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Project Performance Measurement: Implications of Current Trends on the Project Manager's Responsibility

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Abstract
The mix-up between project and business/corporate performance metrics remains a problem in project management. Using the construction case, and a comparative literature survey approach, it was found that some of the performance metrics currently required by clients are inconsistent with the project, and project management philosophy. Similarly, the said metrics attempt to extend the project manager's responsibility beyond the project and their use risk unrealistic and unrealized expectations and ultimately project failure. This paper concludes that using such metrics is uninformed, unsustainable and limited by strict contractual liability. The consistent invasion of project management by investment management principles via the use of such metrics requires sustained resistance if society is to protect project managers and benefit from managing by projects.

Keywords
Project, Project manager, Responsibility, Performance measurement, Trend

1. Introduction

The importance of properly conceptualizing project performance/success measurement can be rationalized from a number of angles. First, is the right observation that up to the mid-1990s, focus within the project management literature centered mainly on how to achieve success (the key factors) with very little written on its measurement (the parameters/criteria) Turner *et al.* (1995). Second, is the continuing redefining of the operating envelop (Russel-Hodge, 1995) in project management generally, and performance measurement particularly. Third, is the increasing trend and attraction of partnering (Meredith and Mantel Jr., 1995) and chartering (Seeley, 1997) in projects, resulting in intricate stakeholding by project-driven and non-project/product-driven corporate entities in mega projects. The above type of stakeholding tends to engender differing metrics for performance evaluation (Bryde and Brown, 2004).

The significance of performance metrics misconception lies not only in negating the very concept of a project, and hence project management, but also in attempting to extend the project manager's responsibility beyond the life of the project and hence putting his job and professional competence at unnecessary risk. The risk enlarges in such project types as construction (Bubshait, 1990), an industry whose projects constructs, alter, refurbish and repair a wide range of structures (Seeley, 1997). The focus on construction derives from its economic importance (Suhanic, 2001), it multi-contributor nature (Hendrickson and Au, 1998), peculiar characteristics and failure (project/business) rate (Nunnally, 2004).

In the above circumstances it becomes necessary to differentiate between business (product/service), and project(process), performance metrics and in so doing redirect focus on metrics by which the project and especially, the project manager can legitimately and realistically be judged on performance.

2. Theoretical / Framework

The concept of a project can be circumscribed using several characteristics including the uniqueness of the product/service (Akpan and Chizea, 2005), and involvement of risks, temporariness, change, and procurement methods (Seeley, 1996). More inclusively, it is seen as a one-time-only configuration of related activities, people, resources, tools, management, and expectations (Kerzner, 2003). A project can therefore be viewed as a consciously contemplated and initiated one-time-only configuration of a reasonably finite set of activities related by a group of prioritized specified or specifiable objectives that are quantitatively or qualitatively constrained.

While the traditional management model implicates a functional, uni-directional line of partial devolution of the responsibility for achieving project objectives, the project management procurement model is designed to focus the sole responsibility and absolute authority for the attainment of the goals (objectives) of a project on a small group of persons(the project management team) or on an individual (the project manager) (Meredith and Mantel Jnr, 1995). The latter therefore attempts to use a temporary organization to provide the client with a single point of responsibility for failure or success.

Statistical theory defines success as the probability of occurrence of an event or the relative frequency of occurrence of an event (Spiegel, 1972). Whereas success generally means gaining what is aimed at, (Hornby, 2006), one of the earliest comprehensive definitions think it occurs when a project comes in on schedule, budget, achieves basically all the goals set for it, and is accepted and used by the client for whom it is intended (Pinto and Slevin, 1988). The above definition implicates the metrics of time, cost effectiveness, and client satisfaction, respectively.

Earlier and classically, project success had meant meeting the initial quantitative values of the three main 'objective' parameters of cost, time, and quality which is viewed as 'traditional issues" and performance metrics that have been canvassed in the last fifty years (Kerzner, 2003; Henrie, 2006). It is important to then state that beyond cost, time, and quality, other parameters, and criteria have continuously crept into the literature. Examples include a 12-item metric system (McComb *et al.*, 2008) and another group of 16-item (primary and secondary) performance metrics framework thus: primary-time,cost, quality, and acceptance by the customer's ,secondary-follow-on work from the customer, use of customer's name as reference, minimum or mutually agreed scope, changes and non-disturbance of the organizations main work flow (Kerzner, 2003). Others are: not changing the corporate culture, on-violation of safety requirements, providing efficiency and effectiveness of operations, satisfying environmental requirements, maintaining ethical conduct, providing strategic alignment, maintaining a corporate reputation, and regulatory agency relations. There is no doubt that many of the metrics named above need clarifications in terms of stakeholder focus and seeming unnecessary multiplicity and thereby necessitating determining the appropriate project performance indicators (PPIs) (McComb *et al.*, 2008).

3. Performance Metrics: Identity and Trend

Early indication of the importance of metrics defining project performance are represented by the trio of Baker *et al*. (1988), Pinto and Slevin (1988) on the one hand, and Kerzner (1998) on the other. While the first source required the satisfaction of key project stakeholders in addition, the second albeit, veiled extended the number of admissible metrics by their inclusion of 'effectiveness' and 'client satisfaction' (Pinto and Slevin, 1988).The third on the other hand enlarged the metrics framework first by seemingly

replacing quality with performance/technology, and then including good customer-relations (Kerzner,1998).

With the preponderant mixed usages of the above later metrics, there is the need for a system with which to develop a workable reality (Kliem and Ludwin,1992), and hence a generalizeable basis for defining project performance metrics that can aid the development of more accurate performance measurement systems(PMSs) (Bryde and Brown, 2004). The pre-eminence of the client and his interest subsequently, has been sufficiently canvassed in the literature (Morledge and Sharif, 1997). In this direction, this paper assumes the knowledge of the metrics of time, cost and quality, as clients' basic interests, and therefore requires only contextual references where necessary in this discourse.

It would appear however, that the admission of more performance metrics actually started in the 1980s, (Bryde and Brown, 2004), and with the introduction of effectiveness, and client acceptance/satisfaction as earlier stated. Clients' interest in the procurement process, and better performance have evolved into the multi-dimensional and multi-observational metrics approach (Shenhar *et al.*,1997), and dichotomization of metrics respectively for project management, and product/project, success (Cook-Davis, 2002). The above dichotomization framework presents at least three problems: apparent limiting of the definition of project management success to the 'iron triangle'; and not conceptualizing project management success in terms of gauging satisfaction with the project manager's effectiveness/efficiency in harnessing all project resources with minimal inter-stakeholder conflict. Thirdly, the idea of 'product/ project' success presents a misnomer. While a project is expected to terminate at some point in time, for instance, a new product which itself is always born of a project, is expected to, as it were, live 'forever' while generating the expected returns. In other words, to define project success in terms of the long-term results yielded by the project's final product is simply risky and misleading, in tending to measure organizational, (Cigolini *et al.*, 2008) than project, objectives.

Although the arguments above are not the focus of this work, it needs to be stated at once that the above types of reasoning provide the basis for the introduction of the subsisting conflicting metrics of project performance. Interestingly, the differing and sometimes conflicting project performance metrics within the literature seem to stem from concerns (real or perceived) of the client. To this end the metric of effectiveness and especially, client acceptance / satisfaction take centre stage.

Beyond the 1980's common use of the above metrics, the 1990s saw success defined as meeting first, established requirements (needs) of the (project) owner (Bubshait, 1990). It is these same requirements that are later restated with fitness for purpose' as the last requirement (Lewis, 1993) and user-defined key parameters (Schienberg, 1994) .The last metric requires determining whether the user ranks higher than the client in importance and exposes the complexity of the concept of the 'client' which includes even 'user'(Murdoch and Hughes, 1996).

The trend of metrics can then be presented thus: cost, time, quality (Egan, 1998), and client-, and contractor satisfaction with the way the project was managed (Mohamed and Mohamed, 1999). Other metrics are functionality; operability, health and safety (Jaafari, 2000), and the multi-dimensional multi-observational balanced score card (BSC) (Walton and Dawson, 2001). Next are the pro-viability/business or commercial metrics: maximization of positive cash, contribution to corporate objectives (Church, 1992); and net present value (Griffiths and Stubbs, 1997); and increased turnover (Westcott and Burnside, 2003). Following closely is the non-commercial metrics including utility; functionality (Waterhouse, 1995); defects (Martin, 1999); utility and function (Walker , 2002); add – on quality (Johnston, 2002); design quality, and energy performance (RICS, 2003).

The last set present ingenious conceptual improvements seen as 'advanced' metrics since they implicate significant twenty first century phenomena. The metrics include transparency in contract administration (Leighton-Jones, 1998); customization, modularity and simplified procurement process / comprehensive

service (RICS, 1998); predictability of project time, and cost (Kamasho, 2002); and the cultural framework (Kendra and Taplin, 2004). However it is looked at, the choice of each performance metric has implications for the responsibility of the project manager who, as it were, ranks as a sole agent in law.

4. Implications of Metrics

The performance metrics trend indicated in the foregoing section can be summarized as follows: the iron triangle –cost, time, quality; client satisfaction/acceptance; pro-business / utility; and 'advanced' metrics. Going by definition, the first group of metrics present no special responsibility implications for the project manager since he is, ab initio, solely responsible for success or failure in meeting these objectives which themselves are usually measured within the project's activity period.

The project manager needs only therefore to minimize negative overruns of these metrics where savings cannot be achieved, in addition to satisfying implied needs of the client as may be gleaned from the project brief. The use of the pro-business /viability metrics with which the literature is replete seems to view a project just like every other investment unit having an installed capacity, and an estimated output rate, product mix, stream of returns (economic or otherwise) or products/services. The above types of metrics are such that the project manager has no control over them based on his appointment, and their conceptual location outside the project life cycle, and by implication the project manager cannot legitimately be held responsible for their final values. Similarly, in expecting too much from the project manager, clients may be tempted to make such pro-viability metrics part of the conditions in the project manager's consultancy agreement.

The 'utility' views can be considered under the non-business / non-commercial metrics. A major defect of these views lies in their introduction of ideas that are ideally alien to that of a project. In addition, some of the metrics require further clarifications to make for better understanding. Functionality / function, and design quality, for instance, can have conceptual as well as practical implications particularly considering the deferent types of quality (conformance, design, performance, and etcetera). The inter-changeable use of performance, technology and specification in place of quality by some discussants (Kerzner, 2003; Meredith and Mantel Jnr, 1995), respectively, creates yet another interpretation difficulty.

As with the pro-viability group of metrics, one implication is that the project manager will be expected to deliver on metrics over which he has no control as a professional and whose absolute values remain professional guesses until the project materializes. Moreover the choice, and final values, of such metrics tend to depend on the dynamics of the environment (Cigolini *et al.*, 2008) such as the market and/or economic environment. The use of 'advanced' metrics, as already defined, presents a special case of innovation, with their in-built uncertainties, and continuous improvement which is a necessity that is at the core of project management as a procurement model (Kerzner, 2003). It also presents the case of the ever increasing level of innovation required to satisfy the now more knowledgeable and exacting client. The implication is that the project manager needs to continuously improve his own knowledge base, and management tools kit (Project Management Institute, 1999), and be more proactive in order to meet the challenges of the technology-driven 21st century client.

5. Conclusion

More clients now use projects as change agents and demand better project performance in construction, a sector that is seen as an economic regulator. The project manager also needs to contribute to the client's business and maintain credibility by achieving the desired level of project performance which is his sole responsibility.

The objective of the paper was to identify the trend, nature and implications of project performance metrics available in the open literature and this has been achieved. It identified the trend in project performance metrics as the iron triangle-cost, time, quality; effectiveness/ client acceptance, pro-viability/ utility; and 'advanced' metrics. It was found that some of the metrics are inconsistent with the project, and project management, concepts and attempt to extend the project manager's responsibility beyond the project. The implications include the following: mix-up between project, and organization (business) performance; risk of unrealized and unrealizable client expectations; avoidable litigations, and project failure ultimately.

It is concluded as follows: there is need for a common, realistic and generalizable basis for metric identification; use of inconsistent metrics is uninformed and unsustainable, while strict contractual liability limits the project manager's responsibility within the project's life. It is also concluded that the increasing use of metrics such as referred to above remains a subtle but consistent invasion of project management, by investment management, principles and requires sustained resistance if society is to continue to benefit from projectization. Finally, correct and informed choice of project performance metrics is a sine qua non to competing effectively in this 21st century.

6. References

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