I live in Houston, TX, our nation’s fourth largest city, where a network of freeways connects neighborhoods, business districts, and diverse cultures. Freeway construction seems endless, with several major and complex projects in progress at any given time.

In April 2015, the Texas Department of Transportation (TXDoT) announced it would raze and relocate the Pierce Elevated—a stretch of Interstate 45 (I-45) that runs through downtown. TXDoT repaved this road more than 15 years ago, and it did not ease traffic; someone should have anticipated needs and planned relocation at that time.

In June 2015, a construction contractor defaulted on a 38-mile segment of a $1.8-billion Houston freeway project, delaying it by at least three months. Earlier, this contractor defaulted on three other TXDoT projects; the agency should have known the risk.

In July 2015, the I-45 overpass nearest our home closed for demolition and redesign. All the orange cones, construction barriers, and restriped lanes make it riskier to get where I am going. When completed, I expect fewer risks and major benefits before I will view the project worthwhile.

Entering the freeway with shortened merge lanes, navigating rerouted lanes at high speed, and sitting in traffic pinch points curiously remind me of managing large, complex software projects.

**Software vs. Construction Management**

Software and freeway construction projects both start with a concept and vision. By applying strategy,
planning, and execution best practices, both types of projects can yield benefits with minimal disruption. Yet projects often do not proceed in this way.

Like rebuilding a freeway rather than redesigning and relocating it, I see organizations implement software that fail to meet needs, account for future growth, and optimize and standardize business processes.

Like construction contractors that default, causing project delays, uncertainty, and inconvenience, I see software implementation contractors that fail to understand user needs; get the right people involved; plan, and work to the plan; properly configure and install the software; manage these complex efforts; identify and communicate risk; and address organizational change.

10 Software Strategies
Adopting the following 10 software lifecycle management strategies can put you on the road to meeting your objectives.

1. Assess the Situation
What business and IT issues are driving you to seek a software/technology solution? Consider your motivation. Is your motivation to address compliance issues, replace outdated legacy systems, manage data from a recent acquisition, or something else?

2. Paint the Big Picture
Do things in order: Address “big picture” strategic issues first; talk with software vendors later. Ask yourself the following questions:

- What business benefits do you expect?
- What are the potential risks, and their impact?
- What strategies will you implement to ensure success?
- What resources will the project require?
- What is a realistic timeline?

3. Gain Executive Sponsorship
Software initiatives with executive sponsorship have a much better chance of success. Identify and engage sponsors who truly support the effort. Seek sponsors who are respected, demonstrate leadership, make the tough decisions when needed, and communicate up and down the organization.

4. Plan, and Manage to the Plan
If you do not spend adequate time planning, you may come across roadblocks and detours. Since each step in the software lifecycle sets the stage for the next, set direction early. Manage to the plan to avoid scope creep. Know that plans can change during the lifecycle, so be sure to have a process in place to decide when to alter your plans.

5. Identify and Engage Stakeholders
Identify internal and external stakeholders, such as operations, management, and staff. Define the scope of the effort (i.e., by job role and geography) and define the software user population. Define the user population (i.e., the specific job roles within the organization) at stated global locations. Engage user–stakeholders early in the lifecycle and appoint a core team that will stay engaged throughout the effort.

6. Achieve Consensus on Needs and Priorities
IT projects are about the business and the users, not about technology per se. Business needs set the scope of the software initiative. Poor business requirements cause problems in over two-thirds of software projects, so be sure to clearly and concisely document needs.

To develop the business needs, identify a team that represents user–stakeholders. Keep in mind that stakeholders have different perspectives, agendas, and ideas about the best technical solution. Bring the team together to build a set of consensus business needs and help the team prioritize needs, then use these priorities to drive the initiative forward.

7. Be Objective
Develop objective software evaluation and selection criteria before seeking a software solution. Use objective criteria and a level playing field when talking with software vendors, holding software demos, preparing a request for
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The Air & Waste Management Association is recruiting instructors to be a part of the Professional Development Course program at the 2016 Annual Conference in New Orleans, Louisiana on June 20-23, 2016.

Course dates: Sunday, June 19 and Monday, June 20.

A&WMA is seeking courses in the following areas/topics:

- Air Pollution
- Modelling and Monitoring
- Environmental Management
- Air and Waste Management
- Air and Waste Regulatory Compliance and Permitting
- QEP Prep
- Any other area of interest in line with the mission and goals of A&WMA

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proposal, and evaluating proposals. Carefully consider business needs and priorities, benefits and risks, software usability, and the ability to work with the vendor, among other factors.

**Manage Benefits and Risks**
Organizations that identify the benefits they expect from their software initiative, and measure how well they achieve those benefits, are more likely to succeed. Risks are just as important. Prepare a risk management plan to document potential risks and how to manage them.

**Tap a Skilled Navigator**
Engage a seasoned, objective party to help you navigate the software lifecycle. This navigator will use proven methodology to keep the project on course. This person must be:

- agile;
- fluent in strategy, subject matter, and IT;
- proficient in directing large, complex projects;
- able to identify and escalate issues that arise; and
- experienced with lifecycle deliverables.

**Don’t Get Stuck in Traffic**
Successful freeway construction and software projects demand strategic thinking, planning, and first-rate execution; otherwise, they can lead to costly redesign and rework, added risk, and frustration. The next time you start a software initiative, don’t get stuck in traffic—employ these 10 strategies to help meet stakeholder needs, achieve expected benefits, and manage roadblocks and detours along the way.

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