Engineers are bad project managers

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1 Introduction

Ok, the title is a bit unfair. The truth is I know plenty of engineers who have mastered the art of project management. I like to think I'll be pretty close myself one of these days. But I'm willing to admit that, for me, this wasn't always the case. Like so many others I made the mistake of assuming my engineering degree qualified me as a project manager. But as my career progressed I've identified an predisposition that was ingrained in me as an engineer that prevented me from being a good project manager.

This paper is not going to list generic skills that any given individual needs to be a good project manager. There's no end of literature available that discusses what it takes to be an effective project manager. Instead, I aim to draw awareness of a common predisposition amongst engineering professionals whereby a solution is derived before a problem is properly understood.

2 Methods

This is a reflection on my personal experiences as an engineer transitioning into project management roles and observing others doing the same.

3 Findings and Argument

The title of this paper could be written about pretty much any profession. I could easily fill two pages describing first-hand experiences of other professionals who I've witnessed dismally fail project delivery. But, there is no other profession quite like engineering that embodies such a deep-seated disposition that could inhibit the ability for an unaware individual to succeed as a project manager.

I'm confident that most, if not all, engineering degrees include some form of introduction to the project management discipline. My degree included a semester long subject on project management. But thinking back all it essentially taught us was how to use Microsoft Project.

This is not necessarily an issue. I think geotechnical engineering was also a single semester subject. And nobody's going to deny that geotechnical engineering fits squarely within the civil engineering discipline. However, I didn't graduate thinking I could successfully undertake a geotechnical assessment and there was certainly not anybody who was going to let me. Yet, I can distinctly remember my first week in an engineering role. I was given the task of project management. I willingly accepted it thinking that I could.

I now recognise that this task, although project management by name, was actually construction management. I'll get back to that misrepresentation. First, I'll discuss an observation that I'm not the only engineer who naively thought I was equipped to project manage.

Over the past few years as a leader of a project delivery team I've interviewed dozens of engineers who've applied for project management positions. I've come to realise that there's a common misunderstanding of project management within the industry. During interviews I always ask for the applicant to describe a project management system or framework they're familiar with. This is a pretty unimaginative question and not one that you'd expect would trip up too many individuals with a background in project management. But for the vast majority of applicants with an engineering background the best answer they can manage is: "I've used Microsoft Project". This is the equivalent of a carpenter telling me they'll build a house using only a hammer.

I'm not referring to graduates. Alarmingly these responses are from applicants with previous experience, sometimes considerable experience, in project management roles. What this represents is a large number of individuals who believe they have good project management skills but, in reality, lack the fundamental knowledge to even describe a basic project management framework. Even more alarming is despite this apparent lack of basic project management know-how they've been able to succeed previous project management roles, seemingly, without being held to account.

I started to theorise that perhaps there's an issue with the definition of a project manager. I mentioned a couple of paragraphs back that I now recognise the task I performed early in my career, although project manager by name, was actually construction management. This was an important discovery in my own understanding.

I should clarify now that I'm defining construction management as the process of managing the construction and, perhaps, pre-construction phases of a project. There's nothing wrong with engaging a construction manager or supervisor to facilitate the construction phase of a project. This can be a role that's critical to the eventual success of the project so long as there's an overarching project manager who's accountable for the project as a whole. A project is at risk if the definition of project manager is misrepresented as anything less than being accountable for the entire project.

If you've ever heard a project manager utter the words "I'm only responsible for building it", you've witnessed this issue first hand. I've been involved in far too many "project management" teams where there's a culture of "we only build it". This always ends badly.

Empathetically, I don't blame an engineer who takes this mind-set. An individual will naturally revert to what they do best. In the case of an engineer, what they do best, is problem solving through designing and constructing what is their field of expertise. So, it shouldn't be surprising that an engineer will be drawn into the construction phase of the project.

It would be easy to instead point the finger at universities for not equipping engineers with a sufficient project management skill set. But I also challenge this mind-set. An engineering degree equips students to be engineers. To be effective an engineer needs to be a problem solver. And to be an effective problem solver an engineer needs to be proficient in determining with absolute certainty what solution will work and what won't. Or otherwise put, see things in black and white.

Conversely, management of a project as a whole will never be a black and white exercise. This fundamental part of project management is what a lot of engineers struggle to accept, let alone master.

Expanding on this further, I argue, that the specific part of project management that engineers often struggle to grasp is properly identifying the problem to begin with. Rarely will a clear and fully detailed problem present itself. Usually a thorough, painstaking process of stakeholder consultation is necessary to properly define the problem in the first place.

Reiterating the point I made previously, engineers are problem solvers who are most comfortable when they're faced with a defined problem. Not surprisingly an engineer will be inclined to jump to what they're most comfortable doing. This hard-wired inclination will cause an engineer to move directly to a solution without properly understanding what the problem is that's being addressed.

Jumping into solution mode is a predisposition that I think every engineer can relate. Heck, I've even had to overcome an inclination to jump straight to this end argument throughout writing this paper. But if you're an engineer who's serious about becoming a successful project manager you will need to become aware of this inclination and be prepared to continuously supress it.

4 Conclusions

An engineer can be a good project manager and technical knowledge can be a significant advantage in the successful completion of a project. But to master a project management skill set, an engineer must first recognise their likely predisposition to prematurely jump to a solution before a problem has been thoroughly identified and understood.

Don't jump to the solution without properly understanding the problem.

5 References

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