

Key features of pump critical thinking samples

[Business](#), [Management](#)



There are seven phases in the structure of the Performance Uncertainty Management Process (PUMP) framework. They are: (a) defining the project; (b) focusing on the uncertainty management process; (c) identify all the relevant sources of uncertainty, such as, responses options and conditions; (d) structure of the uncertainty; (e) clarifying ownership; (f) quantify some uncertainty; and (g) evaluating all the relevant implication.

Defining of the project helps in providing the effective common understanding of the project. In simple term, it helps to bring the whole team at the same page. The new members joining the team are able to come to speed with the rest of the team. This is because the project definition acts as a reference point for the whole project. Similarly, the focus of the project provides a basis and clarity of efficient processes.

The next phase helps in identifying all the relevant sources of uncertainty, response options, and conditions. Discussing in detail, here we identify all the sources of uncertainty that are relevant to the project. This is accomplished by using the structured information that is gathered during the define phase of the project. Here it is critical to identify the consequences of each sources of uncertainty; and how to mitigate the effects of these uncertainties. Lastly, all the relevant sources of uncertainty, thus identified, should be treated as assumptions.

In the next phase, review and completion of structuring is accomplished of all the uncertainty present in the earlier phases. Therefore, it becomes crucial to make obvious all the key interdependences, and the links between them. A key component of this stage would be making a distinction between ' general' and ' specific' response. Next, would be the need to clarify the

ownership. Generally, this involves allocating the financial and managerial responsibilities to all the sources of uncertainty. If required, separate financial and managerial responsibilities can be allocated. It is recommended the more emphasis is paid to broad concern, than to particular individuals. In the next stage, the uncertainties are quantified. It entails clarifying relevant conditions and estimating the size of the uncertainty. Later on, the uncertainties are broken down further into manageable portions. Next, the further refinement of the quantitative estimates is useful. Both the restructuring and refining estimates help develop better understanding of uncertainty, opportunity, and the risk.

Coming to the last phase that is to evaluate, we evaluate all the relevant implications of the uncertainties. It involves the synthesis of the results of the quantity phase, while using the appropriate dependence assumptions. This method requires a planned hierarchical approach. Instead of top-down approach, a bottom-up approach is required. This bottom-up structure should be designed in the focus phase, and further evolved in the structure phase. And, this structure should be further analyzed in this phase. This stage also involves how to making provisional decisions about how to revise the project plans in response to the uncertainty, which is to shape the project plans where required. Also, deciding how to restructure, and refine the analysis on the next pass, depending on the usefulness of another pass and available time. Therefore, it would involve making ' process decisions' refining and redefining earlier analysis.

Comparison with the other common practice processes

When we compare the PUMP approach with the other common practice processes, we come across various shortcomings in the latter approach. This conclusion is based on a number of audit risks and uncertainty management capability build over many years. Previously, organizations believed that they were following a reasonable process framework, even though they suspected to the contrary.

Next, we come on to the shortcomings of the common practice risk management processes. Upon detailed analysis we find following ten groupings. Firstly, an equivalent of the focus phase is not used here as a means of flexibly adjusting the processes in the context of a particular object. Nor it is utilized to modify the process during the progression of the project life cycle. It is not done anywhere in between concept shaping and project termination.

Secondly, the equivalent of focus phase is not clear about the motives of the process in the relation to various interested parties. It is also not clear about the motives “ analysis of uncertainty, opportunity and risk, and the models selection. Thirdly, in other common practice processes, the equivalent of the define phase is too details in terms of activities, and still fails to address all the seven W’s of the project lifecycle. It also fails to link the financial cash flow models in a balanced manner.

Next, and fourthly, the identity phase equivalent in the common practice processes is limited to the event based uncertainty. It is not in a position to cope effectively with composite uncertainties. It also fails to structure sources of uncertainty, associated risks, and responses usefully. This often

results in very long and detailed ' risk registers', which addresses minor issues in greater detail.

Next, the absence of structure phase equivalent, which is the fifth shortcoming, results in lack of robustness testing or effective structuring decisions. These would include; lack for a significant search for common or general responses; failure to identify significant linkages; and interdependence between important sources of uncertainty.

Next, and the sixth, there is relatively lack of equivalent of explicit ownership phase. This result in the lack of adequate attention to the contractual agreements for the involve stakeholders to manage uncertainty, including simple contracts. Seventh, in the common practice processes, the equivalent of the quantity phase is expensive, but not as cost-effective. Its link to the earlier quantitative analysis is also ineffective, resulting in biased estimates that highly conditional on scope assumptions and other that has been ignored.

Eight, the equivalent of the evaluate phase in the common practice processes, does combine the different sources of uncertainty, but does not capture crucial dependence. It also does not provide insight so as to clarify how revisiting earlier analysis can clarify uncertainty. Also, it does not help develop effective response, facilitate crucial choices to achieve risk efficiency and balance, and demonstrate robustness of the choices. Next, the ninth point, there is absence of any effective iterative process structure, such as one which can combine all seven PUMP phases. It also fails to distinguish " planned iterations which involve limited costs, successive applications of an iterative process as a project lifecycle progresses, and

unplanned iterations to deal with surprises which are costly". Finally, the tenth shortcoming is the lack of clear and shared understanding of all the objectives. Also, there is a lack of orderly process for taking into account all the relevant trade-offs in terms opportunity efficiency.

Key features of identify phase of the PUMP approach & common practice

In the identify phase of the PUMP approach, all the relevant source of uncertainty, the options for response, and the conditions are identified. This approach poses restrictions on the complexity, which is relevant in a clear and efficient manner. This approach requires that all the sources of uncertainty are evaluated individually, and in quantitative terms. This approach is unique in the sense that it requires that all the sources of uncertainty are treated independently as assumptions in the qualitative analysis. This approach allows the PUMP team to change their approach later in the project stage. However, better decisions or judgements made early, can help save time and make more accurate analysis later on. This process requires the skills and experience, and in particular, the 'problem structuring' skills.

The process begins at the strategic level within the define stage of the structure. Therefore, it is crucial to maintain the strategic vision throughout the project, and avoid any distraction. This requires identification of both threats and opportunities. Also, to identify what needs to be done about each relevant source of opportunity. And, whether the response is reactive or proactive, or whether it is specific or general level. For example, "“ what can we do about an activity delay caused by a particular machine falling?"

involves a specific response”.

This approach also allows making a contingency plan, in terms of identifying secondary sources of uncertainty, and its relevant response. In this case, a ‘source’ means ‘a source of uncertainty, whereas ‘response’ implies what we can do about the source of uncertainty. General responses are particularly significant in the team is looking for opportunities for project performance. However, it should be noted that the secondary sources of uncertainty arise as a consequence of primary response.

However, there are occasions when the source of uncertainty and its response are evaluated separately. In one such occasion, they need to be understood separately so as to estimate expected “ values, targets or commitments without bias”. Also, in occasions where there are increased sources of risk and opportunity efficiencies at any given level. Lastly, to resolve any ambiguity that can be a cause of concern. Also, those assumptions, which are invalid, are a source of uncertainty. Therefore, they should be analyzed in conjunction with all other sources of uncertainty. However, there are two kinds of working assumptions that cannot be treated in quantitative terms. Therefore, they require separate treatment such that they can be incorporated in the qualitative and quantitative terms. The first category is the assumptions related to project scope, which can also be treated as a condition to be followed by the quantitative analysis. Therefore, these scope related assumptions should be identified in the define phase. So, should be the local project scope assumptions. The next category is the process scope assumptions, which includes the concept of modelling assumptions. “ Example include assuming no formal response analysis for

sources during early lifecycle analysis because the concern is sizing the expected cost and associated uncertainty without shaping the underlying plans, as in the Highway Agency re-estimation exercise". Both these kinds of assumption are considered as identifiable working assumptions. Therefore, we infer that all the any unidentified working assumption and all framing assumptions can be considered as unidentified source of uncertainty.

Therefore, the PUMP professionals need to develop the ability to minimize the unidentified assumptions. This allows them to avoid details, and at the same time without leaving any uncertainty uncovered. But, the ambiguity involved needs to be acknowledged explicitly, and its role needs to be understood. Also, in this context, avoiding the bias means that it needs to be resized quantitatively.

Many project managers who have been following the common practice risk management have difficulty in reconciling with the concept of ambiguity.

Therefore, the project sponsors and the managers need to be confident that their PUMP team are able to effectively treat ambiguity. Just because it has not been identified, does not mean it will not go away. That makes identifying ambiguity an important first step.

In common practice, risk identification remains a priority to a successful risk management. It is also important from the standpoint of contingency estimation at the programming phase. Under this practice the objectives of the risk identification are: (a) identifying and categorizing risks that have the potential to affect the project; and (b) their documentation. This brings out a list of risks, which should be comprehensive and non-overlapping. This forms the basis of formulating the project contingency and setting up of baseline of

cost estimate. However, it should stop short of assessment of the risk “ so as not to inhibit the identification of minor risks. This identification process should promote creative thinking and leverage team member experience and knowledge”. In fact, the most challenging part of the risk management is defining the issues at appropriate detail. In this context, the risk checklist and a list of risks from similar projects is helpful. However, it is important the list is looked at the end of the risk identification process. Reviewing this list at the beginning of the project will result in bias. This will result in ignoring the uniqueness of the project.

The project scope, which was developed during the programming process and the related base estimate become the key inputs for the risk identification process. Therefore, under the common practice, the risk identification process should begin with reviewing of any risk, which has been identified at the time of planning phase. But, the risk that have identified during the planning phase might have been changed by the programming phase. Therefore, the risk identification during the programming phase should be very thorough. It is recommended that once this is done, the risks thus identified, should be cross checked with those that had been identified during planning phase.

Key Features of Evaluate Phase of PUMP Approach

This phase of the PUMP approach involves the assessment of the statistical dependence. The result of this phase is used to synthesise the result of the quantify phase. The process of combining sources, which have been specified by the nested structure, and the interpretation of the results in the context of all the previous PUMP phases starts at the lowest level of the

composition. For example, making decisions about proactive and reactive responses can begin at the lowest level, and then gradually building up. Therefore, it has to be a 'bottom-up' approach, gradually reaching the decisions "that address the way uncertainty accumulates across activities". A major work involved at this stage is the refining and redefining the earlier analysis. In conjunction with the evolving focus phase decisions, the analysis can produce complete multi-pass analysis of the key sources of uncertainty. This phase is done before the analyst move on to integrating activities. That is to develop understanding of what is more important at the decomposed level so as to provide a firm foundation for the decisions to be made at the higher level. Thus, it also involves iterative loops.

Therefore, making robust provisional decisions at the lower level, before moving on to the higher level reduces the ambiguity. Thus, this structure that is built in composition/decomposition hierarchy is important. Therefore the PUMP team knows from where to start the composition process. Also, they know what matters most as sensitivity diagram starts to confirm or revise the initial views. Therefore, PUMP is a way of thinking and not a checklist of procedures. Further, the ideas developed in the Parts II and III need to be understood by the aspiring analyst. And, the decision makers need to be confident of the fact that the PUMP team members are providing them a certain level of clarity on the uncertainty. Further, the governance teams should be concerned about the correct level of clarity and the quality of analysis it is being provided.

Under the common practice, there are generally are four dimensions; project management dimension; product dimension; stakeholder satisfaction

dimension; and the cognitive constraints dimensions. Under the project management dimension, it is evaluated how closely the project achieve its original objective. It is also evaluated if the project met the specified product specification, budget, schedule, and scope. Regarding product dimension, how well it met the functional and business objectives that were devised during the project charter and business case. Also, how well did the project achieve its key performance indicators (KPIs).

Under the stakeholder satisfaction dimension, it has to be evaluated what was the level of satisfaction or dis-satisfaction in each of the project stakeholders. This is something that can be either positive or negative.

Lastly, the Cognitive Constraints Dimensions, the CSFs associated with the dimensions how the project team can handle; decelerations or accelerations during projects; contingency factors, The Student Syndrome etc.

Therefore, these would be the key advantage of using PUMP method over the common practices.

Bibliography

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