Professionalism to Me: Legal and Ethical Considerations

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This paper analyzes legal and ethical theories with respect to my personal outlook and professional attitudes.

**Introduction**

I am a physicist by training, but have spent my career working in front line leadership and software development. I have worked on a variety of software and hardware projects for both civil and defense applications since 1997. My specialties include software development, multi-dimensional data analysis and associated algorithm development, systems engineering, and business development. Prior to 1997, I gained experience in laboratory research in fiber optics at the National Institute of Standards and Technology (NIST) in Boulder and in high energy physics (particle accelerators) at Brookhaven National Laboratories on Long Island. I am a native Long Islander who came to Colorado for college. I hold 2 degrees from the Colorado School of Mines – a B.S. in Physics and a B.S. in Electrical Engineering. I also have a Master’s degree from UCLA in Electrical Engineering – my thesis was in Nonlinear Optics.

My current position is the Deputy SEIT (System Engineering Integration and Test) IPT (Integrated Product Team) Lead on a 140-person defense contract. One of my primary responsibilities is to support Engineering Change Proposal (ECPs) efforts – both in the bidding phase as well as planning the details of how the work will be staffed and merged with our existing contractual baseline. Last year, we added $32 million to our contract value through a variety of ECPs. For the new work, I have helped write staffing requisitions, screen candidate resumes, interview candidates, and make hiring decisions. In addition to those roles, I also work as the Cost Account Manager (CAM) for the SEIT IPT. As the CAM, I manage our budget and schedules, analyze weekly and monthly variances for trends that require correction, and forecast our staffing needs both near-term and long-term.

During my professional career, I am seeking to continue to learn new skills, develop new technologies as well as to gain influence in order to help employees achieve better working conditions and advancement opportunities.

**My Ethical Theory**

With respect to my professional work, I maintain a nominally utilitarian perspective. When it comes to my employees, I align with Kant’s categorical imperative and the care ethic. (Velasquez)

***Utilitarian Views***

A utilitarian ethic focuses on consequences or actions, employing such tools as a cost-benefit analysis, and focuses on the solution that provides the most utility to all parties involved. (Velasquez) I use a utilitarian outlook for controlling the scope of my technical work. In real engineering projects, it is not possible to design and implement a perfect solution – compromises must be made. I believe that those compromises must balance the interests of the customer with the company’s interests for executing on the contract. In some cases, the customer will make requests for additional functionality post-contract award. How willing should the company be to support these? It depends upon the customer’s willingness and ability to negotiate new terms for budgets and schedules as well as the necessity of the changes to the success of the project.

***Kant’s Categorical Imperative***

Under Kant’s categorical imperative, all people should be treated “as a free person equal to everyone else”. (Velasquez) I believe this is very important for the management of teams. A manager should not show preferential treatment for certain employees above others. All employees must be given an opportunity to showcase their capabilities as well as to increase those capabilities. On the other hand, a manager must provide equal mentoring opportunities. I have had employees who require much more on the job training than others – one has to be careful to not cause all other employees on the team forego mentoring opportunities because too much time is being spent on one employee. Ownership of capability development ultimately rest with the individual employee.

***Duty to Care***

The care ethic sets forth moral demands that we must nurture relationships as well as to tend to the needs of those who are “vulnerable and dependent on our care”. (Velasquez) I have seen managers literally work employees to death. I have seen projects that worked employees so hard that literally half of them were divorced by the end of the project. I believe that, as a manager, I have a duty to protect the health and well-being of my employees. I am their first line of defense against the demands of the organization. I keep an active assessment of employee stress levels and workloads and actively work to keep them in balance. I emphasize the team concept to my employees – we should help each other when the going gets rough, and make sure the burdens are shared equitably. This does mean that in period of peak flux, I do assist with the technical work as needed. I also help with setting team priorities and finding ways to reduce the total workload – whether through efficiencies or simply cutting down tasks to their essential components.

**Core Legal and Ethical Competencies for My Profession**

***Legal Competencies***

One core legal competency in my profession is accurate timekeeping. We are not salaried in the traditional sense – we charge to contracts and must record our time spent on those contracts in 6-minute increments. The charges made by an employee must be for billable work on a particular government contract. Any employee who cannot maintain accurate timekeeping records or charges for non-billable activities will be dismissed.

A second core legal competency is to conduct one’s work in an auditable fashion. As described in the next section, our contracts are subject to audits by numerous agencies. An employee must be capable of following established corporate practices and policies for maintaining auditable records for every stage of the technological development – e.g., design, development, testing, and performance verification.

***Ethical Competencies***

A key ethical competency is the maintenance of contractual rights and duties. One of the principles of contractual rights and duties is that “Neither party to a contract must intentionally misrepresent the facts or the contractual situation to the other party.” (Velasquez) Our duties include alerting the customer to problems that have been found or risks that have been identified. For most such concerns, it is sufficient to discuss them with the customer during quarterly program reviews; however, there are channels whereby we can receive contractual guidance on more serious issues. Each employee must develop the capability to assess their work and identify concerns to their leadership with sufficient time for reaction to or correction of the problem. Employees who are capable of identifying problems as well as potential solutions advance more quickly than those who are only capable of finding problems.

Key to this competency is the capability for influential communication regarding identified problems and their solutions. Whether it is the development of the Ford Pinto (Grimshaw v. Ford Motor Company & Bruden) or the Space Shuttle (Texas A&M), every organization faces cost pressures during engineering development. It is important that an engineer not only be able to identify risks and potential solutions – especially those that work within the cost and schedule constraints of the project – but to be able to convince others of the necessity of the changes. If the engineers for the Ford Pinto had successfully proposed a way to incorporate the needed safety measures while maintaining the cost of the Ford Pinto at the desired level, lives would have been saved. (Bruden) If the engineers at Thiokol had been able to cast the risks of the shuttle o-ring failure in less technical terms and more of a trade space that policy makers could clearly understand, the Space Shuttle Challenger explosion could have been avoided. For example, “The data presented to [the managers making the decision on launch] showed no correlation between temperature and the blow-by gasses which eroded the O-rings in previous missions.” (Teas A&M) Thus, although the engineers felt strongly about the risks, they failed to communicate effectively in a non-technical manner to their management.

**My Constituents**

In addition to direct managers, direct employees, colleagues, and customers, my constituents include the company’s functional management organization, customer auditors, Capability Maturity Model Integration (CMMI auditors), government agencies like the Defense Contract Management Agency (DCMA), and ultimately, the American tax payer.

***Functional Management Organization***

I work in a matrixed organization, where I not only have a direct line of supervisors but a functional management organization who oversees the activities within the systems engineering discipline. I owe the functional management organizations reports on my employees’ performance, relevant monthly metrics on the project’s performance, and input on new processes and procedures.

I owe functional management prompt involvement in personnel problems, particularly any problems that could result in legal problems for the company, such as potential Title VII discrimination (42 U.S.C.S. § 2000e-2(a)), potential age discrimination, or employee behaviors that could cause a hostile work environment. For example, if I were to observe employees making negative comments about someone’s gender or capabilities based on gender stereotypes, such as in Burlington Northern v. White, I would work with functional management representatives prior to contacting human resources or the company’s lawyers. Since they are more rigorously trained on such issues, one of the roles of functional managers is to ensure I am able to effectively communicate with both employees and human resources about such problems.

 I also owe functional management accurate performance information on my employees. During the 1990’s, my industry was in a period of contraction, which led to a disproportionately lower number of Generation X employees. This means that, when faced with layoffs, functional management must generally choose between employees of the baby boomer generation or Generation Y. Certainly, they are concerned about avoiding age discrimination. (ADEA) Accurate performance information is needed to avoid situations like the one described in Gross v. FBL Financial Services, where an older employee was dismissed via layoff in part because new managers failed to capture his value to the company in their performance appraisals.

***Customer Auditors***

Our customers audit the quality of our project planning and execution through Joint Surveillance Reviews (JSRs). In preparation for a JSR, such as the one I will support in September, I owe the customer a well documented and complete cost and schedule baseline. The technical activities that are planned should be complete and accurate to the best of my knowledge and the knowledge of appropriate technical stakeholders on the team. The cost plan must reflect the customer’s annual funding profile and past actual must demonstrate that the team is executing to the plan.

***CMMI Auditors***

The purpose of CMMI is for an organization to document its best practices and use them to improve the organization’s efficiency and effectiveness. (Carnegie Mellon) The CMMI audit is usually summarized by demonstrating that, as an organization, you “say what you do and do what you say”. For CMMI, I support organizational process development as well as enforcement. As a leader, I need to ensure my team is using the processes provided as well as maintaining an organized, auditable record of artifacts from those processes. When a CMMI audit is conducted, I support the audit by providing our team’s records to the auditors as well as answering any questions they have.

***DCMA***

For my cost accounts, I am responsible for developing bid models. In general, these bid models are based upon historical costs as well as technical information describing the relevance of those historical projects to upcoming work. For proposals, I employee these bid models to develop to proposed price for the work. Both the proposal and the bid model are subject to DCMA audits for accuracy. (DCMA) I am responsible for developing my bid models in such a way that they are complete and auditable, as well as supporting the auditors.

During project execution, I am responsible to DCMA for my implementation of the Earned Value Management System. Under this system, I use defined rules for breaking the technical work into smaller pieces and assigned costs to those pieces. Metrics are then developed based upon the pace that work completes as well as the accumulated cost of the work completed to date. (DCMA-EVMS) I am responsible for understanding the rules of EVMS, faithfully executing EVMS for my team, and supporting any DCMA audits.

***The American Taxpayer***

Ultimately, it is the American tax payer who funds the contracts I work on. When I evaluate the project’s processes or the decisions that are being made by the organization, I ask myself how I would feel if the situation were to find its way onto the evening news, to be judged in the court of public opinion. I also ask myself what I would say to my friends, family, and neighbors. I use that vision of the American taxpayer to help me identify the areas of a program that need to be fixed as well as to find the courage to speak up about the needed changes.

**The Virtues of Integrity, Justice, and Courage**

***Integrity***

When I first started working as a manager, a wise coworker advised me that my employees would always follow my lead – if I come in at 8 am, they will come in around 8.If I routinely ignore the company’s core hours of 9-3, they will, too. If I belittle a customer, they will belittle the customer. To the extreme, if I set a precedent of believing it is okay to act illegally if the desired results are achieved, such as in Jeffery K. Skilling v. Unites States, they will, too. This advice illustrates the necessity of integrity as a core leadership value.

According the Kant, part of integrity is ensuring that one acts in the same manner one would want others to act. (Velasquez) This is captured by the advice provided to me as a new manager, and it is advice that I have lived by – and suffered by when others have not lived by it. I once worked closely with a manger whose behavior toward and disrespectful comments about others were negatively affecting our team because employees were emulating his behavior. The team environment quickly became “toxic” (as functional management described it), we experienced over 50% turnover as employees sought more positive work environments, and I was eventually put in charge of his team. He did thank me later for my diligent help in working with him and admitted that he had certainly had a part to play in all that happened.

***Justice***

John Rawls described that justice should be determined using defined principles, such as the principle of fair equality of opportunity. The principle of fair equality of opportunity is that the opportunities needed to pursue privileged careers should be extended to all members of society. (Velasquez) The best ways I have found to incorporate the principle of fair equality of opportunity into my professional work are through mentoring and working with schools on educational programs. Mentoring provides an opportunity for me to help junior employees gain the skills and knowledge they need to succeed in their careers. Educational programs through schools can be as simple as judging competitions and as personal as presenting information about your background and career to students. Many students do not know what engineers do or that there is a fairly low bar to entry into the field. My favorite memory is from a high school assembly I spoke at in Aurora, Colorado. After I spoke about my job and my background, the students quizzed me on my educational background, my salary and how I was able to pay back student loans, my age – and they ultimately found out it was my birthday. So, the assembly broke out into a spontaneous chorus of “Happy Birthday”.

***Courage***

The virtue of courage is to face “what is fearful when it is worth doing so”. (Velasquez) In my experience, the two professional situations that cause the most fear are providing bad news to upper level managers or customers and standing up for employees who are receiving undo poor treatment – discriminatory or otherwise – perhaps because both are stepping out of one’s normal bounds. Both are important to do, even though it may be more comfortable to let someone else handle it.

In the case of bad news to upper management, communication style and content is the key to success. Facts and data, though required, are not enough to properly communicate the message. There are political considerations – such as whether you need to go around another layer of management to communicate the message or how to navigate the motivational lens through which the recipient will receive the information. I have had routine interactions at the executive level and with customers because they know they can count on me to have the courage to be honest – and honest in a way that is useful to them. I usually advise engineers to make sure part of what they provide to upper management and customers are “stealable slides” – materials already written at the right level to communicate a message to their stakeholders.

As for standing up for employees, there is always more room for personal growth. A recent area of growth for me is learning how to be a better ally for Gay Lesbian Bisexual and Transgender (GLBT) employees. The need for this came to my attention three years ago, when I had an employee who felt the need to hide her wife’s face in family photos on her desk. She always placed another picture of her kids over her wife’s face in the photo holder. I do not want any employee to feel like they must pretend to be someone they’re not in order to work on my team, so I joined the GLBTA association on the company’s campus to learn about how to be a better manager and promote diversity on my team. Even just knowing that I was trying actually made the work place friendlier for my employee, and she quickly learned I was not the only ally on our team. I was happy when she uncovered the picture.

**Future Career Path**

For most of my career, I have commuted 20 or more minutes each way to work. My current commute is typically between 45 and 55 minutes each way. I am seeking my future career path to bring my work closer to home. I am still seeking to be involved with technological development as well as leadership. I would like an opportunity to help an organization grow – not just monetarily, but culturally. There are ways in which to run a lean organization while treating employees well and providing them with opportunities to advance their careers, and I can help an organization implement them or maintain them, should they already be in place.

**Professional Legacy**

My professional legacy is and will continue to be a quiet one – I enjoy watching both the technologies and people I have helped succeed and continue to grow. My credit is received through the people I have worked with – last year, one team leader had described me as “the glue that held the team together and enabled it to succeed” through some tough times. My credit is also received when I hear tales of technologies I helped develop continuing to do good things for the men and women of the military.

As a role model, I want to demonstrate that you can run a team, produce a good product at a reasonable price, and not compromise your morals to do it. I try to encourage my employees to stand up and ask questions, to challenge things that look wrong. I tell them that, with some political savvy and the right style of communication, you can get organizations to change their behavior. I seek for my legacy to include that they not only embody the behavior in their career, but teach others.

I also teach my employees that “right” does not mean perfect – frequently engineers feel imperfect technology is somehow morally wrong. I remind them that telling a customer that you spent all their money while perfecting the design but don’t have anything built is more “wrong” than producing a product that simply meets but does not exceed the technical requirements within the customer’s cost and schedule constraints. I help them to find efficiencies and compromises, and we ensure that none of those compromises affect the project’s integrity. I also demonstrate through my actions means by which one can communicate proposed solutions and their rationale to upper management and customers, so everyone knows what they are getting well before the delivery date. I enjoy a sense of success when I see employees grow into a position where they understand how to develop engineering products within cost and schedule and go on to teach others. I also enjoy a sense of success when upper management and customers say that they find me trustworthy. I had one software development project follow me as I changed employers, because the customer refused to trust anyone else with the work.

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