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NSSA-370
HW#9

1) Why are monitoring and controlling important in projects?

Both monitoring and controlling the project help to ensure project success. These processes are used to sustain the project's progress – while it is observed and updated constantly – in order to keep up with project objectives and performance goals. During monitoring, important information, including the changes or variances of any of the six project success factors (scope, time, cost, resource, performance, and value), has to be gathered from project status reports and reviews (*two common project documents that reflect changes in the project's progress*), measured using performance metrics (e.g., efficiency, and effective management of stakeholder involvement/commitment), and passed to the decision maker(s) who care most about this information: in particular, the project manager and/or people in management with at least the same amount of authority as the project manager. An active monitoring of such factors allows the project team to make more accurate predictions of the project's eventual outcome (success or failure), and identify specific barriers that need workarounds in order to prevent the growth of project risks/defects.

For workarounds to be effective, both monitoring and controlling have to be done; together, these processes simplify the project team's ability to compare the current state of each project success factor with its desired state in accordance with the project management plan. As a result, the project team is able to easily identify both existing and new project risks; effectively apply risk mitigation plans/techniques; respectively assess project performance and take appropriate actions to reach performance goals; wisely update schedules for project activities, allocate available resources, and modify pertaining costs; and finally, keep in check all project changes upon their approval by the project manager or a senior-management individual. In addition, all of these changes, due to the actions taken – and lessons learned after these actions were taken – have to be documented; and those specific to budget, schedule, and resources have to be communicated to all stakeholders involved in the project, consistently. Most – if not all of these actions – help mitigate issues & risks before they get more costly further along the project lifecycle, and cause further project delay (or even project termination – if decided by senior management – especially when corrective actions are taken properly and successfully – because the project's eventual outcome may no longer align with senior management's priorities, or may not provide the direct and/or long-term benefits that senior management wants). On the whole, monitoring and controlling allow for early detection and intervention of risks/issues/defects; alignment of project plans, including risk mitigation plans, to project scope; a wise allocation and management of resources; and maintenance of approved changes, only – all of which contribute to the realization of project value and project success.

9) Why is Earned Value Analysis used in project management?

Earned Value Analysis (EVA) is specifically used in project management to help make necessary revisions or updates to the planned/desired costs and schedules in order to keep up with the actual project costs and schedules. Unlike many old-style techniques – which compare between the estimated budgets/schedules and the final actual costs (at the end of the project) – EVA allows the project manager to see even the minor changes in the actual costs between any start and end periods defined on the project lifespan. In other words, old-style techniques offer just a high-level analysis of the changes in costs and schedules, while EVA provides more clarity of detail with regards to those changes. EVA gives the project manager a better understanding of how the project's status will drive the project forward (e.g., how the amount of work completed so far, the amount of resources used, and the current total costs will affect the expected time to project completion); and keeps the project manager aware of unexpected areas, such as possible risks that could result from the states of costs, schedules, and work progresses at each stage of the project lifespan (conceptualization, planning, design/development, implementation, project closure, and post-implementation review). EVA also allows the project manager to see the high-level changes throughout the project lifespan: costs and resources are extremely low at the beginning, but increases gradually until their peak in the middle stages; and from that point on, they continue to deplete until project closure.

Again, EVA indicates how the project is doing (in terms of costs, schedules, resources, and performances) and where it needs to be improved, encouraging the project manager to identify issues & risks before such success factors – stated in parentheses – worsen further along the project lifespan. Besides having a more accurate understanding of the project progress and early warnings of potential defects – and being able to plan ahead – the project manager can also benefit from using EVA in other ways. EVA helps the project manager realize – in real-time – whether the project is over budget, on budget, or under budget by calculating an important metric, Cost Performance Index (CPI), which compares the amount of work that's completed so far (earned value) to the actual amount of work required; a CPI < 1 means the project is over budget; a CPI = 1 means the project is exactly on budget; and a CPI > 1 means the project is under budget. EVA also allows the project manager to tell whether the project is behind schedule, on schedule, or ahead of schedule by calculating a similar metric, Schedule Performance Index (SPI), which compares the current schedule (earned value) to the one that's planned from the project's inception; an SPI > 1 means the project is ahead of schedule; an SPI = 1 means the project is right on schedule; and an SPI < 1 means the project is behind schedule. With such measurements at hand, the project manager may use them to ensure the current project is on track and meets at least the triple constraint (scope, time, and cost), and to make better analyses for both the remainder of the current project and other projects.

Grade: 90 / 100

Professor's Feedback:

Measurement data points can be obtained by many means - you mentioned two of them. Basically, whatever metrics have been established can be instituted throughout most of the life cycle. I would say the biggest value of monitoring is to catch problems in their infancy so the team has a better chance of absolving them.

Monitoring is all about identifying variances. This chapter focused on cost but there are other area's such as quality (which you alluded to when mentioning defects).

Controlling is having a plan to deal with the variances when detected. Hopefully, integrated change control is employed to address these variances.