Three Steps to Validate a Variance

Any monitoring and control process has three components, the first is establishing a baseline that you plan to achieve, the second is comparing actual progress to the plan to see if there are any differences, the third is taking corrective or preventative action to bring progress back into alignment with the plan. Corrective actions fix existing problems, preventative actions stop further problems occurring in the future.

This post looks at the middle phase, before taking action to bring performance back into alignment with the plan, it is a really good idea to make sure the variance you are seeing in the control systems is real. Corrective and preventative actions take time and usually involve costs, there is no point in expending effort where it is not needed.

The difference, or variance, between the planed state and the actual situation, as it has been measured, is a precise value calculated from the difference between two imprecise elements. The plan is based on estimates and assumptions made some time ago about what may occur in the future. All plans and estimates have a degree of error built in; it is simply impossible to precisely predict the future of a complex system such as a project. Similarly, the measurement of the 'actual' situation is prone to observational errors; key data may be missing or the situation misinterpreted.

So how do you decide if the measured variance is real enough and significant enough to warrant taking action to correct? I suggest there are three things to consider:

1. Does the reported variance line up with your expectations?
2. Is the variance significant?
3. Is a solution viable?

Does the reported variance line up with your expectations?

The first question to ask is does the reported variance line up with your expectations? If a cost report says there is a profit of $10,000 in a work package[1] where you expected to see a loss, there is a high probability some of the actual costs incurred have been missed from the report (maybe some invoices have not been received or processed). The simple fact is either your expectations are misplaced or the measurements contain data errors - you need to resolve this question before moving on. When the variance and your expectations agree, you can be reasonably confident the information as measured is reasonable correct.

A good cross check is to look at a couple of different monitoring systems, maybe cost and time, do the two systems correlate or are they giving you very different information on the same group of activities? If they correlate, maybe your expectations are misplaced, if they are giving different information then there are data errors somewhere.

[1] For more on ***work packages and Earned Value Management*** see: https://mosaicprojects.com.au/PMKI-SCH-040.php

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Is the variance significant?

The second question looks at the significance of the variance. Point measurements are prone to error simply because you have to assume a lot to record the measurement, you may be sure a 10-day activity has started, and equally sure it has not been completed but if the work is about half done should you record 40%, 50% or 60% compete? Sometimes measurements can be made of production, most of the time there is an assessment.

For example, if the predicted slippage on the completion date for a key milestone over a series of reports is 'bouncing around' any single measurement that is within the 'noise factor' is likely to be insignificant. If a series of reports showed: status at report 7 = -5 days, report 8 = + 2 days, report 9 = -6 days and the current report shows -4 days it is more likely the measurement system is imprecise, than the work is failing to maintain schedule. Therefore, provided there is still a couple of weeks to go before the milestone due date, the -4 days is unlikely to warrant significant attention.

Trends on the other hand do highlight issues. If the same series of reports showed: status at report 7 = + 6 days, report 8 = + 2 days, report 9 = -1 day and the current report shows -4 days, you know the work is failing to keep up with the plan and unless action is taken the milestone will be missed. Sensible control systems have range statements that indicate the variance is too small to worry about if it is inside the allowed range, but this general rule is modified to take trends seriously and also to require action to correct negative variances close to a milestone or completion.

Is a solution viable?

This third question looks at viability. Can you actually take action to resolve the variance for a sensible cost? Some issues are simply outside of your control, for example, changes in the exchange rate can have significant cost consequences on the buy price of goods or services you are importing 'this month', but there is nothing you can do to affect the exchange rate. Risk planning and mitigation may have been able to minimize the issue in the past, but if you need the import this month, you have no option but to pay the current prices.

Other situations are simply not worth the cost. There is no point is spending another $10,000 to correct a -$5,000 variance. However, this decision has to take into account any effect on the client and your organization's reputation. Cost overruns are generally internal, whereas late delivery and quality issues may have a significant reputational cost affecting stakeholder perceptions of the whole organisation, that will warrant action.

Where a viable option exists to correct negative variances, corrective and preventative actions need to be planned, prioritized and implemented! There is no point wasting time on a controls system that does not generate effective controlling actions.

Final thoughts

Two final thoughts:

1. First don't forget the positive variances, similar questions need to be asked, but the action is to amend the plan to lock in the gains. If your supplier is going to deliver some equipment 3 weeks ahead of schedule can you reorganize the plan to make sure the installers are available 3 weeks sooner than the original plan? If this is viable make sure it happens and you 'lock-in' a 3-week gain.

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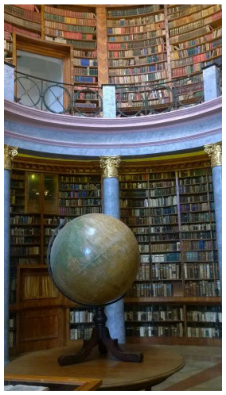
If you fail to take action, the installers will turn up 'on-schedule' and the gain generated by your supplier will be lost.

2. Second, implementing corrective and preventative actions requires the resources working on the project to do something different. Variances don't correct themselves and simply 'telling' someone to 'catch-up' is highly unlikely to have any effect. Sensible management action, decisions, and leadership are needed to physically change the situation so there is a correction in the way work is performed. This is a core skill of every effective manager.

Variances are normal, the fact they exist is to be expected, and the fact they change report to report is to be expected. The information simply needs to be used pragmatically (the purpose of this article) to retain control. Conversely, one key indicator of a defective surveillance system[2] is when everything is consistently reports as being on schedule and/or variances remain the same from report to report – either of these situations indicates either the system is incapable of measuring change, or the data is being manipulated to 'look good' in the report. Variation occurs in every system, what's needed is a controls system that keeps the degree of variability to an acceptable level.



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[2] For more on ***surveillance systems*** see: https://mosaicprojects.com.au/WhitePapers/WP1080_Project_Reviews.pdf

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