Advances in Project Management Series[1]

The Coming Sea-Change in Project Management Science

By Michael Hatfield

Abstract

When Thomas Kuhn published *The Structure of Scientific Revolutions* (University of Chicago Press, 1962), he introduced into the popular lexicon the term "paradigm shift." Its original meaning dealt with the gradual shift in the adoption of a given, newly-introduced theory as it displaces commonly-held ideas that fail to adequately explain observed data or phenomena. In the realms of the hard sciences this idea displacement is easily observed and documented, as competing theories can be empirically tested for their validity. This is not so in the so-called management sciences, since the number of parameters involved in testing any theoretical approach within a macroeconomic environment is prohibitively expansive – it's simply impossible to isolate the contributing elements affecting macroeconomic transactions to the extent necessary to validate a given approach.

Within this environment, almost any reasonable-sounding hypothesis, backed by data that wouldn't survive scrutiny based on the rules of evidence, can be proffered and furthered well beyond its capacity to explain why things managerial have happened the way they happened, much less provide insights on how future events are likely to unfold. This does not stop bloggers, writers, institute founders, college professors, and many others from attempting to introduce into the zeitgeist notions, structures, ideas, and theories of how management ought to function, many of them suspect at best, fraudulent at worst. The resulting mash of overlapping and competing ideas provides, not clarity, but massive amounts of confusion in the pursuit of validating (or invalidating) project management science ideas, hypotheses, and theories.

This article examines how commonly-held precepts in the body of management science are advanced, and offers a basis for evaluating their validity. The result, I hope, will be a Kuhnian paradigm shift in the way project management is perceived as fulfilling a specific role within the macroeconomic environment.

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In the nano sciences, the ability to characterize the shape of a given material at the molecular level is extremely important. Unfortunately, the technology that would allow a direct observation of materials' molecular shape has yet to be discovered. However, neutron science does have a way of allowing *indirect* observations to be made. It works like this: while a given molecule's shape can't be observed, special equipment does allow the behavior of interacting neutrons to be directly observed. By bombarding a target material with a neutron stream, and observing the behavior of those neutrons, it is possible to characterize the target material. A rough analogy would be that it's possible to get an idea of what the invisible man looks like without touching him by bouncing ping pong balls off of his face, and noting the exact points where the balls change direction.

In the management sciences, it's often difficult or impossible to quantify, or even observe, the impact of a given business tactic or stratagem, due to the vast numbers of influencing factors involved in the economic environment. For example, when the Project Management Institute® was founded in 1969, its ideas represented a profound challenge to much of the conventional wisdom then-prevalent in management science circles, whether its founders realized it or not. Many of their theoretical insights had been already borne out in thousands of real-world "experiments," which, while not being able to isolate the specific impacts of a rather broad set of technical approaches, nevertheless showed that the macro set of project management ideas to be sufficiently valid to justify widespread adoption by those organizations that both performed project work and wanted (or needed) to perform better than their competitors.

These ideas represented a challenge to the widely-held notion that the ultimate goal of all management is to "maximize shareholder wealth." With their focus on scope, cost, and schedule – parameters that, if not pointedly set by the customer, are at least directly relevant to achieving organizational goals -- PMI® had posited an entirely different technical approach to management success. However, when a certain set of theories of how management ought to work cannot be evaluated empirically, they are typically furthered or embraced through one of two routes:

- The theory set has a direct (positive) causal effect on the organization's goals (typically maximizing profit is predominant), or else
- The government mandates its use.

Generally Accepted Accounting Principles are universally employed because they enjoyed major pushes from both of these drivers. They represented the main information stream for guiding business decisions, while also providing the basis for governments to assess and collect taxes. The body of knowledge associated with project management has enjoyed a lesser level of implementation push. The earliest versions of codified project management, the Cost/Schedule Control System Criterion (C/SCSC), were required of all contractors working on major projects for the United States Department of Defense.

But as far as having a direct impact on a given organization's profitability, the results were mixed. Some industries, like construction, already relied heavily on the Critical Path Method (CPM) of scheduling, but usually had little need for the risk management techniques advanced by PMI®. The pharmaceutical industry based many of their business decisions on the information stream emanating from their risk management systems (though those systems little resemble the ones recommended in the PMBOK® Guide), but had little need for Earned Value Management Systems (EVMSs). Earned Value Systems are rather common in the manufacturing industry, where advanced scope management systems are often superfluous. So, whereas virtually all components of GAAP are universally incorporated (it simply wouldn't do to have, say, accounts receivable be GAAP compliant, while payroll is not), the various elements that make up the complete body of project management theory are far more compartmentalized, depending on the organizations' specific circumstances. This compartmentalization, while rendering direct observations of PM's effectiveness impossible, does allow indirect observations.

The uneven advancement of project management theory as a whole tends to highlight PM's overall weakness. Organizations embracing the whole of the project management body of knowledge, as documented by the Project Management Institute®, could not demonstrate a consistent competitive advantage over those organizations that chose to only implement certain aspects of PM, or even none at all. Not to state the obvious, but if there were a direct cause and effect relationship between an organization embracing the totality of PM theory and a verifiable jump in profitability, there would be no need for all of those articles, papers, and webinars, touting the advantages of embracing PM techniques. There simply aren't any articles in, say, the chemists' trade journals touting the advantages of using Bunsen burners – their utility is obvious. The very existence of such articles, papers, and webinars (many of which take on an insufferable eat-your-peas style of hectoring tone) points out the fact that PM theory, taken as a whole, has failed to conclusively demonstrate its ability to impart in its practitioners a consistent competitive advantage in any given industry.

Now, is this to say that PM techniques, taken as a whole, are invalid? No, not at all – but I am saying that the current state of PM theory, as described in the PMI®'s PMBOK® Guide, is not articulated in a cohesive, consistent structure. As I describe in my recently-released, must-have book *Game Theory in Management* (Gower Publishing, 2012) the various chapters of the PMBOK® Guide are written as if the authors were unable or unwilling to define the limits of the specific techniques and approaches they were describing. If the PMBOK® Guide was a coloring book, with nine areas intended to be filled-in with nine different colors, then the result looks as if none of the lines were respected, and all of the crayon-wielders attempted to claim much more of the theoretical whole than they should have. Given this mis-mash of overly extended, overlapping management theories, is it any wonder that PM, taken as a whole, still requires massive marketing efforts to gain universal acceptance?

The Coming Sea-Change

While pretending to be able to quantify how the future will unfold is the risk analysts' folly, I would like to offer speculation on how project management theory, as an encapsulated whole, will fare in the years to come. As theory advocates and PMBOK® Guide chapter writing and review committees churn out ideas on how they *think* management ought to operate, the free marketplace will continue to put into place those ideas that work (or that those organizations think will work), and eschew those that do not have a positive impact on the profit-and-loss statement. (I fully anticipate that one of the earliest casualties of this process will be much of what passes for modern risk management theory, being the waste of time that it is.) These two bodies of knowledge are destined to become casual adversaries, identifiable by how they are embraced by managers: the one set will be readily adopted and employed, the other implemented only by the intellectual equivalent of academic nagging, with its data needed for no other purpose than the attainment of a professional certification or for compliance issues. And therein lies an irony: as the gulf between the two bodies of management science – real-world and theoretical – grow apart, the value of those certifications to their recipients will erode, and rapidly. Organizations intent on maximizing profit (virtually all of them) will begin to recognize applicants with project management certifications as potentially knowing a bunch of stuff that just isn't so, or has minimal application(s) in their specific industry, diminishing any advantage that the applicants perceive they gain by spending the time and energy in attaining the certification.

Oh, the mainstream professional organizations advocating traditional project management or cost engineering will muddle along for a while, propped up by the occasional government head-fake towards endorsing them, their standards or their certifications, but the free marketplace will remain unfooled. The sea-change will come when a professional organization, with a clear vision of the valid capabilities of the business tactics and techniques of project management – as well as their limitations – gains prominence, and can not only articulate their value, but can demonstrate it in the marketplace. This vision requires the identification of the lines of demarcation separating the realms of asset, project, and strategic management, and where the techniques and approaches germane to each of these arenas have efficacy, and, more importantly, where they do not. The natural enemies of such a professional organization are advocates for specific business theoretical approaches, who have advanced their pet management theories and techniques by encoding them as "best business practices" in documents that make up industry standards, such as the PMBOK Guide®, or ISO 9000 (Quality). Whether or not one of the existing, prominent PM organizations changes course and achieves this, or a new upstart fills that role is anyone's guess, though I wouldn't bet on any of the existing ones. Their committees' needs for diversity and consensus, added to their inability to recognize the intellectual inconsistency inherent in fulfilling both those needs simultaneously, essentially guarantee that sharp course-corrections never occur, no matter how obviously appropriate.

What will precipitate this coming sea-change? Managers continuing doing what they do, regardless of what the professional institutes and standards-writers say they ought to

do. As the rest of us watch this epistemological gulf grow, I believe it likely that those who advocate for certain out-of-favor technical approaches will become more shrill in their papers and presentations, as well as their efforts to have governments require their list of project management recommendations be implemented. Conversely, those managers who consistently meet or exceed their portfolio managers' and organizations' goals, while maintaining the latitude to pick and choose which aspects of the whole of project management theory they employ, will point the way to which parts of the PM body of knowledge ought to be imitated, and which should be discarded. It's my belief that the soon-to-be discarded set is much larger than anyone currently suspects.

And that's why there's a sea-change coming in project management.

About the Author

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Michael Hatfield, MBA, PMP, CCC, EVP, is the author of *Game Theory in Management* (Gower Publishing, 2012) and *Things Your PMO Is Doing Wrong* (PMI, 2008), but is probably best known as the author of the long running column in *PMNetwork* magazine, *Variance Threshold*. Besides *PMNetwork,* his work has appeared in the *Project Management Journal, Cost Engineering, Gantthead, People on Projects, The Measurable News*, and even in the *Nuclear Weapons Journal.* He has worked as an entry-level technician for the Air Force Weapons Laboratory's Electro-Magnetic Pulse (EMP) test sites, as the director of a National Laboratory's Project Management Office overseeing a budget of $1.3 Billion (USD), and many very interesting jobs in-between. Michael lives in Albuquerque, New Mexico, USA, with his wife and two sons, and can be reached at varthold@aol.com.