
Practice Periodical



Give 'em A Chance

Each spring and fall I walk into a crowded room of anxious senior engineering students. It is the first day of classes. This is senior design capstone. They are about to learn who their teammates are and what project they will be working on. The projects are provided by industry sponsors and the project proposals are purposefully written very broadly; we want these aspiring engineers to work with their sponsors to determine a suitable scope of work. The energy and enthusiasm is great...for about three weeks, and then reality sets in. The projects are more work than they ever had. The 3 years of prior classroom preparations is never enough. That means life-long learning starts now.

For nearly 30 years before life-in-academia, I watched managers in for-profits and leaders in not-for-profits struggle with attrition and the need for personnel development in order to have people ready to replace the 'fallen'. It was always hit-or-miss whether in business, in community service, or in churches. And, as a manager, I was part of it.

I had an epiphany one day. It was from a very unlikely source. This is not a political correct source from which to learn, but lessons come from strange places even for managers and leaders. I was watching the news about some war-torn country in a depressed area of the world. Where doesn't matter. The images are repeated it seems every day; small children carrying automatic weapons into battle.

I asked myself the question, Why? I realized it was borne of somebody's desperation. And then I asked myself the other managerial question; how? How do you prepare someone at that age for that kind of work? Really, at any age.

The authorized and conventional military has a knack and a process for taking 18 year olds and turning them into highly competent soldiers, technicians, managers and leaders. They done it forever. Somehow, we haven't been willing to model that in business. Centuries ago, religion was also able to transform young women and men into powerful change agents. Before our life spans increased, every sector of life was replete with high performers half my age—maybe more than half my age.

Yes, of course, there are iGen'rs (my phrase for the Y-Gen and Millennials) who are 'rock' stars today. Not many, however.

I thought about that when I was in management in private industry and realized, younger employees just need a chance. They need a challenge. They need to work on something uniquely important to the company or the organization. Something that was also important to them.

As engineering management practitioners, we know that. We must practice it.

If you're a manager, find someone in waiting. Give them an assignment that is beyond what you would normally give a new(er) person. Get out of their way while supporting their struggle. Give them the required resources and maybe a wee bit more. Let them run with the project. Let them fail. Let them recover. Let them grow. Let them prepare to take your place.

Someone wiser than me told me this, “The best managers have the most people promoted.” I worked for one or two of those in my industrial career. They pushed me. They gave me challenges beyond my capabilities. They expected me to practice life-long learning. They expected me to find the right subject-matter-experts and to engage them in helping me understand and finish those assignments. I grew from those experiences. I learned lessons I’ve not forgotten. And, still I practice growing today.

Those capstone student teams sometimes spend a couple of weeks—some spend a couple of months—staring at their problem statements. They spend/waste time staring at blank lists of alternatives, staring at decision matrices without criteria. They wonder how in the world they can develop a meaningful engineering design specification so they will know when success is staring them in the face.

And then they have an epiphany. Maybe it is the pressure of the looming milestones from their project schedule that provides the energizing jolt of reality. “It must be done.” “It can be done.” “We are the team to do this.” They pick up the weapons—tools—of the engineering trade. They find more tools, advanced computer tools that make them seem like advanced technologists. And then they finish the design. They finish the analysis. They complete the technical and economic feasibility analysis. All with very little management. Because...they were given a chance to prove themselves capable of doing something of value for their sponsors. Something of value for their soon to be alma mater. And, most importantly, something of value for themselves. Lessons learned that they will apply throughout their careers.

The capstone students really want someone to give ‘em a chance to become ‘rock’ stars of capstone projects.

If I could give you a challenge it would be that you find some young engineer and

give ‘em a chance to grow, to learn, and to excel. Do it for your organization. Do it for yourself. Do it for them.

Gene Dixon, PhD, PEM
2015 ASEM President

Success is not final, failure is not fatal. It is the courage to continue that counts.

~ Winston Churchill

ASEM 2015 INTERNATIONAL ANNUAL CONFERENCE (IAC)

Driving Change:

An Engineering Management Imperative

Hosted by

Rose-Hulman Institute of Technology
Alexander Hotel, Indianapolis, Indiana, USA
October 7th – 10th, 2015

We are down to the final stretch of the conference. We have 90 peer-reviewed conference papers, over 130 presentations, by authors from 23 countries around the world.

Industry Roundtables: ASEM’s 1st annual industry roundtable consists of panel members with industry experience who will share their most challenging set of issues in overcoming obstacles to change in engineering management in an open forum. Each panel member will summarize their topic areas listed below, to spur an open and valuable discussion on overcoming obstacles, implementing best practices, sharing lessons learned, and celebrating success stories. Audience participation will be welcome in the form of real-time questions which the panel will address as time allows. Industry Roundtables Topic Areas:

- Engineering Management in a Complex Matrix Environment

- Systems Engineering and Change Management in Department of Energy
- The Path to Becoming Innovative: Blending Theory and Practice
- Recognizing Different Perspectives

2015 IAC will be in the [Alexander Hotel](#) in Indianapolis, Indiana, USA. To make your reservation at the ASEM special rate, please follow the link above.

[Conference registration](#) is open to attendees now. To view and get the early registration rate, please visit [ASEM 2015 IAC Site](#). Conference registration cost includes all technical sessions and workshops, proceedings, all meals during the conference, social event, and industry tours.

For more information on conference technical contents, please contact our technical chairs:

Dr. Suzanna Long, longsuz@mst.edu

Dr. Ean H. Ng, ean.ng@oregonstate.edu

Dr. Alice Squires, alice.squires@wsu.edu

For more information on hosting and sponsorship, please contact our host chairs:

Dr. Craig Downing, downing@rose-hulman.edu

Dr. Eva Andrijic, andrijici@rose-hulman.edu

Dear Auntie EM

Dear Auntie EM:

What is the difference between undergraduate and graduate school? Should I consider graduate school?

Undecided

Dear Undecided:

A straight forward answer: In undergraduate, you learn the general knowledge within your field, whereas in

graduate school, you focus on a topic that is of interest to you. In other words you focus on breadth in undergraduate and depth in graduate study.

A more philosophical answer, so to speak, is that you are expected to acquire different types of skills. In the engineering field, undergraduate studies mainly focus on whether you can use the technical knowledge you learned to solve a known problem (i.e. you learn how to fish with the most of the existing fishing devices). In graduate school, you are expected to learn how to acquire in-depth knowledge of a certain field, and create solution to a problem that is not well defined (i.e. you learn how to design and build one/two fishing device(s) and you are expected to build one that works best for the lake/pond/stream /sea that you want to fish in).

The amount of work required differs as well. In undergraduate, most of the information will be given to you, you need to learn it and apply it. In graduate school, with the guidance of the professors, you are expected to acquire most of the information on your own, and interpret the information on your own.

Going to graduate school is a personal choice. Some do it because it can help them advance in their career. Some do it because they want an advanced degree. Some do it because they want to know more or learn something new. Some do it because they cannot decide what to do when they finished their undergraduate degree. Whether you should consider graduate school or not is your personal choice. But ask yourself, what is your motivation?

Good luck,

(Auntie EM's academic) Cousin Grasshopper

Got a question about engineering management? Send it to Practice.Periodical@asem.org and look for an answer in a future edition.

GUEST COLUMNIST

Decisions

By: Sheryl Hodges

Who has worked for an organization or on a project where decisions weren't made timely or at all? How did this impact you and your team members? Decision-making can be difficult. However, a leader makes decisions, stands behind those decisions including those that didn't work out, and corrects course.

A very wise man (my Dad – a successful professional) taught me the importance of making a decision. During my career, I've often thought of all the examples that he, among others, have taught me.

Since a child, Dad always said "Make a decision. No decision becomes a decision, so make a decision." He'd then explain that if you don't make a decision, that is a decision. You'll reap the consequences of not making that decision, as the situation will be out of your hands and take on a life of its own. Now, he didn't mean that you always had to take action but rather know that you made a conscious decision to take or not take action.

Dad also didn't mean to make arbitrary decisions but to make informed decisions. Gather the facts, gather input from those whose opinions you value and make the most intelligent decision that you can at the time. One of his other favorite words of wisdom were "It Is What It Is". Be realistic. Facts are facts. There are times when your actions won't work out...that's okay...as long as you work to fix the situation and learn from your mistakes.

When faced with a decision, first define what decision you are trying to make. Answer the 5 Ws and 1 H – Who, What, Where, When, Why and How in order to frame the required decision. Involve others by soliciting advice and input – try to see all sides of the issue. Use techniques such as SWOT analyses, and Risk/Reward charts to

organize your facts and ideas. Ask yourself "what does my 'gut' say?" – listen to your instincts as a guide also. Make a rational decision based on the facts. Communicate, communicate, and communicate the decision. Monitor the outcome and solicit feedback – time will tell. If the decision proves successful – celebrate it. Not so good – take responsibility, course correct, and learn from it for next time.

A Key to Management Success...Make informed decisions, take actions, monitor, and correct if needed.

Dr. Sheryl L. Hodges, D.E., P.E., L.P.G. spent 25 years in leadership positions in the private engineering/construction field and in public government service prior to beginning her academic career as an Assistant Teaching Professor in Engineering Management at Missouri University of Science and Technology.

AMERICAN SOCIETY FOR ENGINEERING MANAGEMENT

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www.asem.org

asem-hq@asem.org

ASEM World Headquarters

200 Sparkman Drive, Suite 2

Huntsville, AL 35805, USA

T: +1 (256) 503-8485 F: +1 (256) 723-8877

Practice Periodical Editors:

[Dr. Susan Murray](#), Missouri S&T

[Dr. Ean H. Ng](#), Oregon State University

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