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Rethinking Project Profit in the Data-Driven Era

COMBINING DATA, RISK CONTROLS AND RISK RETENTIONS STRATEGIES TO DRIVE BEST OUTCOMES

We have entered the digital construction age where an increasing number of contractors are devising improved data architecture for their organizations, and are harnessing the power of digital data capture, at a project level, to drive best project outcomes. Given this growth in data science strategy and improved digital data capture at a project level, it might be time to start rethinking how the construction industry sets its profit and earns its profit. Traditionally profits are set using some combination of historical practices, gut instincts, consideration for type of asset being constructed and a moderate level of reflection on specific project risks. Earning of job profits are often done utilizing the percentage complete method whereby profit is earned on each job based on how much of the project is complete (using current costs over original budgeted costs to set the percentage complete) and multiplying that percentage complete by the estimated job profit. So if the current costs are \$50,000 and the entire budgeted costs were \$100,000, the percentage complete is

50% (or $(\$50,000/\$100,000) \times 100$). Profit earned to date is then determined by multiplying percentage complete (50%) by the original budgeted profit – let's say estimated profit was \$7,000 on this project thereby creating a profit earned to date of \$3,500 (or $50\% \times \$7,000$). These methods for profit setting and determining earned profit have proven effective but we are now in a different age of construction where there might be room for a more sophisticated framework when setting project profit levels and determining how much of that profit is truly earned.

Before we get into what a new framework for setting and earning project profit might look like, let's discuss what profit on a project truly represents. Project profit is the amount of money in excess of project costs that a construction contractor is entitled to earn for taking on the risk of constructing a specific asset. It is their reward for taking on the project risks. Some consider project profit to be a buffer of sorts that absorbs project risks that were not contemplated in the project costs – a project "shock absorber" of sorts. This concept of project profit acting as a shock absorber is further emphasized by the fact that some contractors will break profit up into: i) profit, and ii) contingency, whereby contingency represents a pool of money in

excess of the estimated costs to cover unforeseen costs associated with executing the construction project. Project profit and project contingency represent a very interesting pool of capital that could be utilized more effectively in a rethought framework for setting and earning profit. Further, the job has a substantial amount of money set aside to pay for project specific insurances and performance security (i.e., surety, subcontractor default insurance, letters of credit, etc.). This is the project specific insurance and performance security premiums and represents consideration for the coverage afforded by these project specific risk transfer solutions.

Now back to the idea of proposing a new framework for setting project profit, and how that profit is earned, given this new age of data science and digital data capture we have entered. The following are steps that construction contractors, and their partner stakeholders, might want to consider implementing in an attempt to evolve the framework for setting job profit and earning job profit:

Data Architecture

“Get Your Data House in Order” – If profit, and project contingencies, are truly the “shock absorbers” for project risk, then it is paramount that today’s construction contractor (and other construction stakeholders) get much better at capturing project risk data in order to develop a quantitatively determined framework for setting project profit. Contractors should harness the power of project management technologies and risk management information systems (RMIS) to start building their project risk data lake.

These technologies should utilize a well thought out data architecture that allows the contractor, and its construction stakeholder partners, to more accurately identify the likelihood and severity of project risks by various filters like project type (commercial tower, hospital, road, bridge, transit line), and project delivery model (design-bid-build, design-build, progressive design-build, integrated project delivery, alliancing, etc.). With a sound data architecture all project stakeholders are in a much better position to truly identify and quantify project risks and thus more thoughtfully assign capital in excess of costs to those risks (contingency that will turn into profit if risk is managed effectively). As referenced above, don’t forget the insurance and performance security premiums when determining ideal allocation of capital in excess of direct project costs. This premium is potential project profit as well depending on your appetite to take on risk.

Risk Control Application

“Know the Solutions that Prevent and Mitigate Biggest Project Risks” – Once top risks have been identified, quantified and prioritized, utilizing the improved data architecture referenced above, you should now determine which risk control tools can be implemented, and invested in, to prevent and mitigate these top project risks. Such a matching of top risks to most effective risk controls will ensure potential profit turns into real profit.

Risk controls can be categorized into three primary categories: i) contractual risk controls – managing risk through construction contract frameworks and/or specific construction contract clauses that ensure best risk allocation and risk treatment, ii) operational risk controls – ensuring all project stakeholders utilize best operational practices in order to treat to project risks, iii) technology risk controls – harnessing the power of vast inventory of digital solutions available at a project level and amongst project stakeholders, in order to gain early identification and treatment of top project risks. A key factor in determining your choice of project risk controls will be having the ability to measure the impact of these risk controls – those risk controls with a proven track record of risk suppression should provide you with confidence in taking on these risks (and potentially retaining them vs transferring them for a premium).

Risk Retention and Risk Transfer Decisions

“How Much Risk Should You Retain and How Much Should You Transfer to Risk Finance Markets?” – If you have a sound data architecture that allows you to not only quantify project risks via various project filters, but also allows you to measure the effectiveness of risk controls you plan to implement to treat top project risks, you should be in an ideal position to determine how much risk you should retain and how much risk you should transfer to risk finance markets (insurance and financial markets). Such risk retention decisions can be done on a risk specific basis and what you previously had as a blanket pool of funds in the form of profit and contingency, can be used to fund the retentions on those risk specific risk finance towers (i.e., retentions on project specific insurance policies). Under such a framework, the funded retentions become your future profit and as these risks diminish down to zero you can sweep the funded retentions into ‘true’ profit, or profit that is completely free of contingency exposures. Using a more risk specific actuarially determined approach to measuring project risks will



vastly improve the ability to quantify project profit throughout the project's life. Rather than relying upon the less sophisticated methodology of tracking job profit using the "percentage complete methodology", you will now be able to track profit on a "risk reduced/removed" methodology.

NOTE: As you find ideal combinations of capital allocation combining profit, contingency, funded retention and premium, on a risk specific basis, you can harness the power of those risk specific funded retentions to drive improved adherence to risk controls – imagine a portion of the funded retentions representing bonuses employees and stakeholder partners could earn if they adhere to the prescribe project risk control recipe.

Through the implementation of the above three foundational steps, your organization, as well as your stakeholder partner organizations, can start developing a much more logical and sophisticated framework for determining project profit. This framework harnesses the power of improved data science methodologies, and improved ability to capture and organize enterprise and project data, to deliver greater insight around project risk, project risk management, and thus drive better project outcomes. By more granularly categorizing and treating project risks, you have a much better opportunity to manage these risks and thus provide greater assurance of risk minimization and profit certainty.

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