EVALUATION:
The Project Management Cycle's Sixth Dimension[1]

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ABSTRACT

This is a discussion about **Project Evaluation** tools and techniques. The author advocates that project managers be familiar with the purpose, scope, tools & techniques of evaluation; and that the topic of Evaluation be included in future editions of the ***Guide to the Project Management Body of Knowledge (PMBOK)®.***

The Project Management Body of Knowledge Guide® of the Project Management Institute® identifies five "Process Groups" in the Project Management Cycle: Initiation, Planning, Execution, Monitoring & Control, and Closing. **I contend Evaluation is intrinsically a Sixth Process Group.**

Monitoring & Control focuses on the project's status during Execution, and what – *if any* -- actions the project manager can undertake to rectify variances from its pre-planned time, cost &/or technical scope, in order to deliver the project's planned 'outputs;' hopefully on schedule and on budget. However, during the latter stage of Execution -- *as well as at, and after, Closeout* – a separate and distinct **Evaluation Process** emerges to

> **1) validate** the extent to which the project's strategic and/or policy objectives are likely to be -- *or have already been* -- achieved,
>
> **2) feedback** the findings to higher level managers and policy makers; as well as
>
> **3) recommend** what else could be done to heighten the prospect for a successful outcome; &/or address any problems already encountered.

Evaluation is neither the function nor responsibility of project managers. Nevertheless, whatever is learned from the evaluation, **the project manager will ultimately be held accountable for subsequent shortfalls by the target clients -- if not the sponsors!** Therefore, it is in the project manager's direct interest to include sufficient resources during planning to achieve their project's objectives beyond its immediate 'deliverables;' as well as provide for subsequent evaluations. Thus, even though not directly involved in evaluation, Project Managers should be familiar with the unique processes, tools and techniques of evaluators.

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Essentially, evaluation attempts to measure and compare changes (or differences) resulting from a project intervention; hopefully an improvement over the baseline situation. But comparative analysis presupposes the existence of baseline data. Otherwise, less desirable 'work-around' approaches must be undertaken during evaluation. Moreover, systematic approaches to collect data for evaluation should be identified for subsequent processing, analysis and assessment.

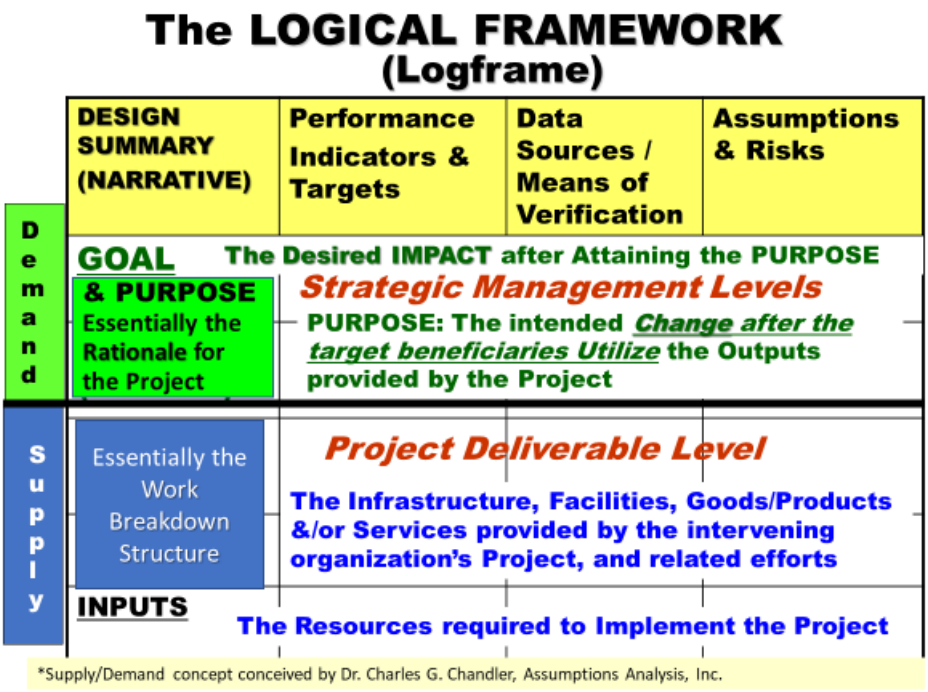
While commercial sector project initiatives may be directed at:

- *Increased Profit*
- *Greater Market Sector Penetration*
- *Expand Outreach of Clientele*
- *Customer Loyalty, or*
- *In-house sustainability of operations*

governmental social & economic development projects are intended to foster or further one or more of the following:

- *ECONOMIC OPPORTUNITY - Income Generation / Poverty Alleviation*
- *SOCIAL - Better "Quality of Life" in terms of Health & Education, &/or prioritizing support for Women & Children*
- *INSTITUTIONAL – Capacity, Capability & Sustainability of Governance*
- *GROWTH & DEVELOPMENT- Replicability /Scaleup of Service Delivery*
- *ENVIRONMENTAL – Protection of Natural Resources/Anti-Pollution*
- *PUBLIC ADMINISTRATION – Equity in Service Provision & Delivery*

The Logical Framework (logframe) – essentially a '*Hierarchy of Objectives*' -- also known in the Asian Development Bank (ADB) as the ***Design & Monitoring Framework (DMF)*** is the "**Best Practice**" **technique** used by the international multi-lateral and bi-lateral donor development agencies to relate deliverables to the strategic objectives of their projects, as well as identifying and specifying baseline and target indicators and metrics.



The Evaluation Process

Depending on the timing, resources available, and context, Project Evaluation methodologies can be adapted to one of three different data observation and collection environments – encapsulated in the acronym '**BAWWO:**' i.e.

1. "Before : After" 2. "With : Without"

or -- *ideally* -- both:

3. "Before : After" & "With : Without."

BEFORE and AFTER project comparisons are usually readily accepted, because they have implicit *"Face Validity."* If a situation is ***better*** after a project than it was before the project, it is only natural for the Sponsors & Program Managers to take credit for the improvement. Whereas if the situation is ***worse*** after the project -- *or at least no better* -- than it was before, ***it is almost inevitable that the target beneficiaries will blame the Project Manager!*** And in either eventuality credit (or blame) is difficult to refute!

The "WITH -- WITHOUT" approach necessitates having a "Control" group; i.e. an area outside the project (but similar in other respects), and with individuals similar to the target beneficiary group but who will not be the recipients of the project's largesse. Similarly, such comparisons are also usually readily accepted, because they too have *"Face Validity."* However, outside a clinical laboratory setting, observing in a control area environment – particularly on social changes -- poses additional risks of inaccuracy and unreliability by collecting data from sources who know they are destined to receive no direct benefits from the project.

Thus, **where circumstances permit and sufficient resources are available,** there is merit in doing **both "Before-After" & "With-Without"** evaluation – *Concurrently.* The **difference between differences** is then measured to take pre-existing trends into consideration.

Occasionally, on large projects with replications spread over a wide geographic area, a fourth alternative -- "**WITH -- WITH**" -- is also available, where comparisons can be made of similar applications to different areas within the project.

Evaluation Tools & Techniques

Evaluators employ a variety of quantitative and qualitative tools and techniques to gather data then analyze it, attempting to discern the outcome and impact of project deliverables. However, each has its limitations as

- **Direct Values** are *not easily absorbed* by mixed audiences, and the intended impact may be lost
- **Averages** are often misused &/or misunderstood as they tend to obscure the fact that *half of the items in the population sample measured are below the average!*
- **Percentages** often ignore the differences in direct values, and even *small changes are exaggerated in small populations*

While the *Criteria* for Qualitative Judgements is usually *very subjective, and often lacking.*

To verify and validate project component deliveries, performance and impact at the Purpose and Goal level, evaluators need to collect representative data for analysis from stakeholders beyond the project's implementation management information system. This usually entails sampling: systematic 'scientific' stratified random sampling, or non-random 'batch quality' sampling. **Sampling methodology** and **data analysis is a statistical discipline in itself,** requiring understanding of probability theory -- to determine the appropriate sample size given the extent of variability in the population to be studied, the amount of error acceptable, and the confidence level desired in presenting findings.

In addition to variance analysis – *with which project managers are quite familiar in monitoring project implementation* -- evaluators do further analysis to determine how **"*Statistically Significant*"** that difference might be.

Determining **"Necessity" and "Sufficiency"** are two other important aspects of Evaluation and another statistical tool to assess whether what the Project is(was) doing is(was) *Essential*, and also whether the project's deliverables are(were) Enough; or whether some other essential factors are missing and should also be provided.

Strategic objectives are often established and recommendations made to adopt certain policies and deliver project outputs based on assumptions, convictions, beliefs, faith -- *or desperate hope* -- that there is *'**Cause-Effect**'* relation between variables -- such as "*level of education*" and "*income level*" [*i.e. higher educational attainments will increase income*]; *more fertilizer applied to crops will increase yields; or removing headlice will result in healthier children.* However, after application, analysis and closer assessment by evaluators sometimes reveals that preconceived convictions of sponsors were not realized and results are counter-intuitive.

Statistical Correlation is an effective technique for assessing the merits of such policies, recommendations and practices.

Evaluation Personnel

The duration for conducting an evaluation is usually quite limited, so after data collection, evaluation quality is further constrained by availability of qualified personnel to process, analyze and evaluate the data, draw conclusions and present the findings and recommendations.

Despite exclusion of evaluation considerations from PMI's PMBOK Guide® some project managers are already conversant with the aforementioned evaluation methodologies, statistical tools & techniques. Furthermore, given their experience during implementation, the project's manager is probably most familiar with the situation -- both its successes and shortcomings – and future prospects.

However, while desirable for project managers to participate in evaluations to assist external evaluators, it is inappropriate for project managers to take the lead in conducting evaluations of their own projects; even if they are competent in the use of statistical tools. If the project is successful, and reported as such, project managers assessments are all too often perceived as self-aggrandizement 'spin;' and if unsuccessful, self-condemnation is rare and flaws tend to be defensively downplayed or completely 'whitewashed' over. Thus, it is more appropriate to limit project manager participation in an evaluation team, and defer most deliberations to independent, external, evaluation specialists in a 'judge' or 'jury' mode.

Conclusion

To conclude my narrative, **evaluation** is the capstone of the **Project Management Cycle** and -- *I think* -- unquestionably a **Sixth Process Group** of the **Project Management Cycle**,

Recommendations

Even if not completely competent in the statistical nuances of Evaluation, I recommend that every project manager have a basic awareness of evaluation objectives, tools and techniques. To that end, I recently published a **Project Management PRAXIS** book (*available on Amazon*), with a tenth chapter outlining **Evaluation processes, tools and techniques**, as well as innovative ways to apply them. [These tools can be supplemented with a variety of '*drop in the data*' Excel templates to crunch numbers and facilitate assessment.]

Furthermore, to enable Project Managers to do a credible job of planning, scoping and budgeting evaluations for their projects **I recommend that the topic of Evaluation be incorporated in PMI's PMBOK Guide® as a Sixth Process Group**. Whether separate evaluation processes should be dispersed across the existing Knowledge Areas, with the logframe and other intrinsic evaluation tools and techniques subsumed under Quality, or Evaluation classified in its own right as another (i.e. Eleventh) Knowledge Area, I leave to others.

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About the Author

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Dr. Kenneth F. Smith has been a project management consultant for ADB, the World Bank, and USAID for decades. He earned his DPA (Doctor of Public Administration) from the George Mason University (GMU) in Virginia and his MS from Massachusetts Institute of Technology/MIT (Systems Analysis Fellow, Center for Advanced Engineering Study). A long-time member of the Project Management Institute (PMI) and IPMA-USA, Dr. Smith is a Certified Project Management Professional (PMP®) and a member of the PMI®-Honolulu Chapter.

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