

The Technical Project Manager: Paradox or Paradise¹

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ABSTRACT

As companies experience dissatisfaction with project management performance, and with ‘big data’ and Cloud technology becoming more prevalent, a trend is forming to bring highly technical resources into the project management role.

While a technical resource is far more than a subject matter expert and may have the ability to dissect technical issues, does he or she also have the skill set necessary to deal with communication, budget, resources, schedule, and the politics surrounding the project as well as motivate and lead a project team? With the technical project manager focused on the technical issues, who is focused on managing the project? Can ‘hard’ technical experience transfer to a ‘soft’ skill set?

This paper explores how the strengths and weaknesses of the technical project manager can impact the project in both a positive and negative manner.

Keywords: technical project manager, technical project management challenges, technical project leadership, big data, emotional intelligence, active listening, transferable experience

Introduction

Gartner’s 2012 survey, ‘Why Projects Fail’, noted that 28% of IT projects with budgets of \$1 million dollars and above fail while smaller projects have slightly lower failure rates.

The number one item on ESI’s Top 10 Project Management Trends for 2013 is ***Organizations will continue to call for strong project leaders but will focus on investments in hard skills.*** ^[1] The implication is that corporations are expecting their PMs to be not only good project managers, but to be technically adept as well.

Theoretically, the title *Technical Project Manager* (TPM) implies that the project manager will have a greater amount of technical skills and, therefore, have more technically related responsibilities than a Project Manager (PM; in the traditional sense of the title) whose primary responsibility is to oversee and manage the processes that deliver the project. The TPM role would, therefore, call for a greater depth of technical expertise in order to direct the technical aspects of the project, and occasionally step in to provide hands-on solutions.

The traditional PM may have extensive technical knowledge but focuses primarily on management activities as they relate to the project. Whether a technical resource can perform

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strategic project management activities while directing technical activities *and* possibly troubleshooting and solving technical issues, poses an interesting argument. ***Does the technically trained resource have the skill set necessary to successfully manage the overall project while also leading the technical activities?***

Case Study

While on-site with the customer the TPM worked through a difficult technical issue and became the hero of the moment. A few days later while making updates to the project schedule he was called in to assist with solving yet another technical issue, this time a critical one. He was on the verge of solving the problem when the project sponsor came by his desk asking for the updated project schedule he had promised to her for an important meeting with the COO. In this case the TPM felt he was justified in not having the schedule updates completed since he was working on a critical technical issue. Unfortunately, the client did not feel the same way since the schedule was not ready when it was promised, and she would have to face the COO without the updated information. As a result, the Sponsor was not particularly supportive of the TPM during the meeting with the COO.

The practice of project management requires a blend of project management knowledge, political and public relations savvy, a basis for technical understanding, and overall team building and leadership capabilities mixed with considerable quantities of confidence, endurance, ingenuity, and determination. Most people spend roughly 10 years preparing to become a certified project manager (4-year degree plus 4500 hours of related experience).
[2]

The PMP candidates hone their skills by becoming immersed in activities that support the three pillars of project management: scope, cost, and time management, along with gaining knowledge in their particular industries.

Few technically inclined folks (aka ‘techies’) start out with project management career paths in mind; they generally pursue a technical based career first, and may eventually move into a technical lead position. From the technical lead position, occasionally the opportunity presents itself for the techie to become a manager (either by desire or directive). Some techies move on to project management which then becomes their secondary career.

With a technical background the techie-turned-TPM may not consider the PMP certification to be a worthy endeavor, and their employer may feel the same way. Not that the PMP is the end-all/be-all for project managers, but the training and experience requirements ensure there is exposure to universally accepted best practices and ethics, and provides a common language.



Big! Really, Really Big Data

With the rise of social media and other internet inputs there has been a tremendous increase in data creation and collection on the web. On average there are 60 million Instagram photos posted to the web per day.^[3] In 2010, the amount of digital information on the web was 1.2 zettabytes (ZB; 1 ZB equals 1 trillion gigabytes).^[4] As of 2013 the web is estimated to have contained 4 ZB of data.^[5] The term ‘big data’ applies to data sets that are too large and complex to manipulate or interrogate with ‘standard’ methods or tools. In October 2013, IBM released the results of their survey, ‘Under Cloud Cover’, of over 800 companies “of all stripes”.

Multiples of Bytes		
Value		Metric
1000	kB	kilobyte
1000 ²	MB	megabyte
1000 ³	GB	gigabyte
1000 ⁴	TB	terabyte
1000 ⁵	PB	petabyte
1000 ⁶	EB	exabyte
1000 ⁷	ZB	zettabyte
1000 ⁸	YB	yottabyte

Table of Bytes

IBM found that over 50% of those companies surveyed are now using the Cloud in some capacity, and another 22% would embrace Cloud usage before the end of 2014, for a total of 72%.^[6] As a result of this phenomenal data growth, big data projects are being launched by the scores on a daily basis, initiated by industries ranging from health care to financial services to manufacturing, and just about every consumer related industry on the planet. Project management practitioners are enjoying record job demands.

However, the 2009 CNN/Money report for ‘The Best 200 Jobs’ listed Information Technology Project Manager as the #5 best job out of those listed. Neither Information Technology Project Manager nor any type of Project Manager has shown up on the best job list since.

Best Job Rankings (out of 200)						
Year	2009	2010	2011	2012	2013	2014
Job						
IT Project Manager	5	NA	NA	NA	NA	NA
Attorney	82	80	82	87	117	126
Dishwasher	178	156	156	NA	187	124

Paradox or Paradise

A TPM’s technical background prepares him to be solution-oriented with a broad and deep technical skill set commonly acquired by shutting everything else out and focusing completely on the task at hand. During most projects a PM does not have the luxury of shutting out the world and focusing on one task. If the TPM is expected to manage the project as a whole, he must be able and willing to multi-task every working day.

Uneventful days for the PM are rare, but if there was to be an uneventful, typical day it might include:

- hosting face-to-face client meetings no matter where you are (thanks to technology)

- hosting face-to-face team meetings no matter where you are (again, thanks to technology)
- receiving and making phone calls from/to team members on both home and client sides
- directing project activities
- managing project deliverables
- holding hallway conferences
- reading and responding to a never-ending incoming stream of e-mails most of which are marked “!”

Aside from the activities mentioned above, the project documentation (schedule, risk register, and meeting notes, to name a few) must be updated and shared, the executive presentation for both home and client must be created/updated/shared, and the financials (project budget, vendor billing, expense reports, unplanned expenditures, ad infinitum) always needs attention which invariably includes enduring a longwinded visit from at least one person.

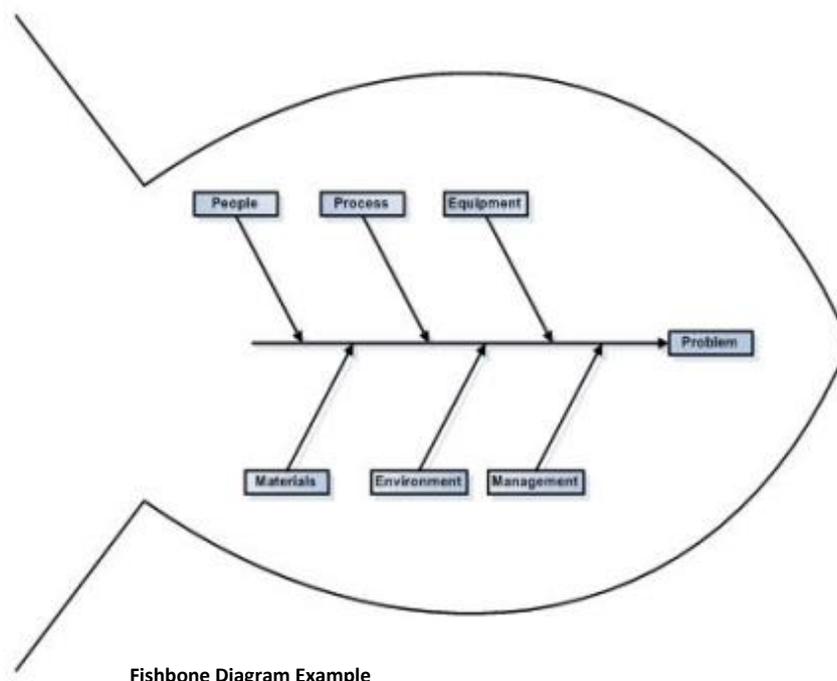
As in the Case Study where the TPM is focused on working the critical issue instead of updating the schedule, not all deliverables are technical. In reality the technical project is still a business project, and the primary function of a project manager is not to deliver a technical product but to manage and satisfy the agreed upon requirements of the project. Therefore, it is important that the TPM understand the business practices associated with the project. For example, if the project is home construction, it would be helpful to know that certain permits are required prior to laying the foundation.

A significant challenge for a TPM is in comprehending how to effectively deal with ‘people’ situations. For the TPM the ‘softer’ social side of project management is often the least familiar. Kathy Warden, now retired as the Corporate Vice President and President of Northrop Grumman Information Systems stated, “Leading the project team and holding the technical vision for the project are only portions of the job of project manager. Working with the business stakeholders to ensure the system meets business needs should be the primary objective.”^[7] Additionally, working in a politicized environment where human interaction *on a daily basis* is required might cause the technically oriented person a constant amount of trepidation. There is a bit of truth in this old joke: What’s the difference between an introverted developer and an extroverted developer? When you talk to an introverted developer, he looks at his shoes. When you talk to the extroverted developer, he looks at *your* shoes.

For instance, to a techie the beauty of working with software is that, with sufficient skills, the developer can program the software to do just about anything they want it to do. While the rules for dealing with project issues are not as clear cut as those used in writing code, there are valuable skills that can be learned over time which are immensely helpful when dealing with difficult project issues (as well as issues in general). These skills are related to empathy and are known as the ‘Emotional Intelligence Quotient’ or simply ‘EQ’^[8] and are sometimes referred to as ‘soft skills’. Included among the many applications for soft skills are inspiring and motivating the team, developing resources to be effective contributors, and making and communicating tough decisions when necessary. Soft skills are indispensable when resolving conflicts, when negotiating, when delegating, and, most importantly, when influencing. For

the TPM as well as any type of PM, developing and using soft skills is as important as understanding project management techniques.

The single most difficult concept for the TPM to embrace may be the notion that many management solutions are conceptual and come in shades of gray, whereas technical solutions are mostly black and white with specific steps to follow to get to the end result. The approach to resolve an issue, whether technical or managerial, follows the same five steps: 1. define the problem; 2. develop a plan; 3. implement the plan; 4. evaluate the results; 5. repeat as necessary. However, the actionable plan for management issues might include multiple meetings, written status reports, and presentations punctuated with odd graphics such as the Fishbone (Cause and Effect) Diagram. The TPM must learn how to convey ideas without the use of highly technical jargon (and often without the use of a whiteboard); otherwise he may spend quite a bit of time looking into the blank faces of his executive team.



While there are techies who have worked their way up the corporate ladder to the walled-in offices on the executive floor, it is a long way from the developers cube to the C-level conference table. The executives that were once able to talk in 'esolang',^[9] now speak fluent ROI, business sustainability, and the equilibrium market price of risk^[10], and make up the audience the TPM must ultimately relay information to.

The Pros and Cons

The high level topics discussed in this paper are only a handful of the arguments that could be made regarding the attributes and shortcomings of the TPM. Below is a list of pros and con (real and implied) pertaining to the discussions from this essay.

Pros	Cons
<ul style="list-style-type: none"> • Should be able to communicate effectively with the technical world 	<ul style="list-style-type: none"> • May have difficulty communicating with non-technical team members and clients
<ul style="list-style-type: none"> • Should be able to understand the client's technical requirements 	<ul style="list-style-type: none"> • May not understand business requirements
<ul style="list-style-type: none"> • Should be able to understand the technical tasks 	<ul style="list-style-type: none"> • May have a propensity to over-engineer
<ul style="list-style-type: none"> • Should be able to provide more exact work/time estimates 	<ul style="list-style-type: none"> • May not consider non-technical risks to be determining factors
<ul style="list-style-type: none"> • Should be quick to grasp complex IT systems 	<ul style="list-style-type: none"> • May view technical issues to be top priority over 'soft' issues
<ul style="list-style-type: none"> • May possess workable knowledge of Quality processes 	<ul style="list-style-type: none"> • May have trouble delegating technical responsibilities (aka 'I can handle this')
<ul style="list-style-type: none"> • May possess the ability to challenge technical 'business as usual' paradigms 	<ul style="list-style-type: none"> • May not be inclined to embrace process requirements (i.e.: change management steps)
<ul style="list-style-type: none"> • Technical resources tend to have more confidence in a technical PM 	<ul style="list-style-type: none"> • May have difficulty employing soft skills
	<ul style="list-style-type: none"> • May not understand conceptual solutions
	<ul style="list-style-type: none"> • May have limited 'political' skills
	<ul style="list-style-type: none"> • May tend to work in a solitary environment
	<ul style="list-style-type: none"> • May be hesitant to make 'big' decisions
	<ul style="list-style-type: none"> • May not speak 'project management'
	<ul style="list-style-type: none"> • May resist formal project management training which provides universal standards
	<ul style="list-style-type: none"> • May consider project management to be their secondary career
	<ul style="list-style-type: none"> • Technical skills will dissipate over time

Conclusion

Every project requires a leader, one who is focused on the project and who is responsible for the project as a whole. It is undeniable that a TPM is a tremendous asset to technical projects but when time is divided between two unrelated activities, in this case technical activities and project management activities, both suffer, and neither is completed with the highest quality possible. The outcome is that the project is often placed in jeopardy due to disconnected work and leadership activities.

The primary function of a project manager is to deliver the project within the agreed project constraints. While hard skills are generally recognized as technical qualities and soft skills attributed to leadership, these roles are often interrelated. It would be unrealistic to attempt to separate them.

Smaller projects may require only a technical lead or pm in the leadership role, but large projects have complex schedules, require multiple resources, cover distinct deliverables, and involve complicated budgets which aren't reliant on hard technical skills.

No two projects are exactly alike, neither are the managers who in charge of them. The TPM is a valuable member of the project team, but the PM more often has the full skill set required to complete the project as agreed to with the client. The TPM and the PM together are the best management option for highly complex technical projects.

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8. For more information on soft skills or Emotional Intelligence Quotient please visit the following web sites: http://psychology.about.com/library/quiz/bl_eq_quiz.htm
http://en.wikipedia.org/wiki/Soft_skills
9. 'Esolang' is the shortened term for esoteric languages which are computer programming languages meant to test the boundaries of computer programming
10. Equilibrium market price of risk: The slope of the [capital market](#) line (CML). Since the CML represents the [return](#) offered to compensate for a perceived level of risk, each [point](#) on the line is a balanced market condition, or equilibrium. The slope of the line determines the additional return needed to compensate for a unit change in risk.

About the Author



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Zelda Jones, PMP has over 20 years of project management experience in a variety of industries including courts, research and development, telecommunications, and health. Zelda has become increasingly aware that stakeholders often base their project decisions on flawed reasoning, personal agendas, and misinformation. Therefore, stakeholders don't always make the right decisions for their projects. In random conversations with fellow Project Managers she learned that the predicament is widespread due in part to the project management culture of providing exactly what the customer wants (and pays for). She urges PMs to work with their stakeholders to promote fact-based decision making for the best outcome of the project. A graduate of North Texas State University, Zelda earned her PMP in 2006. She is a 7 time presenter at the UT Dallas Project Management Symposium. She lives in North Texas and frequently travels for business which allows her to pursue her hobby, Geocaching. She is a member of Texas Search and Rescue (TEXSAR). Zelda can be reached at Zelda.Jones@tylertech.com.