

Politics and Legislation

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“We cannot solve our problems with the same thinking we used when we created them.”

—Albert Einstein

November 13th, 1993 will always remain an unforgettably tragic day for my wife and I. Our 18-year-old daughter, Jennifer, who was a college sophomore, decided to stop for bagels at a nearby shopping plaza after finishing her shift at the psychology clinic where she worked. As she was leaving the shop at about 11:30 a.m., she was abducted. After being held captive for a time, Jennifer managed to dial 911[†] on her car phone, but her urgent call for help was for naught—she was raped and shot to death in bright daylight. In this moment of life and death urgency, the 911 dispatcher and her supervisor could not even determine which cell tower was transmitting Jennifer’s signal; they had no idea where she was. All they could do was helplessly listen to the last twenty minutes of our daughter’s life.

Jennifer’s phone, as it turned out, did not contain location-enabled technology—what is now commonly referred to as the global positioning system, or GPS, a technology that was not available until 1995. Though the potential live saving benefits of this technology had been realized across the society, it was still awaiting broadband implementation. If we had had today’s technology in 1993, my Jennifer might still be alive today.

Our family’s tragedy prompted my involvement in public service—I became determined to help make my state, New York, a safer place. Since that life-altering episode, I carry a copy of the tape from Jennifer’s 911 call in my briefcase at all times. It serves to keep me grounded, but more importantly, it strengthens my determination and motivates me not only in my day-to-day activities, but in my life’s quest for the safety of others.

After the trial, Jennifer’s assailant was convicted and is now in a New York state penitentiary, serving 37 1/2 years-to-life. It was right after the trial that my first duty

[†] The standard emergency telephone number in the United States.

as a citizen-protector began, as I approached my county legislator about getting security cameras installed in the parking lot of the shopping plaza where Jennifer was abducted. I pointed out that we use security cameras to protect the *merchandise* in the stores, but we do nothing to protect the *people* buying the merchandise. The legislator never acted on my plea for public safety.

At the time, I was working as an engineer for Bausch and Lomb, an international corporation known for its ophthalmic engineering and vision health products. By training, I am an industrial engineer, with twenty-eight years of experience in manufacturing engineering, as well as process and product systems analysis. My responsibilities in technical project management have included time-series analysis, operations, cost justification, scheduling, efficiency investigations, and modeling of technical requirements. *Engineer* is an identity that *defines* me—my personality, my interests, and my abilities. In some sense, you could say engineering is my way of life.

Even though I was an engineer and not a politician, I believed that I could do a better job than the incumbent legislator—at the very least, I knew I would get back to people. So I decided to run for the legislator's seat in an election that year. After extensive campaigning while working full-time at Bausch and Lomb, I lost that election by about 600 votes; a relatively close margin, considering no one had contested that seat in the past fourteen years. Buoyed by that constructive experience, I ran for the state assembly in 1996 during a special election. This time, I campaigned for several weeks, going door-to-door in six to ten inches of snow and at harsh winter temperatures below freezing. With great determination, I explained my life's quest and the reason for it.

I won.

Suddenly, as an assemblyman, I found myself in a position to influence change. I went right to work on a public safety initiative involving enhanced 911 or E-911. Unfortunately, my fellow politicians did not understand the technology. I then extensively educated my colleagues and got legislation moved to the governor's desk, but he simply and repeatedly vetoed this vital initiative.

Undaunted, I turned to my project management skills, which were to prove as useful in politics as they had been in engineering, I worked hard to push a new bill that involved redirection of monetary funds from various sources through the state assembly into E-911 programs. But the bill rested in the senate for long periods without any action.

I am a typical engineer, and I will admit that sometimes I have been impatient, frustrated, and disappointed by the length of time involved in typical political processes. But politics has taught me the value and benefits of negotiation—this knowledge has been a benefit for me ever since. After thorough research involving each and every line of the state's operating budget (thanks to the critical skills I learned from my cost justification and efficiency analyses in engineering), I proposed a cost-cutting deal to the state governor.

Again the governor declined. And then again.

But the legislation, as it turned out, was poised for implementation—it needed only one last tragic push. Four teenagers drowned in January 2003, when their rowboat capsized off City Island in the Bronx, New York. Like my daughter

Jennifer, one of the boys managed to make a 911 call using a wireless handset. According to published reports, the boys told a dispatcher they were on Long Island Sound and their rowboat was taking on water. But the dispatcher could not determine their location, and a supervisor allegedly decided there was not enough specific information to notify rescue authorities. This caused an unconscionable fourteen-hour delay in the search for the boys—and hence, a media firestorm.

I, too, expressed my outrage, telling the press that those deaths were on the governor's shoulders for his lack of support on the E-911 initiative. That statement made headlines. My persistence was finally recognized by the state senators, who appropriated \$100 million of the 2003–2004 federal government budget.

But the governor exercised yet another veto.

The recent tragedy had helped the legislature to override the governor's veto. The dollars have since then been spent on deploying E-911 technology throughout New York state. New York will be the first large state to meet the Federal Communications Commission's regulations on E-911. It had taken me nearly a decade to achieve my goal, but it was well worth the struggle. Now New York has an E-911 facility with triangulation and GPS features for anyone dialing the emergency number. What is even more satisfying is that the rest of the country has followed suit in implementing this crucial public safety system. Hopefully soon, anyone, anywhere within the United States, can have the safety net that might have saved our dear Jennifer's life.

Why Does Politics Need Engineers and Technologists?

My engineering training and experience have given me the knowledge I need to be able to help ensure public safety. However, as importantly, politics has given me the ability to *exercise* that knowledge. My day-to-day responsibilities as an assemblyman make full use of my engineering skill set—I serve as a member of the committees on economic development, job creation, commerce and industry, local governments, small business, alcoholism and drug abuse, and library and education technology. I also co-chair the legislative commission on rural resources, as well as the legislative commission on toxic substances and hazardous waste within the assembly constituency. My constituents and I meet periodically in my assembly district, and my duties also involve weekly visits to the state assembly and capitol to complete the link between the government and the public. All of these responsibilities provide a platform that capitalizes on my engineering training and skills for the greater good of everyone.

All national, regional, and local governments in the world could undoubtedly make use of efficiency enhancement, and who better to improve that efficiency than engineers? Manufacturing, service, and even healthcare industries have adopted the principles of total quality management (TQM) and Six-Sigma. I truly believe these engineering tools can help the efficiency and functionality of politics as well. Engineers are experienced at enhancing cost-effectiveness and process efficiency; they, perhaps more than any other group, have the potential to cut away the bureaucratic tape that is the bane of the political process. Politics desperately needs new blood and novel thought processes to solve problems from a systems perspective, and to simply get things done. Engineers can capitalize on this opportunity,

much as they do when involved in new product development and entrepreneurship. But a word to the wise—in the world of politics, it takes days instead of hours, and months or years instead of weeks, for action. This different way of operating can be frustrating for engineers and technologists. It is prudent to learn the art of patience.

In many parts of the world, people have given up on their deeply dysfunctional governments. Instead of healing the system, they end up alienated from it. Unfortunately, it is all too easy to look at a dysfunctional process and cynically blame politicians. This alienation and public cynicism is unsafe for the future health of governments and nations. Engineers, I believe, can play an important role in the healing process.

Perhaps surprisingly, engineering and information technology have been very useful in recent years in creating awareness amongst the public about political processes. Two very successful recent technology examples include the successful deployment of open source software for monitoring legislative earmarks, as well as blogs, which improve the capability for political critiques, decentralization, and transparency. If interdisciplinary thinkers and public servants from the fields of engineering and technology join hands and become directly involved in politics and governance, the effectiveness and efficiency of these systems are bound to experience dramatic improvements. Legislative processes and actions could be completed in a more timely fashion, and decisions could be reached systematically and effectively.

Entry Strategies into Politics

My entry into politics, which happened because of Jennifer's tragedy, was unconventional; however, I would ask a single, basic question of any engineer or technologist who is thinking about the possibility of serving the public through a career involving politics and governance. That question is—*are you involved in your community?*

I invariably ask this question of those I interact with—even constituents who approach me seeking help, regardless of their party affiliation(s) or vote. By the word *involved*, I mean, do you know your neighbors? Do you try to help them? Do you volunteer on community boards? You really cannot complain to your elected official if you are not trying to make the community a better place by doing something yourself. I think this is an individual responsibility for all of us. Vaclav Havel, the first president of the Czech Republic, described the essence of this idea:

“Genuine politics—the only politics I am willing to devote myself to—is simply a matter of serving those around us: serving the community and serving those who will come after us. Its deepest roots are moral because it is a responsibility expressed through action, to and for the whole.”

My performance in politics today flows directly from my passion and involvement in the community. Even before Jennifer's death, I had always devoted myself wholeheartedly to such activities; I was a church councilman, a Mason, a member of the Optimist Club, and a Boy Scout leader. I always kept myself engaged in community service wherever our family moved, be it on an executive board for

scouting and or as the president of a Parent-Teacher Association or Lions Club. In 1994, after I began my activism to prevent crime, I was appointed by the mayor of Rochester, New York, to a team to mitigate crime and violence in the community. Ultimately, I became a leader on the Task Force to Reduce Violence. The group also worked repairing homes, planting gardens, and cleaning streets, demonstrating that community members do have a desire to bring an end to violence and are absolutely willing to devote their time and energy working together to achieve peace.

So my fundamental advice to students or professionals who want to enter into politics is to engage themselves in any of the many community projects that are available. Start becoming a change agent at a local level. This will also help to improve your networking and people skills, which are valuable for engineering work as well. Always remember, politics is all about people and their networks; you will always need this support if your political career is to survive and prosper.

Many institutions, policy centers, and local political offices offer internship opportunities for college students. You can make use of those internship opportunities to gain experience with politics and policy research. This type of work can help you learn how to analyze and distribute information and become familiar with financial issues, campaign activities, and international and domestic issues. Interning at a state or federal office can also help you understand the “statics and dynamics” of bill formulation, proposal, and passage; as well as the process of holding public hearings prior to the formation of new laws. Educational and experiential service opportunities in diplomacy, international relations, foreign affairs, and global relations are also available. The pre-doctoral and post-doctoral congressional fellowships offered by many state governments are also a worthwhile way to get a feel for political processes.

Recommended Qualities for “Political Engineers”

Politics is a very difficult field. (If anyone says it is easy, then you can be sure he or she is not doing the job properly.) Based on my experience, I recommend the following five qualities for an individual from engineering and technology to succeed in political service.

- **Honesty:** Regardless of your political affiliation, a fundamental duty for anyone in this field is to be honest and upfront. History offers abundant examples of politicians who have done extraordinary work to help those they serve—these politicians are remembered with gratitude for decades and even centuries after their deaths. But history also holds examples of shyster-politicians who used lies and fakery to fulfill their selfish desires. Do not have your name go on that latter list.
- **Passion:** Only the most passionate will survive in politics. If you are genuinely committed to a cause, and work diligently in relation to that cause for public welfare, you are bound to gain people’s support. In the story of an egg and bacon breakfast, the chicken was involved but the pig was committed.
- **Persistence:** Politics means constantly fighting battles for your cause of serving people. This means you must be persistent and resilient. Giving up is an option only for those who are not fully committed to their cause. Inspiration can be

derived from the countless high-minded political leaders who have clung persistently to their mission and changed the course of history, and the destinies of nations and societies.

- **Public Relations:** Politics is a profession of helping and serving people. A politician will learn about—and be influenced by—many different lives. In some cases, the politician may in turn influence the lives of others. A career in politics demands individuals who genuinely care for people and relate to them on a personal level. Good public relation skills are important, especially when it comes to educating fellow politicians; your skills in this area will play a dominant role in determining how many political friends you will make during your career, and whether your colleagues will support your bills. Effective relations with others is vitally important in gaining support and spreading your professional cause. You do not have to be born with public relations skills, but much like any other skill, public relations can be learned and developed through practice.
- **Systems Thinking Skills:** Finally, engineers with an ability to solve problems by considering all components of a system are truly a great asset to the political system. Unfortunately, most political issues are non-linear and emerge unexpectedly. This requires engineers to understand non-linear systems and the blind spots from which they emanate, in order to develop reasonable provisions to help prevent, or react appropriately to, these unexpected problems instead of simply managing their uncontained aftermath. In politics, systems-based thinking is key. Engineering is one of the very few professions that teaches and develops this mental framework.

Concluding Remarks

Among the very best inventions of the Greeks and Romans over two thousand years ago, was the democratic process—a way to help people more effectively govern themselves. Elected officials in this model were primarily *servant* leaders. But over time, the situation has shifted. Elected officials often come to believe that it is the people who are beholden to them. Politics is a platform of great power; individuals can become self-absorbed and begin playing games of manipulation and exploitation. Whatever one's position in the political hierarchy, be it a council leader or the president of a nation, it is his or her fundamental duty to serve the people. Engineers and technologists can effectively serve as a new breed of individuals to resurrect the true intent of the democratic process and change the way systems operate. It is my great pleasure to invite my fellow engineers and technologists to consider public service through a career in politics. It is high time we got *real* problem solvers on board to address important social issues.

My Country! When right keep it right; when wrong, set it right!

—Carl Schurz

Suggested Reading

Taleb, N., *The Black Swan: The Impact of the Highly Improbable*, Random House, 2007.