Integrating the cost variance (CV) and expected monetary value (EMV) in the report for construction project control

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Since Risk assessment outcomes need to be integrated into the project control report, this work shows how a two-step procedure could combine risk and earned value management (EVM) results and shown together using a Business intelligence (BI) report to highlight the decision-making process in the project control of a construction project. The reason why it has been chosen these two methodologies is that the earned value represents the past of the project. While in the other hand, risk assessments through the expected monetary value (EMV) metric represent the possible future impacts in an economic language.

The first step is the sum of an indicator from past results (EVM) and cost variance (CV) added to possible outcomes in the project's future gathered for risk management analysis, obtaining a holistically better indicator of project health. For example, in a case that EVM provides a CV of -50’000 and the EMV for a cost account is -40’000 as a possible loss, a total loss of -90’000 is potential. This measure gives up a combination of current performance and future impacts in this cost account.

The second step is calculating the ratio of dividing the “CV+ EMV” by the cost to complete (CTC) of the current cost account; in the previous example, in the case that CTC is 1’000’000, this ratio is -9%. So, with this additional calculation, how much percentage of the remaining cost is an overall potential gain/loss?

After summarising by cost account for the entire scope, the project status could be said. In conclusion, with the addition of these two calculations, the past and future of the project performance have been integrated into the project control report.