PM BlackJack - The 21 things your Project Sponsor really wants to know

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Introduction

When your project manager is dealt a good hand, projects run smooth. But how easy is it to read the play when the cards run cold and things get tough? Your project updates need to provide enough information to know when it is time to double down, when it is time to raise the stakes and when it is time to fold. This presentation will provide you with 21 key project performance indicators that can be used to help drive decisions and most importantly, gauge the odds of your project's success.

KPIs

The classical definition of a KPI is found in Wikipedia and described as follows:
Key Performance Indicators are mainly used to monitor performance and to provide a real-time view of the effectiveness and progress as it relates to expectations.
The purpose of identifying and tracking performance indicators, is to be able to react to problems in a timely manner, as well as being able to recognize and reproduce positive results. KPIs are used in many different industries and track different types of metrics from one industry to another. In the marketing industry, you might see KPI's that track the performance of different types of marketing events, or the ratio of calls that lead to sold deals; these metrics drive the types of events that will be repeated based on proven results. In the manufacturing industry, you see the ratio of defects per million units produced, which in turn is used to identify machinery or processes that are faulty or need repair.

When determining the KPIs for managing a project, the performance metrics need to be around the processes used to manage tasks and resources. Project management practices are universal regardless of the type of project being managed; and the Project Management Institute (PMI) has published the Project Management Book of Knowledge (PMBOK) with a methodology of proven processes for managing project. These management processes are applicable to the management of any type of project in any industry or technology and are categorized into what PMI calls project knowledge areas.

Knowledge Areas

The PMI knowledge areas are categories of activities that focus on the management of the project. The knowledge areas that will be discussed include Project Integration, Scope, Risk, Quality, Cost, Communication and Human Resource Management. Each of these areas have specific processes, inputs, outputs and activities that are utilized to facilitate, monitor and control the project. Most of these knowledge areas refer to commonly known activities such as project integration (the activities used to control and monitor the project), scope (definition and containment of what needs to be completed), the risk (things that may either negatively or positively impact the project), the quality (accuracy and reliability of what is delivered), the cost (budget versus actual), communication (who hears what and when), and human resources (the delivery team and those impacted by the outcome of the project).

This paper will describe 21 KPI's used to monitor a project's health and wellness. 21 isn't just a random number, it was arrived by looking at 7 of the PMI knowledge areas and analyzing three key processes from within each of the seven (7x3=21). For each of the 21 indicators, we will discuss the best way to measure and monitor this process; and how this indicator can be used to drive change, analyze overall performance and provide critical input to key decisions. These 21 metrics will provide your executive team with a real-time gauge of the project's performance.

Project Integration Management

Within the Project Integration knowledge area, are processes that are used to define and control the project. When considering various performance indicators within this area, one of the first that come to mind, and the first of our 21, is the evaluation of the project progression against plan. This is the first KPI, and also most often the only KPI that is reported. Most project managers will report the progress against the baseline plan and indicate which activities are currently ahead or behind schedule. While this information is important, it is only part of the equation

in evaluating progress. Included in this evaluation must be the impact of the current status and what this impact will have on the project goals – are things ahead of schedule or behind? Where did the original plan indicate the project schedule should be at this point in time? Has the project's critical path been altered by the current status. Based on evaluating the status against plan, the management team can begin to consider if it is necessary to make resource or budgetary changes. This indicator is also the most common symptom exhibited when something is wrong. It is the initial warning sign and the management team must dig deeper, becoming more critical of how the project is being controlled in order to uncover the real issue and apply the most effective corrective action.

The 2nd KPI within Project Integration is the evaluation of the effectiveness of the controlling processes for handling project issues. In other words, how effective are the current procedures for identifying, monitoring, resolving and escalating issues? This is a fundamental indicator that should be analyzed if the project is beginning to slip behind; because unresolved issues are a major reason for project slippage. If the project manager does not have an approved escalation process or the process is ineffective, the executive team has the authority to make the organizational changes necessary to empower the project manager to change the process, to escalate across departments or above the current management team. If the organization does not recognize or respect the authority placed upon the Project Manager, the most effective course of action is a directive from the Executive Management team.

The 3rd KPI is the identification of patterns in the types of issues that are being identified. Is there a particular department within the organization that is the source of the issues, or maybe a particular resource (person or hardware), or technology? By identifying patterns in the types of issues, the project manager may be able to take a more global approach, looking at the bigger picture to resolving the issues; ensuring they are addressing the real issue and not just the symptom of a bigger problem.

Scope Management

Project scope is often set by considering various boundaries such as cost, organizational impact and time lines. Arriving at the final definition of project scope requires a negotiation and compromise within at least one of these areas. Final scope may look somewhat different than initially conceived when all the boundaries are considered. The 4th KPI deals with the clarity of scope within the organization. You may find that the executive description and understanding of scope is quite different then the definition understood by the business community. The best way to measure the clarity of scope is to consider how much time and effort is spent defending project scope. The Requirements and Design phases will push the boundaries of scope the hardest and this will be the time when a Project Manager will see the true clarity of scope within the organization.

> *An example of this might be that the business community assumed that business processes were going to be re-engineered, but executive management had assumed process replication. The major differences between these two approaches become apparent in the amount of time needed to analyze processes and define future state. The time allocated for re-engineering will be significantly greater and if the scope was to replicate, then the project timelines will begin to slip as the business analyzes ways to become more efficient and the impact of change extends across multiple departments. If scope is unclear or there are major differences between assumed and approved scope, then executive involvement will be needed in order to shift the scope paradigm through-out the organization. (Notice that the initial symptom of this issue was the slipping of project timelines)*

Even when the scope is well understood through-out the organization, there is often a true need to make a change. Each addition to the scope typically results in an addition to the project cost. As part of the project planning, a common guide line is to have a 10% accrual for project scope changes. The 5th KPI deals with the budgetary impact of scope changes. Remember that scope changes come in many forms – from additional development needs to additional hardware of software needs. In reporting scope metrics, ensure it includes how much of the scope accrual has been consumed by changes to resource needs, hardware needs or software needs.

The 6th KPI measures the timeline impact to the project of all scope changes. Will the accumulated changes cause project timelines to shift later or in the event of a reduction bring the project to completion earlier than planned? And what is the impact of this change? Most projects are just one element within an overall enterprise plan; with other projects relying on your project's timeline & deliverables as critical integration points to their project.

Knowledge of total impact of a change is a critical component within the monitoring, controlling and execution of your project. Ensure you are able to measure and analyze the total cost and time impacts when considering each and every project scope change. Ensure that the impact analysis extends beyond this project and across the entire organization.

Risk Management

During Project Initiation, project risk should be analyzed. Included in this risk analysis are such considerations as the risk this project brings to the organization, the risks associated with implementing new technology, the risk of resource availability and even the risk of being able deliver within the definition of the project budget. As the project proceeds, it is the project manager's responsibility to continue to identify and track all project risks. This leads us to the 7th KPI, which is the effectiveness of the processes defined for managing risk. Risk management processes must include documenting, quantifying and analyzing impact, then identifying and assigning risk owners to monitor each of the risks. The effectiveness of this process can be measured by first ensuring they are in place by a review of the project's Risk Register; then analyzing the changes made to this register through the project lifecycle. A well managed project will have an active risk register, with updates being recorded on a regular basis to monitoring techniques, mitigation plans, and even the addition & elimination of risks.

Just as scope change is an inevitable part of a project, so is the realization of project risks. Even with effective risk monitoring processes in place, some risks cannot be prevented. The 8th KPI deals with effectiveness of the risk mitigations plans. As risks are realized, it is important to analyze each mitigation activity to determine if the mitigation has created additional risks to the project. An example of this might be as follows.

> *The project's travel budget is at risk of being exceeded due to the increasing cost of travel expenses. With the additional cost of fuel, travel flights have doubled and the travel budget is quickly being depleted. The risk-owner has determined that the mitigation activity for the budgetary risk is to cut project travel in half; and have out-of-town resources work remotely on project deliverables. While this mitigation decision will cut down the cost of travel, it has now introduced an additional risk. Without resources on-site, your project is now at risk of not meeting some of the training goals initially defined in the training plan. The training plan assumed side-by-side knowledge transfer between project-resources.*

The project manager should be reporting on the effectiveness of the mitigation activities along with analyzing the effect the mitigation activity may have had to other project goals or objectives. In the example above, a mitigation plan for the training risk might be to change the training approach to use real-time webinars versus side-by-side knowledge transfer. The use of webinars may have a cost implication, and once again the mitigation plan should be analyzed against the overall project goals – in this case the budget. Project Managers must always be analyzing the impact of their decisions.

The 9th KPI is the identification of patterns within realized risk. Are there technology risks that are being realized at a significant rate? Are there particular departments or resource areas that have introduced risks that are beyond the project manager's ability to mitigate? By analyzing and identifying patterns in realized risk, the project manager may find that the mitigation plan requires changes that are beyond their scope of authority – changes to organizational structures or changes in inter-departmental processes. When realized risks are significant in nature and cannot be mitigated, the executive team might need to consider the viability of continuing the project.

Cost Management

Performance measurements around cost are some of the most common indicators of a project's performance. The three KPI's in this knowledge area deal with measuring Actual Costs against Projected Costs, Cost Estimate at Completion, and Earned Value. Each of these metrics should be included as part of regular executive status reports.

KPI #10 is the evaluation of the project's Actual costs against Projected Budget cost. Included in the analysis should be the cost of hardware, software licenses, resource (internal & external), travel, training and contracted services or resources that are being utilized within the scope of the project. The cost schedule will need to be defined at the beginning of the project, with a monthly (or weekly) burn-rate schedule defined for each cost category. This projected schedule can then be compared against the actual costs being incurred by the project.

As the actual costs are entered into the cost schedule, the 11th KPI can be calculated, which is the Estimated Cost at Completion (ECC). ECC is calculated by taking Project Actual Costs To-Date + the remaining Baseline Budget. Maintaining the cost schedule is a regular activity of the project manager, either directly or through the communication of costs to a project comptroller or accountant.

The 12th KPI is the analysis of the earned value of project deliverables, commonly referred to as Earned Value Analysis (EVA). Earned Value Analysis (EVA) was initially developed by the US Department of Defense to determine the performance of large military procurement contracts. This performance monitoring technique can be applied to any type or size of project. EVA looks at three basic parameters:

- *What value of work SHOULD have been accomplished to date?*
- *How much value has been realized to date?*
- *How much has actually been spent to date?*

There is a common misconception that it is extremely difficult to measure the earned value of a project. But if the project has been setup from the beginning to track EVA, measuring EVA is simple.

There is a Four step process for setting up a project to track the Earned Value:

Step 1 - Define the work (the work breakdown structure)
Step 2 - Plan the Value (assign a value to each work item – either in hours or dollars)
Step 3 – Determine the Earning Rules that will be used for each item. There are several earning rules that can be used that are very easy to implement. Determine the one that best fits based on the type of project being managed:
0/100 Rule – no value until work is finished
20/80 Rule – 20% value when work started, 80% when finished
50/50 Rule – 50% value when work started, 50% when finished
80/20 Rule – 80% value when work started, 20% when finished
% Complete Rule – (this is the most subjective and hardest to quantify in an IT world)
Step 4 – Work and measure the project according to plan

Resource Management

One area that is often overlooked from a project monitoring aspect is the area associated with monitoring the actual resources in terms of effectiveness and the processes used to manage the team. Team effectiveness can be affected by many different factors, from the processes used to on-board to the working conditions the team performs under.

The 13th KPI analyzes the effectiveness of the processes used when resources join the team; often referred to as "OnBoarding". These processes are important to a project's success because they ensure that the resources have the access, knowledge and ability to be productive and contributing team members as quickly as possible. To analyze the effectiveness of these processes, measure how long it takes (from the day they join the team) to be able to access all the systems, software and devices. No resource should wait more than 2 days to have access. As resources leave the team, (either according to plan or even under unplanned circumstances) evaluate the processes used to transfer knowledge to a surviving member. Included in the "off-loading" process should be a summary of work performed, index of work deliverables and deliverable specific overviews. *(Notice that the initial symptom of this issue may be exhibited by project timelines slipping)*

Almost every project team will experience turn-over of resources through the course of the project life-cycle. Project managers should plan for 8-10% of the team resources to change unexpectedly. The 14th KPI focuses on measuring the Team's Volatility and Strength. How much turnover is the project experiencing, if it is greater than 10% what are the contributing factors behind the turnover? Are there specific roles or areas within the team that are experiencing more turnover than others? From a team strength perspective, consider if the project team is staffed according to plan. Aare there team roles that have gone unfilled or under-filled? Are there resources that have been assigned to the team, but are still working their old jobs - now expected to do the work of two people? *(Notice that the initial symptom of this issue may be exhibited by project timelines slipping)*

The 15th KPI, focuses on the effectiveness of the team and adds another dimension to determining project team strength. The effectiveness of a resource can be impacted by many different factors including personality conflicts, the stress of unrealistic expectations, significant and constant changes in requirements, the mental & physical drain

of traveling, limited experience / knowledge, and even the teaming space in which they work. One symptom of an ineffective team member is when multiple deliverable dates begin slipping. Project Managers must evaluate each resource to determine their effectiveness and be able to analyze the root cause of this effectiveness. Period checks on each resource, in addition to analyzing team volatility and strength is important to monitoring the projects chances for success. The executive team should receive a periodic report on the strength of the project team. Only the executive team will have the authority to make the organizational changes needed to resolve situations where project resource needs are not staffed, are ineffective, over burdened or underutilized.

Quality Management

When it comes to delivering a project, the quality of what is delivered is just as important as the time in which it is delivered in. An important aspect of planning the delivery of a project, is planning for quality – which means defining quality metrics and how quality will be measured and tracked before the project begins. The 16th KPI is the completeness of the Quality Management Plan. Ensure the standards by which quality will be evaluated have been defined. Part of the definition has to include an analysis of the cost of quality; zero defects per million units produced will be costly to implement, but if the cost of a defect is significant it is worth the additional cost of ensuring quality. Determine a reasonable level of quality that makes sense for the type of project you are managing. Another component of the Quality Plan will be the process for monitoring and correcting quality issues. The process definition must include roles and responsibilities for all team members. Finally, the plan must include specific and measurable quality deliverables for each phase of the project.

Each phase brings a different type of quality metrics and deliverables. The 17th KPI deals with analyzing the types of quality issues that are uncovered during each phase of the project. During requirements analysis, quality deliverables and issues might be found in the ability to effectively identify and accurately document requirements. The design phase may introduce quality issues associated with documenting and validating integration points. The development phase may uncover issues in the quality of coding or configuration. The Testing phase may uncover more than just development issues, but also issues in the handling of regression testing after remediation. Once again, the Project Manager needs to be categorizing and looking for patterns of behavior; then determine if they are symptomatic of a bigger issue.

Another aspect of quality management is the effectiveness of remediating quality issues. If a team does not learn from its mistakes, it is destined to repeat them. During the categorization of quality issues, analyze the remediation process to determine if the quality issue was resolved in the following two step process: First, that the defect was corrected, and then secondly that a root cause analysis was performed to identify if processes or delivery mechanisms can be improved to reduce the chance of a repeated quality defect. This type of continual process improvement is the 18th KPI. Ensure your team is learning from their mistakes and validate that process improvement procedures are being followed.

Communication and Expectation Management

The last three KPI's focus on communicating and managing expectations. While there is not a specific PMBOK Knowledge area for Expectation Management, this is one area that is fundamental for maintaining the sanity of the project manager. The 19th KPI is found in the definition and completeness of the Communication Plan. Each member of the project team (whether they are developers, testers, subject matter experts, or team leaders) need to know what is expected of them in regards to communicating. The Communication Plan also defines the type and frequency in which they will receive information about the project.

The next two KPI's focus on monitoring and reporting on the Organization's ability to handle the project, handle the change, and handle the results of the project once delivered. The 20th KPI is an Organizational Report Card. This report card will provide insight into the effectiveness of the Change Management Team. How effective has the team been at communicating the changes that are coming, in creating a positive atmosphere and an open line of communication between the business group and the implementation team? Has the Change Management Team been effective in monitoring the organization's attitude about the changes and escalating when they are seeing significant resistance that cannot be resolved? Some typical symptoms of an organization that is resisting change include high levels of absenteeism, delays in acceptance of deliverables, a higher-than-normal rate of employee turnover, or even a reluctance to fill key project positions. The Executive team needs to be aware if the Project Manager or Change Management Team notice resistance that is impeding the team's ability to succeed.

The 21st KPI is an assessment of the Organizations ability to support itself after the "go live". The activities needed to prepare for support begin long before the deployment. The Project Management team must ensure that the Operational Support team is integrated with the development, testing and business teams to prepare monitoring and response plans that are tested in parallel with the application's business functionality. Each response plan will be based on the specific application and component design and should include business-level SLA response requirements. The Operation Dept can appropriately staff and train their team if they have been integrated into the design and testing phases. In addition to preparing operational support plans, the implementation team must be working on knowledge transfer to ensure the organization's ability to continue to maintain and enhance the application once the implementation team is dissolved.

The success of a project will continue to be measured long after project closure and will be based on how well prepared the organization for its own future. By providing the executive team with an organizational report card through-out the project lifecycle, your Executive team can manage expectations across the organization, justify and approve training plans, staffing plans and set the tone for project success that extends past project closure.

Conclusion

The key role of the Project Manager is to facilitate and communicate; and the quality of the communication is determined by its timeliness, its accuracy and its ability to positively impact the project. The key role of the Executive team is to provide insight into corporate direction through their decisions and vision, to remove obstacles that are impeding progress and to demonstrate the importance of the project through their active involvement. Executive updates that leverage the insight from these 21 KPI's, will arm your executive team with insight into what is really happening. These KPI's reveal how the organization is reacting and embracing change, provide trend analysis on risks & issues, and identify which escalation processes have been effective and those that need help. Together the Executive Team and the Project Manager can leverage each other's knowledge and insight to steer every project towards successful completion.