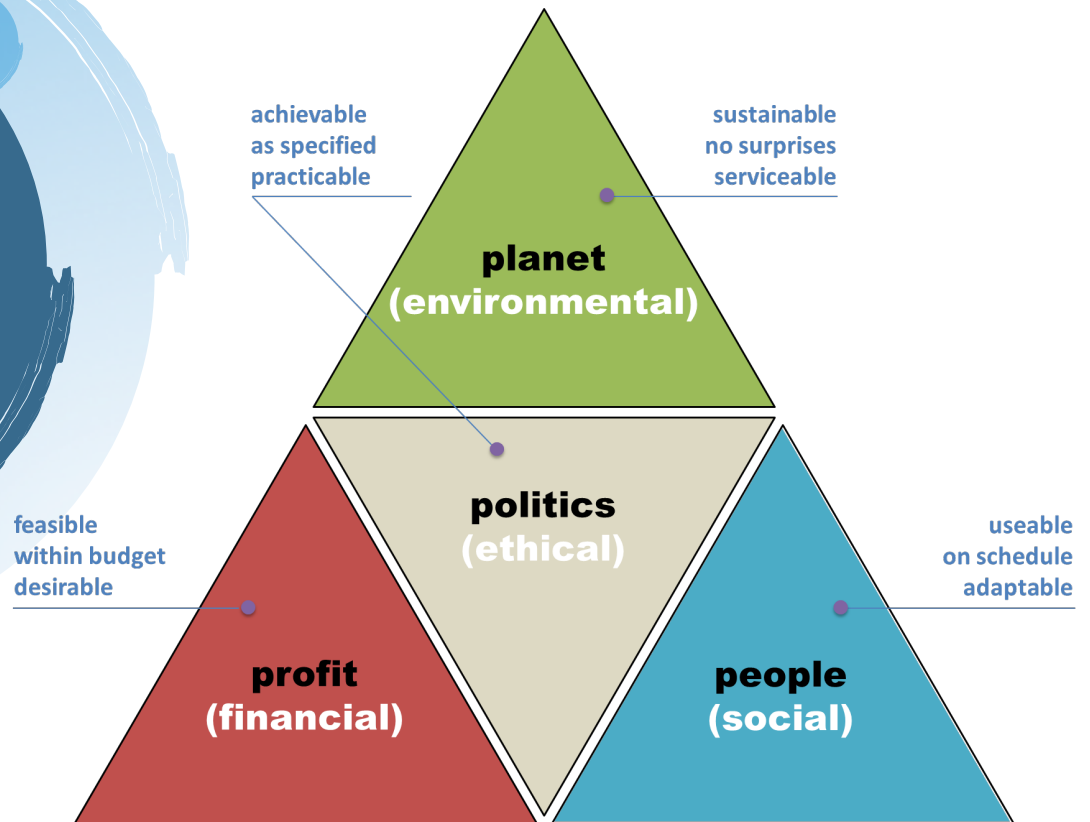
The problem is that contribution to the wider definition of success is achievable only if project managers are involved early during the initiation phase (design) and stay connected during the influence phase (delight), which is not common.

The *i3d3* model is an attempt to enable project managers to measure and compare the wider success of their projects. It is agnostic to project type, size, location or date. I invite you to have a look at this model on our website. You can download a description of how it works, two completed case studies, as well as the model itself – ready to use.

If you need help with implementing *i3d3* into your organization, just reach out.

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izd3 can do more than compare 'apples with apples', it can compare 'apples with oranges' ...



↔ communication		
Project Initiate (develop/plan phase)	Project Implement (execute/control phase)	Project Influence (operate/utilize phase)
owner/sponsor shareholders	project team regulatory authorities	client/end-user local community
design: feasible (profit) useable (people) achievable (politics) sustainable (planet)	deliver: within budget (cost) on schedule (time) as specified (scope) no surprises (risk)	delight: desirable (attractiveness) adaptable (flexibility) practicable (fit for purpose) serviceable (enduring)
> do the right project	> do the project right	> do the right project right
project success =	+	+
balanced scorecard (± %)	planned v actual (± %)	satisfaction surveys (± %)
benefit realization	evaluate success over time	collective utility



innovation is
defined as positive
change in efficacy,
efficiency and
margin between
planned and actual
performance

Complementing the *i3d3* model, our researchers have also produced a client-contractor project innovation (*c2pi*) tool that can assess the extent of innovation that has taken place during project delivery.

It is generally accepted that the merits of project success depend on who is judging and when the evaluation takes place. Yet not all project participants share equally in success. There are potentially winners and losers. There are also differing interests and motivations at play. This is no more obvious than in the client-contractor relationship during the project implement phase, when the client's objectives (maximum scope with minimum cost, time and risk) collide with the contractor's objectives (maximum profit with minimum defects, time and accidents). These success factors lead to diverse outcomes but remain agnostic to project type, size, location or date.

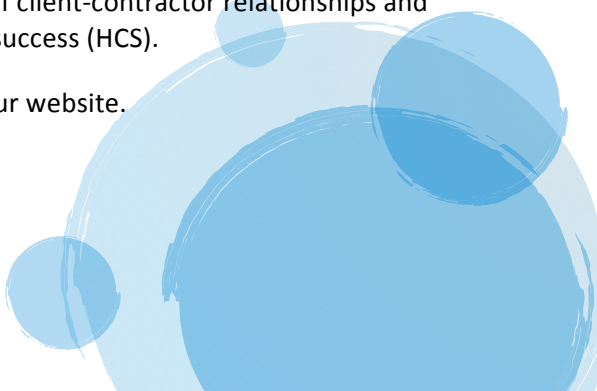
Business-as-usual might be argued as a process that delivers a project that satisfies the goals of both client and contractor. Unsatisfactory outcomes might be considered as failure and depending on the extent of dissatisfaction this could lead to a serious reduction in project benefits. Project managers are typically charged with implementing projects that can realize stakeholder benefits (or value for money). They sit between client and contractor although not with equal allegiance.

The intersection between client and contractor is contested space. It comprises client-led variations to the scope of work, contractor-led innovation that improves delivery performance (working smarter) and how mutual benefits can be accessed and shared. The space is a microcosm within a wider context of financial, social, ethical and environmental consequences where a range of stakeholders can be affected. Collateral damage can occur.

The purpose of *c2pi* is to explore the nature of this contested space and how decisions taken during project implementation can be optimized to deliver us from business-as-usual. It is where innovative ideas can be implemented that lead to process improvement, productivity gains and better outcomes without reducing quality.

Overleaf is a hypothetical example of the *c2pi* calculation. This tool is ideal for measuring the nature of client-contractor relationships and benchmarking head contractor success (HCS).

The *c2pi* tool is available from our website.



... recent head contractor success and *c2pi* ranking case studies* have shown a strong correlation [$r^2=0.71$]

c2pi RANKING **68** BB-8 Shopping Mall Redevelopment, Naboo

PROJECT INNOVATION actual margin (%) **9** head contractor success (HCS) **6**

Cost:

	planned	actual	change
Construction contract (\$million)	100.00	115.00	15.00%

Time:

Activity on site (weeks)	60.00	58.00	✓ -3.33%

Earnings:

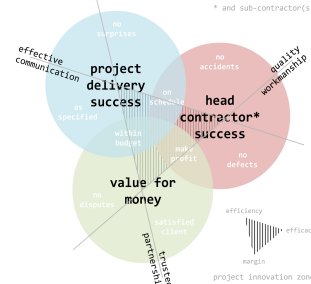
Profit/loss (\$million, before tax)	7.50	10.00	✓ 33.33%

project ranking

The project innovation zone is the intersection between project delivery success, head contractor success and value for money (see diagram opposite). Head contractor success is measured on a scale of -10 to +10, where the border of success and fail is set at zero. Client-contractor project innovation (*c2pi*) is expressed on a scale of -100 to +100 (positive values indicate innovation took place).

innovation database

This worksheet can be duplicated or renamed to create a ranked database of projects.



KPIs

	change
efficacy (earnings/time)	✓ 37.93%
efficiency (cost/time)	✓ 18.97%
margin (earnings/cost)	✓ 15.94%

resourceful (<i>c2pi</i> ≥ 50)	✓
well-managed (HCS ≥ 5)	✓

COMPLEXITY

	1-3
X: scale	2
Y: uncertainty	1
Z: stakeholders	2

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comments

This project is a private sector investment by Lucas Enterprises Pty Ltd that deployed an innovative approach of interlocking precast concrete wall panels delivered to site just in time for installation. Panels did not require conventional temporary bracing. A lean philosophy was applied throughout the project to eliminate unnecessary delays, wasted effort and rework through zone-based supervision and digital quality assistance protocols using point cloud laser scanning.



SUCCESS RUBRIC

	-2	-1	0	1	2	LESSONS LEARNT
NO DEFECTS	Significant defects at our cost, some remain outstanding	Numerous defects, all fixed but some at our cost	Numerous defects, all fixed by sub-contractors/suppliers	Minor defects that were easily rectified	Zero defects	Proper supervision eliminated serious defects and associated rework
ON SCHEDULE	Finished much later than expected	Finished late	Completion on time	Finished early	Finished much earlier than expected	Good schedule management, but consider use of Last Planner System for further efficiency on future projects
MAKE PROFIT	Margin was negative	Below expectations	Met expectations	Above expectations	Well above expectations	Few estimating errors plus prudent use of contingencies and trusted sub-contractors maximized margin
NO ACCIDENTS	Major incident occurred involving loss of life	One or more reportable (notified) incidents were life-threatening or near miss	No reportable (notified) incidents were life-threatening	No reportable (notified) incidents occurred	No incidents occurred	Safety of the workforce onsite was enhanced by regular training of sub-contract labour
QUALITY WORKMANSHIP	Well below expectations	Below expectations	Met expectations	Above expectations	Well above expectations	Precast concrete wall panels manufactured offsite improved quality and dimensional accuracy

* this research has been recently published in the Q1 journal [Engineering, Construction and Architectural Management](#)

move over 'earned value', *i3d3* now supports monthly progress tracking of project delivery success scores ...

A recent extension of *i3d3* makes it capable of routinely recording cost, time, scope and risk progress to track monthly project delivery success (PDS). This method, called optimal procurement evaluation (*OPe1*), augments traditional earned value analysis with a single dynamic and objective measure of how project managers can progressively align procurement performance to PDS success criteria to: (a) deliver value to stakeholders, (b) optimize project efficiency, (c) increase delivery speed where needed, (d) introduce innovative ideas, (e) reduce unnecessary complications, and (f) minimize environmental impact.

Earned value is a technique that is used worldwide by over a million certified project managers. Tracking PDS with *i3d3* provides even better advice and ensures that individual work packages are managed with overall success in mind.

Not all projects contribute to the 17 United Nations Sustainable Development Goals, but where appropriate, *i3d3* can demonstrate success towards these goals according to objective financial, social, ethical and environmental consequences as shown below.

> Financial



> Social



> Ethical



> Environmental





The *i3d3* model is proudly endorsed by the Global Alliance for the Project Professions (GAPPS), which is a volunteer-driven, non-profit alliance that provides a reliable source for comparison of project-based standards and qualifications. Endorsement occurred in 2021. More information about GAPPS can be found at <https://globalpmstandards.org/>.

Please contact our Product Liaison team if you would like to partner with *i3d3.net* in this innovative research agenda and be part of a unique opportunity to make a difference to our world.

Published Supporting Research (International Journals)

- Ghanbaripour, A.N., Langston, C., Tumpa, R.J. and Skulmoski, G. (2023) Validating and testing a project delivery success model in construction: a mixed method approach in Australia, *Smart and Sustainable Built Environment* (published online 23 January – <https://doi.org/10.1108/SASBE-09-2022-0200>). [Q1]
- Abu Arqoub, M., Ghanbaripour, A.N., Langston, C. and Skulmoski, G. (2023), Beyond design and delivery: developing a model to measure end-user satisfaction (delight) in projects, *Built Environment Project and Asset Management*, 13(4), 509-534. [Q1]
- Langston, C. (2023) The empirical relationship between contractor success and project innovation, *Engineering, Construction and Architectural Management*, 30(6), 2231-2254. [Q1]
- Langston, C. and Crowley, C. (2022) Fiscal success: creating quality infrastructure in a post-COVID world, *Sustainability*, 14, 1642, 1-23. [Q1]
- Langston, C. and Crowley, C. (2021) Evaluation of transportation infrastructure: a case study of Gold Coast Light Rail Stage 1&2, *Construction Economics and Building*, 21(4), 1-20. [Q2]
- Ghanbaripour, A., Golmoradi, M., Langston, C., Skulmoski, G. and Abu Arqoub, M. (2020) The effect of project manager's management style on project delivery success in construction projects, *International Journal of Construction Management* (published online 23 October 2020). [Q2]
- Ghanbaripour, A.N., Langston, C. and Yousefi, A. (2017) Implementation of 3D integration model for project delivery success: case study, *Journal of Construction Engineering and Management*, 143(8), 1-13. [Q1]
- Langston, C. (2013) Development of generic key performance indicators for PMBOK using a 3D project integration model, *Australasian Journal of Construction Economics and Building*, 13(4), 78-91. [Q2]