



Dennis Bodson,
President EMS

The President's Corner

Dennis Bodson PE, President EMS

Dear Member:

On January 1, 2002, I began my term as President of the Engineering Management Society EMS. On December 31, 2003, I will finish my second consecutive one term, which is the maximum permitted by the Society Bylaws. During these two years, your Board of Governors (BOG) and I have worked very hard on your behalf to provide our membership with enhanced services and benefits wherever possible. There are several major areas the EMS BOG focuses on: **Education, Conferences, Awards and Recognition, Publications, and Member Relations**. I would like to present some insight into each of these areas during the last two years.

The Education Committee has been very active. A major focus of its activity is to find ways of bringing education products to you in a cost-effective manner. They have evaluated many products from several vendors, and have entered into a Memorandum of Agreement (MOA) with several of them. As a result, EMS members may purchase these items at a discount. Also, they have set up short courses and seminars in several geographical areas. A seminar on Innovation was presented in Ottawa, Canada. Other seminars are being prepared for the benefit of the membership.

In 2002, we had our most successful conference (IEMC-2002) at St Johns College, Cambridge, England. This conference was successful in all aspects including the largest atten-

dance; largest number of conference papers, with approximately an even split between academia and industry in attendance. Our next conference (IEMC-2003) will be in Albany, NY, November 2-4. Next year, we will hold our conference (IEMC-2004) in Singapore. It will be co-sponsored by the EMS, EMS Singapore Chapter, and the IEE. It will be held 18-21 October 2004.

The Awards and Recognition Area is responsible for all awards within the Society. We have several awards, which include Engineering Manager of the Year, Transactions Publication Award, and Chapter of the Year Award. Recently, two new awards have been approved - Educator of the Year and the Innovator of the Year Award. The Fellows Committee also falls under the area of Awards and Recognition. It has been very successful in submitting candidates to the IEEE Fellows Committee, and to have them elected Fellows by the IEEE BOD.

The Society has three publications, which each member receives. They are the *EMS Newsletter*, *Transactions on Engineering Management*, and the *Engineering Management Review*. A new Newsletter Editor, Terrance Malkinson, was appointed in 2002. Improvements have been made with regard to content, format, and appearance. More improvements are scheduled for 2004. The *Transactions on Engineering Management* is a very well recognized publication in academia and industry. It is one of the most often cited publications in the literature. Dr. George Farris was appointed as the new Editor starting with the first issue in 2003. The *Engineering Management Review* is undergoing several changes. Dr. Wade Shaw, Florida Institute of Technology, will become the new Editor beginning with the first issue in 2004. In addition, we are looking at ways

In This Issue ...

President's Corner	1
From Our Readers	2
The International Engineering Management Conference 2004	3
IEEE - EMS Transactions Publication Award - 2002	4
Oh, No! Not Another Meeting	5
Measures of a Person - Part 3	7
Changing Attitudes	8
Chapter News	9
Your EMS Executive Officers	10
Constitution and By-law Amendments	14
Power System Fundamentals	18
Book Review	19
Board of Governors	20

continued on page 2

to reduce publication costs associated with the EMR without sacrificing quality.

The major focus of Member Relations for the past two years has been associated with EMS chapters. Several new chapters have been formed. Many chapters are very active, however, some are not. We have been working hard to promote increased activities within all chapters. One of the activities we have initiated for the past two years is to hold

a Chapter Chairs Workshop collocated with our annual conference. The first one was held at St. Johns College (IEMC-2002), Cambridge, England. This year's workshop will be held with IEMC-2003 in Albany, NY. Plans are being made to hold another one with IEMC-2004 in Singapore.

In closing, I would like to thank the entire EMS Board of Governors for their support. In 2004, the new Presi-

dent is Dr. Irving Engelson, who has served so ably as my Executive Vice President. The leadership of the Society, in my opinion, is in good hands.

It indeed has been an honor, pleasure, and privilege to serve you.

Sincerely,

Dennis Bodson

As newsletter editor and on behalf of the membership of the Engineering Management Society I would like to express our appreciation to Dennis Bodson for his exemplary service as President of the Society over the past two years.

From Our Readers

*From: Tony Smith
Slate-Blue Consulting Limited*

This relates to your column *Conference Call for Engineering Managers* where you solicit comments on hierarchical versus flat organizational structures. I offer a slightly oblique view below. I worked for many years in a fairly closed industry sector, sheltered from the full pressures of the commercial marketplace, where the effects are magnified.

Hierarchical and *Flat* can be viewed as the ends of a spectrum of management widths from narrow to wide. The best position on this continuum depends on the business characteristics, but a flatter structure offers great benefits in today's more fluid environment. However, the "ambiguity"; that makes possible the flexibility does not sit well with many; even if they like the idea, they either distrust the execution or simply shy from perceived risk. Only leadership can both force the direction and engender the necessary trust. But "management" too often means simple "administration" in practice, leadership being weak or absent. So, if you have the right quality of managers and of personnel, a flatter structure is natural. If not, a more hierarchical structure emerges to protect the interests and sensibilities of all concerned - wrongly, in my view.

Now, the resistance to change of a hierarchy means that it is always difficult to go flatter. So, with time, the structure

narrows, regardless of whether it is beneficial. In the same way that time's arrow moves in one direction, the move from vigor to decadence seems irresistible if there is not strong leadership to counter it. That frustrated go-getters get up and go only exacerbates the problem. Even successful start-ups, initially as flat as can be, are highly vulnerable during the rapid growth phase. The "bozo"; principle applies, whereby the effect of a single bozo is soon multiplied as he recruits in his own image.

Thus, leadership is the key. Without it, theory and grand ideas will not make any real impact and the structure will be essentially hierarchical without regard to the real needs. With leadership, the right structure is possible. Finally, I would say that hierarchy *does* value experience, but too much of it is yesterday's outdated experience.

From: Carol A. Long

Dear Editor:

You wanted feedback about the idea of the newsletter going electronic. I will be sad to see the newsletter not arrive on my doorstep. I enjoy the benefits of this old "push technology", as I don't have to remember to go to a website and find the news. An email reminder does help here. I see many really good reasons to go web enabled - cost being paramount. However, I tend to read the newsletter while travelling: on a plane, in a cab, waiting for a connection. Paper really

lends itself to that. If you go to an electronic form, please make sure the page prints in both Letter and A4 paper sizes. I will probably want to print it and carry it here I go.

EurIng Carol A Long PGD Tech (Open) CEng MBCS MIEEE MIITT Project Coach and Quality Assurance Specialist ... Making Projects Work Chartered Information Systems Practitioner, Chartered Engineer, Certified Trainer

Call for Applications: Associate Editor

EMS supports the *IEEE Transactions on Mobile Computing* with an associate editor. We are looking for nominations for this position and you are invited to apply. This associate editor handles the technical review of research papers submitted in the area of mobile and wireless communications that have a significant management emphasis. The appointment is made by the Editor-in-Chief based on the resume submitted through the EMS. If you are interested in applying please contact Prof. Wade H. Shaw at w.shaw@ieee.org.

Wade H. Shaw, Ph.D., P.E.
Florida Institute of Technology
Melbourne, Florida 32901
Ph: +1.321.674.7173
Fax: +1.321.674.7270

The International Engineering Management Conference 2004

18 - 21 October 2004

Pan Pacific Hotel, Singapore

Website: www.iemc2004.org

Contact: iemc2004@inmeet.com.sg

Call for Papers: IEMC-2004

The International Engineering Management Conference welcomes all papers related to the broad theme of engineering management, which includes topics such as the management of R&D, projects, production and operation, quality and reliability. It is also customary for the conference to highlight a theme of topical interest globally and locally to the hosting country or region. In this vein, the IEMC 2004 conference theme is inspired by recent trends and events around the globe that have impacted countries and companies, large and small.

Global trends in economic and technological development seem to point to a collision between development for human needs and maintaining adequate resources for future use. On the one hand the inexorable economic development in populous countries has put increasing strain on natural resources. On the other, rapid technological development on many fronts promise better living standard

with more efficient means of production, communication and transportation. Are the recent global developments sustainable? This is the question that the conference hopes to address. History has shown that engineers have innovated and entrepreneurs have applied new technologies to successfully meet human demands. This conference provides a forum for exchange of ideas on how and why development can be sustainable.

From the perspectives of individual companies and economies, sustainable development could take on rather different meanings. The rapid rise and fall of many recent dot.com companies highlights a basic tenet of a company's long-term well-being. That is, companies with no sustainable competitive advantage will lose out in competition. How may innovation and entrepreneurship help to sustain the development of a company or an economy in the current and emerging states of technology and the global economy? This is another question that should attract insightful papers and discussions.

IEMC 2004 invites papers and proposals for special sessions, tutorials/workshops on but not limited to the following topics:

- Design for Environment
- R&D Management
- Environmental Management Systems
- Product Innovation
- Clean/Smart Energy Deployment
- International Project Management
- Green Business Opportunities
- Supply Chain Management
- Environmentally-Sound Technologies
- Corporate Entrepreneurship
- Sustainable Growth
- Technological Competence
- Sustainable Competitive Advantage
- Sustaining Engineering Careers

We invite papers for presentation at the conference. All interested persons should submit one page abstracts (500 – 750 words) through the conference website. Each submission will be reviewed for technical merit and content. Papers accepted for presentation will appear in the Conference Proceedings provided at least one author registers for the conference.

IEEE - EMS Transactions Publication Award - 2002

The EMS Transactions Publication Award is the highest honor bestowed upon an author by the Society. The basis for judging is a paper that meets the objectives of the *IEEE Transactions on Engineering Management*, as defined by; subject matter, timeliness, objectivity, originality, contribution to the field, and general interest; and as determined by the Transactions Publications Award Committee chaired by the Transactions Publication Editor-in-Chief.

Recognition consists of a cash award of \$1,000.00, and a plaque. In the case of joint authorship the award will be shared and each author will receive a plaque. Presentation of the award takes place annually, at an IEEE Engineering Management Society Conference, or other meeting authorized by the Society.

Please contact the EMS Awards Chairman to offer your nominations, recommendations, and services for next years competition.

Congratulations to the recipients of this year's award.

Mark P. Rice, Richard Leifer, and Gina Colarelli O'Connor. Commercializing Discontinuous Innovations: Bridging the Gap from Discontinuous Innovation Project to Operations. *IEEE Transactions on Engineering Management*. 49(4): 330-340, 2002.

Abstract

Since 1995, a multidisciplinary team of researchers has deployed case study methodology to follow the progress of 12 discontinuous innovation projects in ten large R&D-intensive firms. The study has illuminated the challenges of managing the surprisingly difficult transition from R&D project to an operating substantial "readiness gap" existed between the project teams and the receiving business units. The challenges have been captured in the form of ten critical questions that must be addressed

before a project can be successfully transitioned. Based on an analysis of transition practices, the authors identify seven propositions for improving the effectiveness of transition management suggesting the potential usefulness of the following managerial approaches: 1) conducting a transition readiness assessment; 2) assembling a transition team; 3) establishing an oversight board; 4) developing a transition plan; 5) providing transition funding from corporate sources; 6) laying the groundwork for a big market; and 7) engaging senior management champions.

Congratulations to the following two Honorable Mentions.

Donna Mangun and Deborah L. Thurston. Incorporating Component Reuse, Remanufacture and Recycle into Product Portfolio Design. *IEEE Transactions on Engineering Management*. 49(4): 479-490, 2002

Abstract

Product take-back laws have been enacted in the Netherlands, and the European Commission is expected to follow suit. The legislation mandates that manufacturers bear the economic burden of collection and disposal of products at the end of their useful lives. Reuse or remanufacturing of some components might be more cost-effective than disposal and provide an opportunity for recovery of their economic value. However, manufacturers have not traditionally engaged in the long-range planning over several product lifecycles that cost-effective reuse or remanufacturing requires. This paper develops a model for incorporating long-range planning for component reuse in product design. The model employs a product portfolio approach based on market segmentation, rather than a single product. The model is embedded in a decision tool that aids in determining when a product should be taken back, and which components should be reused, recycled, or disposed. A case study of a line of per-

sonal computers (PCs) demonstrates an implementation of the model. It also shows that if product take-back is mandated, it is in the PC manufacturer's best interest to shift from selling a product to essentially selling a service by controlling when the product is taken back and, thus, effectively creating a leasing program. The portfolio approach creates opportunities for the design engineer to distribute the cost, reliability, and environmental impacts of component reuse, remanufacture, and recycling in such a way that the end results is higher customer satisfaction than designing one product for all customer groups.

Thomas Y. Choi, Zhaohui Wu, Lisa Ellram and, Balaji R. Koka. Supplier-Supplier Relationships and Their Implications for Buyer-Supplier Relationships. *IEEE Transactions on Engineering Management*. 49(2): 119-130, 2002.

Abstract

Many researchers have investigated the dynamics of buyer-supplier relationships and have, in general, posited the importance of long-term, cooperative relationships. However, the relationship between suppliers (i.e., supplier-supplier relationship) and its potential impact on the buyer-supplier relationship have not yet been considered. This research addresses a void in the literature, especially given that many buyers now work with a smaller supplier base and deliberately try to foster certain types of supplier-supplier relationships. Building on the existing buyer-supplier and strategic alliance literature, we propose three archetypes of *supplier-supplier* relationship. This research further illustrates the strategic role of the buying firm in structuring these relationships and explores the managerial implications of different types of supplier-supplier relationships from the perspectives of both the buying firm and its suppliers.

Oh, No! Not Another Meeting!

Ron Blicq
LSM IEEE

Many people complain that the business meetings they attend are unproductive and take up too much of their time. It's commonly thought that the chairperson has the major responsibility for conducting efficient meetings. But that's only partly true: the participants can also do much to streamline the meetings they attend. Consequently this article describes how you, as either chairperson or participant, can play a more effective role and so attend meetings less reluctantly.

The Chairperson's Role

A chairperson has two primary functions: to set the scene for the meeting, and to run the meeting. Setting the scene means telling everyone who is to attend exactly where and when the meeting will be held, the topics to be addressed, and any special role each person is to play. This is done by sending out an agenda at least 48 hours before the meeting.

Preparing the Agenda

Many meeting managers divide the agenda into two parts, with a heading before each:

1. Action (or Decision) Items
2. Discussion Items

This ensures that the more urgent items are dealt with early in the meeting. (If they appear too far down in the agenda, and the meeting goes on for too long, there may not be enough time to deal with them adequately.)

Managing the Meeting

To run an efficient meeting, as chairperson you can adopt several strategies:

- Start the meeting on time, even though not everyone has arrived. Participants tend to be more punctual

when they have learned that the meeting manager is always punctual.

- Spend the first five minutes establishing meeting guidelines. Ask the meeting members to identify meeting "rules" they would like the members to adhere to, then show them prominently so that members can see them and "live by them."
- Follow the agenda in sequence, deviating only if a meeting member who has an important input to a particular topic informs you that he or she has to arrive late or leave early.
- Introduce each topic in turn, summarize the background, and then invite the topic specialist to speak.
- Run the meeting, but avoid "railroading" it. Remember that the outcome should be a consensus of the participants' views, not a reflection of your own. Promote discussion by encouraging input from those who tend to be less outspoken, and by discouraging those who tend to talk too much or get off track (to cope with the latter, refer them to the guidelines established earlier).
- Similarly, be on the watch out for individuals who introduce side issues that divert the focus of the discussion, and for others who hold private discussions at one end of the table. Quietly insist that each person who wishes to say something first catches your eye and is invited to speak (this is particularly important when diverse opinions emerge and emotions are high).
- Sense when a topic has been discussed sufficiently, and then sum up what you believe to be the main outcome and ask for a decision or vote.
- If a topic goes on endlessly, and it appears that no resolution will be reached, suggest deferring the topic

to the next meeting and forming a subcommittee to evaluate it before then.

The Meeting Participants' Role

Each meeting member has three responsibilities: to prepare well (if he or she has to make a presentation); to be an effective presenter; and to be an efficient participant.

Preparing to Speak

Start preparing for the meeting as soon as the agenda arrives. (Never leave it until 20 or 30 minutes before the meeting: something is bound to interfere!) Divide your information into two components:

1. Need to Know

These are the facts your listeners must have if they are to make an intelligent decision about your presentation or proposal.

2. Nice to Know

These are details they only *may* want to hear; information they do not need to reach a decision.

Plan to present *only* the **Need to Know** information. (Keep the **Nice to Know** details in reserve, ready in case you are questioned about them.)

Next, from the **Need to Know** information, identify two or three particularly important items and plan to present them first, in no more than one or two sentences.

Make brief speaking notes by writing the key points—just one or two words for each—on a small card or sheet of paper.

Preparing Visual Aids

Use visual aids to support your presentation, to make it more effective. Follow these guidelines:

- Keep your drawings and tables short and simple so they can be read quickly and easily. Avoid the fast-track temptation to copy a figure from a report or proposal: it will almost always be too complex for presentation on a screen.
- Use dark, bold lines and keep the lettering to a minimum. If the meeting will be informal, don't be afraid to hand-draw a chart or table (reserve time-consuming works of art for visitors or clients you need to impress).
- Highlight significant details so viewers' eyes will be drawn to them.
- If you have extensive notes to hand out, prepare them early and ask the chairperson to send them out with the agenda so that participants can read them *before* they come to the meeting.

Making Your Presentation

Remember the “Three Tells” approach that experienced speakers use when making an oral presentation:

Tell No. 1:

Open with the key points you want to make: no more than two or three sentences.

Tell No. 2:

Continue with all the **Need to Know** information: details your listeners *must have* to fully understand your presentation and reach a decision.

Tell No. 3:

Close by re-stating the primary outcome or result, or the action that needs to be taken.

Placing the most important information at the start of your presentation will help capture the meeting participants' attention. For example, when Melanie Shopka reported her investigation into how work-at-home strategies had been implemented at other companies, she started her presentation like this:

My investigation of work-at-home strategies among local companies shows that on aver-

age their experiments have been only sixty percent successful. Organizations experiencing the most success are engaged primarily in engineering and marketing. Those experiencing less success are involved mostly in manufacturing and customer service.

This was Melanie's **Main Message**. She then continued with the **Need to Know** information, such as where she had gleaned her information, where the most significant differences were apparent, and the implications that her findings had for the meeting participants' company. And then she stopped and invited questions. For her answers, she drew on the **Nice to Know** details she had prepared earlier.

Adopting this three-stage approach can be one of the most spectacular ways to speed up the meetings you attend.

Here are six more suggestions:

1. Speak to the group as a whole, but address your initial remarks to the chairperson. Then look around the table and address different members directly as you make each point.
2. Keep your visual aids out of sight until you need them, so they do not distract listeners' attention. Then remove each as soon as its presence is no longer a topic of discussion.
3. Never read aloud the words on a slide or chart: pause briefly to let your audience do their own reading.
4. Avoid handing out several pages of paper for the meeting members to look over—it wastes meeting time and distracts the members' attention from what you are saying.
5. Lean toward your audience when you have a particularly important point to make: use body language to emphasize your words.
6. Try to avoid being defensive if a meeting member seems to be addressing you and your ideas aggressively. Particularly avoid being drawn into a personal argument between yourself and a meeting member, which will embarrass other participants and destroy the effectiveness of your presentation. Show you recognize the question is valid

and answer it pleasantly and cooperatively.

Taking Part as a Listener

If a meeting is peopled by participants who know their role, business is completed quickly and everyone leaves feeling their attendance has been worthwhile. Here are some additional tips for improving meeting efficiency:

- Arrive on time. If you do happen to be late, do not expect the chairperson to interrupt the current discussion to “fill you in” on what has transpired so far.
- *Listen* to the discussion and other people's presentations, offering ideas and opinions only when you have something useful—something borne of valid experience—to say. Be recognized as a valued contributor, not as a “specialist on every topic.”
- Catch the chairperson's eye and gain his or her approval before offering an opinion. And keep your opinion focused and brief: start with a **Main Message** and continue with the **Need to Know** information, and then stop.
- Avoid letting your neighbor draw you into a private whispered conversation while the meeting is in progress (this can be very distracting to other meeting members). In other words, hold only one meeting at a time.

The “Secretary's” Role

It's much more common for a chairperson to ask a meeting participant to record the minutes of an office meeting than to bring in a secretary or clerk to do it. If you are appointed to be meeting secretary, you do not have to record *everything* that is said. (Remember that you still have to contribute to the meeting, as a participant.) Much of the time you will need to record mainly the outcome of the discussion on each topic (often you can draw this from the chairperson's remarks as he or she sums up). The outcomes are most likely to be

- conclusions reached,
- decisions made,
- actions taken (or to be taken), and (sometimes)
- the exact wording of a policy statement.

To record your notes, I suggest you draw a dividing line down the middle of several sheets of 8.5 x 11 in. paper (or use a spiral-bound secretary's notebook). In the left-hand column, record important points and outcomes as briefly as possible, using initials for members' names and shorthand expressions for long words or expressions (e.g. write *fm sub-c* for "form a sub-committee"). Keep the right-hand column for expanding your notes into the outcomes you will present in the final minutes.

Write the minutes *within 24 hours* after the meeting, while the events are still fresh in your mind and your shorthand notes still make sense.

Some people like to record their notes on a laptop computer as the meeting progresses. If you choose to do this, check that the other meeting participants approve (some people may find the sound of fingers clicking on the keys to be disturbing).

To Sum Up...

I hope these suggestions will help you and your "co-meeting members" experience shorter, more efficient, and more productive meetings

Editor's note:

Ron Blicq is a regular contributor to the EMS Newsletter. His articles describe the techniques he has used over

the past 40 years to help technical professionals write well. He has been a technical editor in the aviation and electronics industries, a teacher of technical communication for engineering undergraduates, and now is a consultant to engineering firms in the US and Canada. He is also the co-author of several textbooks, including the IEEE Press book *Writing Reports to Get Results*. He was Education Chair for the IEEE Professional Communication Society from 1974 to 1995, is the author of six textbooks on technical and business communication, and also is the co-author—with Lisa Moretto—of the eight-course online Technical Communication program the Engineering Management Society is recommending to its members. r.blicq@ieee.org

Measures of a Person - Part 3

This is the third and last in a series of articles investigating the various psychological tests that yield "measures" of some human trait. The reasons for studying personality are many: We want to know more about ourselves, our group members, our approaches to different personality types, and how to predict the actions or responses of others when we have a good estimate of their personality.

Paul A. Willis
EMS Board of Governors

In 1983, Howard Gardner's seminal book *Frames of Mind: The Theory of Multiple Intelligences* appeared. In his book, he defined "Intelligence" and seven "IQs": Linguistic, Logico-Mathematical, Musical, Spatial, Bodily Kinesthetic, Intrapersonal, and Interpersonal. He defined **Intelligence** as: "A biophysiological potential to process information that can be activated in a cultural setting to solve problems or create products that are of value in a culture". The nature of the causal relation between any IQ and social privilege has not been settled. A person's strength in one area of performance does not predict any comparable strengths in other areas.

In each Intelligence, Gardner defined the "area" of the Intelligence and measures of the quantity of that Intelligence. He covered the history of our "IQ" tests, showing that we have concentrated on the **Logico-Mathe-**

matical that yielded the Stanford-Binet-Wechsler tests we have all taken. His tests of **Musical Intelligence** go beyond the Seashore Musical Talent tests to address knowledge as well as talent.

He also proposed other Intelligences but was unable to define a scale or quantitative test for these. Among these were Naturalist, Existential, and Moral Intelligences. He subsumed Spiritual under Existential and was unable to include activity areas such as Business or Managerial or Medical. Our high dependence on the Wechsler to classify and rank people is criticized by Gardner who refers us to Steven Jay Gould's "The Mismeasure of Man" which contains a devastating evaluation of this dependence.

Some examples: People who are capable in multiple languages clearly have a higher **Linguistic Intelligence** than single language people do. People who have perfect pitch, hear songs in their head, can reproduce heard

melodies have higher Musical Intelligence because they have purer pitch, rhythm, and timbre.

High Spatial Intelligence has the ability to perceive the visual world accurately, to perform mental transformations and modifications upon one's initial perceptions, and to be able to recreate aspects of one's visual experience even in the absence of relevant physical stimuli. Consider you are back in Freshman Drafting Class where you have to draw a partial cutaway drawing of a lathe's holding mechanism. If you start making imaginary "slices" of the lathe, orthogonal to your line of vision, then you are employing one form of Spatial Intelligence. The Psychologist L.L.Thurstone saw Spatial ability as one of his seven factors of Intellect, and Richard Arnheim, in his "Visual Thinking" claims imagery is our prime mode of intelligence. Many scientists have strong Spatial Visualization capability: Einstein, Kekule,

Watson and Crick, Bertrand Russell, Buckminster Fuller. The physical sciences make greater use of Spatial Intelligence than do biological or social sciences.

Bodily-Kinesthetic Intelligence measure is the ability to use one’s body in highly differentiated and skilled ways, for expressive as well as goal-directed purposes and the capacity to work with objects skillfully. Ballet dancers, figure skaters, gymnasts, pole-vaulters, high jumpers, high rise steelworkers are some examples.

Intrapersonal Intelligence is a measure of the internal aspects of a per-

son’s access to one’s own feeling life, including one’s Authentic Self. **Interpersonal Intelligence** measures the ability to notice and make distinctions among other individuals, in particular among their moods, temperaments, motivations, and retentions. These two Personal Intelligences differ in different cultures. Sanctions surrounding pathologies in either PI tend to be far stronger than those that greet disorders of the other Intelligences.

While decisions to employ (or not) one’s Musical or Spatial Intelligence is not heavily charged, the pressures to employ one’s PIs are acute. Symbolization is the essence of the Personal

Intelligences’ (PI) Emerging Sense of Self. A well-developed sense of Self is often the highest accomplishment of a person.

Note that David Reisman, in his “Lonely Crowd”, cannot escape his bias that the “Inner Directed” person is superior to the much more prevalent “Other Directed” person. I recommend Gardner’s books to you; they represent a clear view of the physiological psychology explanation of the nature of the brain and its role in our thinking processes.

Changing Attitudes

By Peter LaChance
CEO, Quintessence

Great managers instill a culture of self-motivation and they master the ability to develop positive success attitudes within their team members. How do they accomplish this? As engineers, we tend to think of attitudes and behaviors in fuzzy terms – matters to be handled by the HR Department. Actually, logical thinkers like engineering managers are quite well equipped to handle such matters directly. The first thing that you need to do is to dispel in your own mind the notion that matters of human behavior require “soft skills.” Behavioral science has been around for too long for you to get away with that excuse. Let’s look at attitudes logically, as we do with technical problems.

Habits

Attitudes are *habits*! They are “knee jerk reactions” people have to an event, person or thing. If you think of attitudes as *habits of thought* you can conclude: to change any attitude requires a change in our thinking process. Here is where the interesting part comes: 88% of the average person’s “knee jerk” thought process takes place below the conscious level, in the subconscious mind. So if you want to fix the effect (change an improper atti-

tude), then first you need to treat the cause!

Cause and Effect

Have you ever visited a doctor for an illness, but all they did was to treat the symptom instead of the disease? It happens a lot in the medical profession and it happens far too frequently when we deal with people’s attitudes. Merely telling someone that she must change her attitude about someone or something is akin to the doctor telling you to put a cream on a rash while he remains unconcerned about what caused you to break out. Just as the rash will return the next time you meet up with a certain irritant, so too will a nasty attitude return when your employee meets up with the sort of things that trigger it.

Rooting out the Cause

- A = (V+B)
- Where, $0.88 \cdot (V+B) < C$
- A = Attitudes
- V = Values
- B = Beliefs
- C = Conscious level

From the above equation, you can see that attitudes are composed of *Values and Beliefs*. If you wish to change an attitude, you need to discover the personal values and beliefs underlying

that attitude. Since 88% of our values and beliefs are locked securely inside our subconscious mind, we have to bring these to the forefront – into the conscious mind. For example, a man’s demeaning attitude toward women often reflects a belief that women are not as intelligent as men are.

Because we are working largely with the subconscious, it may take days or weeks for an employee to figure out which values and beliefs relate to the attitude you wish them to change. With proper coaching on your part, most people can figure this out. Then comes the hard work of changing their value and belief system: Sometimes this can be accomplished quickly, using logical arguments based upon a clear set of facts. More often, changing a person’s values and beliefs takes a concerted goal-setting effort coupled with the repeated use of self-affirmations, for 4 to 8 weeks. It also requires frequent encouragement and support from you, their manager. It’s work, but it beats firing them!

Peter LaChance Peter@TQC.com is president of Quintessence, a leadership development company affiliated with Resource Associates Corp. He holds bachelor and masters engineering degrees and he earned an MBA from RPI. Peter has been an IEEE member for 22 years. For contact information see: www.Talent2Triumph.com.

Chapter News

Washington Chapter

Doug Holly

“Why are some of my co-workers nuts? It can’t be me!” was the title of the Washington EMS meeting held September 10 at the University of Maryland. This session continued our series to help engineers grow their leadership and business skills. The presenter, Bill Helm, an engaging and informative speaker, is a Sr. Manager at Acterna. He illustrated his presentation with many colorful examples from his experience leading high technology projects and managing engineers. The main premise of the topic is that people have different social styles and relate in different ways. If we understand the basic styles we can interact and communicate more effectively. The presentation helped attendees assess their styles and they were given a one page tool to help them practice their newly acquired skills. The presentation was very well received by the standing room only crowd which requested information on future topics.

Benelux Chapter

Robert Bierwolf

A Report on EMS Benelux Member Meeting, Oct 6th 2003, at TU Eindhoven - Life Cycle Engineering. With the assistance of the IEEE Student Branch Eindhoven, a meeting was organized on Oct 6th in cooperation with “KIVI-Bedrijfskunde”. KIVI is the professional body and organization for graduates of the technical universities in the Netherlands, and “KIVI-Bedrijfskunde” is the Engineering Management Society of KIVI.

Two speakers were arranged. First of all Prof. Dr. Tetsuo Tomiyama of Delft University of Technology from the faculty of Mechanical Engineering and Marine Technology made a presentation on Life Cycle Engineering, introducing a life cycle oriented manufacturing paradigm that goes beyond life cycle analyses and recycling.

The second speaker Dr. Ir. Menno Nagel, recently joined Delft University and presented some initial research findings regarding the environmental load from various types of equipment used in the telecommunication industries. For that purpose Dr. Nagel defined a new measure, EPPI, and shared his findings with the audience.

For the remainder of 2003 the following events are planned:

Visit to KPN’s national operation and control center in Hilversum in November.

“Innovation & Start-ups”, December 8th in cooperation with IEEE Computer Society Benelux at the TU Delft.

Note that IEEE Benelux nowadays has its own website: www.ieee.nl and www.ieee.be.

You can reach us through: robert.bierwolf@ieee.org or bart.r.meijer@ieee.org

Los Angeles Chapter

Paul Willis

Recent meetings of the Engineering Management/Education/Professional Communication Chapter of the IEEE Los Angeles Council have included:

October 8: Dr Tony Karrer, CEO of TechEmpower will speak on Software Development Aids. Co-sponsored with the ACM.

October 27: Dr. Mohammed Beshir speaking on the Department of Water and Power Wind Farm Development. Co-Sponsored with LACES

November 17: Dr. Anthony Laviano, speaking on Nano-Technology. Co-Sponsored with LACES

Chapter of the Year

The Ottawa EMS Chapter is the recipient of the “Outstanding Chapter of the Year”. Along with this distinc-

tion is a check for \$500. A statement by John Grefford, P.Eng. Chair IEEE EMS Ottawa Chapter follows:

“It is a deep honour for our Ottawa EMS Chapter to be recognized as the Outstanding EMS Chapter of the Year. I wish to mention that the work that Charles Rubenstein has done in putting together a Chapter Chair workshop for Region 7 in Toronto in Spring 2001 has steered me in the right direction to serve our members in Ottawa. Charles really provides motivation to derive a purpose as Chapter Chair to help out our fellow EMS members / identify potential members and encourage past members to come out to events and renew by offering a “value add”. A big take away from the workshop was that the networking opportunities offered by putting together regular (at the very least 4 times per year) events for our members to participate in is the real and valuable contribution we can make at the local Chapter level. I have asked members to come forward with suggestions to identify speakers and have used their suggestions and at times leveraged corporate or outside support for events.

The reality is that the past few years have been particularly difficult for our members in the Ottawa area with many layoffs. Our members “In Transition” really appreciated the opportunity to network at these events. Overall, events provide an opportunity to meet a lot of interesting members and I find it rewarding to be able to contribute in a small way to the IEEE family. We have gone out of our way to use opportunities offered by other professional Societies/organisations and put together events. Specific events this past year that were extremely well received by our members was the day long seminar conducted by Gus Gaynor on “What it Takes to be an Innovator” and the focus series of sessions on Intellectual Properties issues in fall 2003.

We recommend never to rest on one's laurel. Planning is well underway for 2004 for sessions aimed to help all our members: project management, R&D and Business issues on

finance, communication, marketing, HR and many others. It is really a lot of fun. Special invitation to any EMS member to drop a line or show up at our next event."

Your EMS Executive Officers - 2004

*Dr. Irving Engelson, FIEEE
President: Engineering
Management Society*

Having been elected 2004 Engineering Management Society President, I want to thank my colleagues for the confidence and trust they have shown in me, and the honor they bestowed on me. Ultimately dedication and performance are the elements by which I will be judged as your president.

It is traditional for the President to address the membership via a column in our Newsletter. So I will have other opportunities to share with you my ideas and accomplishments, on an ongoing basis. But for now, I want to cover some of the generic functions of an IEEE society president, and leave most of the EMS specific activities for future articles.

I have a long history of participation in IEEE activities, and involvement with many IEEE societies and their governing bodies. Therefore, my experience in society-specific activities will help me to better carry out my new EMS responsibilities. I also have a pretty good idea how my predecessors operated, which should help with continuity of our operations.

As President I will have to be the Society's principal thinker, planner, negotiator, guide and publicist. But I cannot be expected to do it all by myself. Nor do I claim superior expertise in all these areas. Fortunately, I will be working with a talented group of EMS officers who are dedicated to their specific portfolios of activities. Together, and with the involvement of the other members of our Board of Governors, we should be able to serve

our society membership and our profession.



While effective society management will be my primary volunteer activity – and among the most demanding – there are also many other responsibilities. For example, I will represent our society as a voting member of the Technical Activities Board (TAB). TAB is the governance body for policy making and guidance of the technical activities of the IEEE. Thus, my position will be one of influence, which demands the exercise of judgment, and experience in debating and expressing my views and voting on many important matters.

This responsibility may not stop with my position on TAB. It may also involve active participation on TAB and IEEE committees where EMS views are critical. As your Society President, my ability to participate in the wide variety of activities will be limited only by my interest and time constraints. All that may impact our members will be part of my interest base, and I am ready to devote the time that will be needed to fulfil my obligations.

As EMS President I will have to act as a two-way communicator. On the one hand I will have to articulate the needs of EMS and its membership to other IEEE forums, and on the other hand, I will have to assure that issues of importance are communicated back to you, our members. Thus my management skills will be sorely tried. But I feel ready for this challenge.

Engineering management includes the management of technical people, in addition to technical systems. Therefore, one of my challenges will be to promote the notion that EMS should be of interest to all IEEE members, because we are all managing or being managed. The society field of interest should have universal IEEE appeal. My knowledge of the other IEEE societies should help me build relationships that will benefit our members. Member needs will be the primary focus of my presidency. I look forward to these challenges, and will welcome your active support and contributions to the EMS.

Editors Notes:

Dr. Irving Engelson has more than twenty years of continuous EMS membership, and currently serves as the Society's Executive Vice President. He previously served as EMS Vice President for Recognition and External relations; Chairman, of the EMS Awards and Fellows Committee, and Member of the EMS Constitution Committee. He also served on numerous other IEEE committees, and was a member of the IEEE Board of Directors. He is currently a member of the IEEE Strategic Planning Committee, and is Chairman of the IEEE Regional Activities Board (RAB) Strategic Planning Committee. He served as 2000-2001 IEEE Region-1 Director.

Tariq S. Durrani
Executive Vice-President

I am enormously honored by the Board of Governors of the IEEE Engineering Management Society to have elected me as the incoming Executive Vice-President. I would strive to do my best to serve the Board of Governors and the Membership at large. The Society stands at a crossroad where on the one hand opportunities beckon, on the other, prudence is called for.

Opportunities in the shape of:

- Member services that advance members' interests in support of their professional concerns such as the provision of successful education and training products, international conferences (witness the International Engineering Management Conference IEMC-2002, held in Cambridge, England, last year that attracted participants from over 30 countries, in a ratio of 60:40 academics to practitioners, and the forthcoming IEMC-2003 in Albany, and IEMC-2004 in Singapore);
- Improved outreach to practicing engineers, managers and others through the establishment of Special Interest Groups that focus on current management issues and practices and provide a platform for the exchange of ideas and experiences;
- Inter-society cooperation within Division VI through synergistic actions, collaborative events and joint activities;
- Strengthening global linkages and affiliation for the Society to enhance its role worldwide.

Prudence through:

- More effective services from IEEE Headquarters and improvement in the infrastructure to overcome the current concern with deficit budgeting and unpalatable taxing of societies.
- Use of SMART processes (Specific, Measurable, Achievable, Re-

alistic and Time bound) in our deliberations.

I would be delighted to hear the views of members on how the Society could serve them better.

Editors Note:

Tariq S. Durrani is Deputy Principal, University of Strathclyde, Glasgow, Scotland UK. At his university he is responsible for Entrepreneurship, Continuing Professional Development and Lifelong Learning, and Staff Development. At the IEEE he is a member of the Education Activities Board, the Publications Products and Services Board, the Awards Board, and Vice Chair Region 8 Technical Activities. He is a Fellow of the IEEE, IEE, Royal Academy of Engineering and the Royal Society of Edinburgh.

Joe Bellefeuille
Vice-President: Conferences

As your newly re-elected vice-president of conferences let me take a minute to talk about my aspirations for conferences and where I, with your help, plan to take them over the next year. We are in the process of wrapping up the details of International Engineering Management Conference (IEMC) 2003 held this year in Albany, NY. IEMC 2004 is sited in Singapore next year and IEMC 2005 will be held in St. Johns, Newfoundland. We are working to site IEMC 2006 in Regions 8 or 9 in the fall of 2006 and IEMC 2007 in Regions 1 – 7 in the fall of 2007.

In addition to the continuous improvement of the IEMC brand of conferences, it is my plan to expand our involvement with other IEEE societies by co-sponsoring conferences with them as well as running management tracks in some of their conferences. Currently, we are working to co-sponsor a conference in 2005 with the Professional Communications Society.

On a personal front, you may recognize my name as I have written articles for our newsletter about total quality management, personal development and networking, and leadership development over the years. As a member of the Excom, I will continue to work to help our president and other vice

presidents develop as a cross-functional team and to bring you educational products, publications, and conferences that work hard to fulfill your needs while growing our membership. This will help drive down the unit costs of our offerings to you.

If you have ideas about how to improve our current conferences or widen our influence and value to you, please contact me at j.h.bellefeuille@ieee.org.

Charles Rubenstein
Vice-President: Member Relations

Charles Rubenstein as Vice-President: member relations has responsibility over programs that promote student, affiliate and regular membership (including senior member elevations and GOLD member projects), create and empower EMS Chapters and Student Branch Chapters, promote EMS topics in the IEEE professional activities arena (IEEE-USA PACE) and coordinate intersociety relations between IEEE societies, as well as with the IEE MPN.

Plans for 2004 include:

1. Student Member Programs

Evaluating the success of the 2003 EMS Student Membership Award program which provided five (5) complimentary EMS Student Memberships to each of the ten IEEE Regions for use as Student Member awards. The program was administered by the Regional Student activities Committees and is hoped that it will increase awareness among students in undergraduate and graduate programs. EMS is also assisting, as needed, in the establishment of EMS Student Branch Chapters at the Colorado School of Mines and at Dartmouth College.

2. Membership Development, Chapters and Training their Leadership

The key to Society membership development is in the care of existing Chapters and the development of new Chapters. Although EMS has increased EMS awareness among regional leaders by provid-

ing presentations at Region meetings, IEEE members 'see' the EMS mainly when there are EMS topics at Section or Chapter meetings. On a somewhat lesser level, this awareness occurs when we pay attention to the needs of GOLD members and elevate senior members and fellows.

EMS Chapter Coordinator Beth Zimet and her regional coordinators, Margaretha Eriksson (Region 8) and Jaime Jaen (Region 9), try to coordinate the information EMS has on the leadership in our Chapters, their projects and program plans, and their meetings. Working with the VP-Member Relations, these coordinators assist in the creation of new Chapters and identifying individuals from Sections with a critical number of EMS members that should have a Chapter.

For the past three years we have conducted EMS Region Chapter Chair Workshops where Chapter Chairs are given training in best serving their members, their Section and Society, and the IEEE. The 2004 EMS Region 10 Chapter Chair Workshop is being planned to precede the IEMC2004 in Singapore in October 2004. Although all Chapter Chairs are invited to these Workshops, special funding is secured for Chapters in the host Region. The concept here is to increase the awareness of EMS and its programs at the local leadership level. This has had a tangential effect in that several attendees have become candidates for the EMS Board of Governors.

3. EMS and Professional Activities (PACE)

EMS has long supported the aims and goals of increasing the soft skills capabilities of IEEE members through presentations and programs administered by the IEEE-USA at its seminars and workshops. EMS also has a Chapter level PACE Project Award and sends Board representatives to the annual IEEE-USA Training Workshop.

4. Intersociety Membership Relations

EMS has had informal discussions with several IEEE Society Board Committees for the purpose of evaluating appropriate joint membership activities and possible collocation of seminars and small conferences during existing larger Society Conferences. EMS has begun working with the IEE MPN to encourage joint programs at the local level between EMS Chapters and IEE Branches. Joint programs and activity coordination is being discussed between the IEE New England Branch and the EMS Boston (CNEC) Chapter that are hoped will become a model for future cooperation between the two organizations at the local level.

Gerard H. (Gus) Gaynor Vice-President: Publications

EMS offers its members and other subscribers three publications. The *IEEE Transactions on Engineering Management* provides quality papers based on research on the many issues related to engineering and technology management. The *IEEE Engineering Management Review* reprints from other publications articles of significant interest to our members and subscribers. *IEEE Engineering Management*, the EMS newsletter, keeps our members abreast of Society activities, offers editorial comment, allows for member feedback, and provides important news about our chapters.

George F. Farris of Rutgers University became Editor-in-Chief of the *IEEE Transactions on Engineering Management* in 2003 and works diligently to bring the publication to you on time and with content that meets the requirements of a diverse group of people. He is working with IEEE staff to bring Manuscript Central, an electronic means for processing all papers in a timely manner, on stream and is making excellent progress.

Dave Wells, the Editor-in-Chief of the *IEEE Engineering Management Review* has asked the EMS Board to find a new editor. Dave has had this posi-

tion for about eight years and has really brought this publication to its current standard that is rated very highly amongst its readers. We're sorry to see Dave leave but he deserves a break for the time, effort, and dedication he has provided over these many years. In a recent EMS survey 80 percent of our members read the Review and over 75 percent are highly- or mostly satisfied when considering content, quality, breadth of topics, and relevance to their professional needs.

In 2003 the EMS Board appointed Terrance Malkinson as the Editor of the EMS newsletter. Terry has taken full command of the newsletter and we are confident that he will put his own signature on the newsletter.

All of our editors try to publish material that enhances the competencies of engineering and technology managers. They try to bring you the latest and most challenging thought pieces. Please keep in mind that our editors are volunteers who dedicate their free time and effort in bringing these publications to you in a timely manner. Please take the time to contact them on your thoughts and needs about our publications. Your voices are important as we try to more closely meet the needs of our members and subscribers. George Farris can be reached at garris@andromeda.rutgers.edu, Dave Wells at d.wells@iee.org, and Terrance Malkinson at t.Malkinson@iee.org. Also send your comments to me as Vice President of EMS publication - g.gaynor@iee.org.

John Barrett Vice-President: Education

During my term of office I plan to invigorate our IEEE Engineering Management Society to become the provider within IEEE of professional management skill training and access to knowledge information on the management art to all members of IEEE. We need to focus our efforts to meet the needs of cutting edge technology managers and leaders. We need to create an EMS member value-add perspective that becomes a

key success factor we use to drive our projects and judge their success.

Specific activities I want to pursue are:

- Continue to nurture the 2 education initiatives with ETA and MSI eLearning which provide site based seminars and eLearning based training courses.
- Leverage the current EMS education initiative to build EMS membership by delivering content in the form of training opportunities and also with the ETA workshops acting as a local chapter galvanizing activity and revenue generator
- Grow the EMS eLearning program and develop its income potential and reach out transnationally with top quality management development programs.
- Work to improve our ability to add value to our members. Currently we do not seem to be in touch and our membership is declining.
- Work to get our EMS Society to operate in a fiscally self-consistent manner.
- Continue to participate in the Finance Committee development of business processes to provide project driven budgeting and tracking of results to plans by each of our VP groups.
- Seek to develop a more participative cross-functional working team spirit within the EMS BoG. Every member of the board should be ACTIVELY involved in the work we select to do. Too often we hear a

lot of comments about the work we are doing and want to do and then people do not get on the job when they leave the BoG meeting.

- Improve the tools and work processes we use to communicate and make decisions. Specifically develop the web tools to communicate with our members and develop online conversations for our work using the web and the Virtual Community tools Dave has been championing.
- Apply tools to create a dynamic real time exchange of information and best practices through a redesigned EMS Web site and participation in the IEEE EMS Virtual community

*Joel Snyder
Vice-President: Recognition and External Relations*

The greatest honors are when one is recognized by their peers for jobs well done. Recognition of achievements is not only good management, it is good public relations and a good way to boost moral and interest.

Recognition and External Relations is an activity of the Engineering Management Society that is seldom thought about. But it should be part of everyone's thinking as the powerful reward and enhancement tool that it is.

As the incoming 2004 Vice President for Recognition and External Relations I am taking this opportunity to tell you about some of my ideas and to enlist your help.

I take the job of finding honorees very seriously. I intend to beat the

bushes for nominations for awards. Although I have traveled for the IEEE extensively it is you, our members and practitioners, who are the best source of nominations of people who should be honored for their contributions to our profession. Look around and consider who among your colleagues and friends has done something worthy of recognition. Then nominate that person for an award. It will make their day infinitely brighter and let you bask in the thought that you have done the right thing.

When I first saw the list of award categories for recognition of management excellence I was surprised at the shortness of the list. We need to actively develop new awards and ways to recognize excellence. I want to establish at least one new award category or type each year. Help me! We all, you and I, need to look at our existing list of awards and recognitions and be creative. What shall we honor and how shall it be honored? You are the best judge of relevance and how best to honor those who are worthy.

Finally, we have always had a weak public relations effort. I hope to correct that. I will shout our story. We need to tell everyone around us about what we do, why it is important and vital, and about those we honor for their accomplishments.

I am anxious to hear from you with recommendations for awardees and for ideas about new awards and ways to honor our best. Email works and you can always reach me at j.snyder@ieee.org

The IEEE EMS Constitution and By-law Amendments

The IEEE has recently updated and streamlined its governance documents. Following that lead, the EMS governance documents were reviewed and also found to be in need of updating and streamlining. For example, some parts of the bylaws were judged to be more appropriate to be moved to the Policies or Procedures, and other parts were updated as needed. As a result, the EMS Board of Governors (BoG) and its Executive Committee approved a number of changes. The BoG approved changes to the EMS Constitution and Bylaws are presented below. The modified documents are intended to take effect by 2004, and will replace the current set. The full text of the current documents can be found on the Society web site."

Changes to the EMS Constitution

Additions are underlined;
~~Deletions have strikethrough;~~

(103) Article III. Membership

(103.2) Section 2.

Membership in the Society shall also be open to affiliates members based on their membership in other societies that have been recognized for affiliate purposes as provided by the Society Bylaws and applicable IEEE rules and regulations.

Affiliates may join the Society and participate in the Society activities as provided by the IEEE Bylaws and applicable IEEE rules and regulations, and any additional limitations imposed by the Society Bylaws

Section 3:

Affiliates may participate in the Society activities as provided by the IEEE Bylaws and applicable IEEE rule and regulations and any additional limitations imposed by the Society Bylaws

(104) Article IV. Financial Support

(104.3) Section 3.

The Society may raise revenues by

other means, such as advertising, shows, requests for contributions, and charges for sending out notices to non-Society members, provided such means are consistent with applicable IEEE rules and regulations and do not encroach on revenue fields previously established by other ~~Groups, IEEE Societies, or Sections~~. Any new revenue means not explicitly covered by IEEE rules and regulations must be approved by the Executive Director of the IEEE before being adopted by the Society.

(105) Article V. Administration

(105.1) Section 1.

The Society shall be managed by an Administrative Committee known as the Board of Governors. The membership of the Board of Governors shall consist of ~~24~~ 18 governors elected from and by the membership of the Society, and non-elected governors who are ex-officio with vote as specified in the Society Bylaws. There may also be members of the Board of Governors who are ex-officio without vote. less than two-thirds of the voting members of the Board of Governors shall be elected members.

(105.2) Section 2.

Within the Society, special interest groups may be formed as provided in the IEEE or Technical Activities Bylaws Manual in effect on the date of formation of each sub-group.

(105.3) Section 3.

The terms of the ~~24~~ elected members of the Board of Governors shall be three years, eight with one third of these governors to be elected each year. The terms of office shall nominally coincide with the calendar year.

(105.4) Section 4.

The current Board of Governors shall elect from its membership the following officers of the Society for the following year: a President, and at least two Vice Presidents as specified by the Society Bylaws. The term of office for each shall be one year and shall coincide with the

calendar year. The current President with the advice and consent of the incoming President shall appoint a Secretary and a Treasurer for the following year, each for a term of one year. The Secretary and Treasurer need not be members of the Board of Governors at the time of their appointment. A single individual may serve as Secretary-Treasurer at the discretion of the President. The President may not be elected for more than two consecutive terms.

(105.6) Section 6.

The duties and responsibilities of the Society officers shall be as defined hereunder and in the applicable IEEE and Society Bylaws, and as delineated by the Board of Governors.

(105.7) Section 7.

The President, under direction of the Board of Governors, shall have general supervision of the affairs of the Society. The President shall preside at meetings of the Board of Governors and at general meetings of the Society, and have such other powers and perform such other duties as may be provided in the Society Bylaws and Policies and Procedures, ~~or~~ and as may be determined by vote of the Society's Board of Governors. If the President is absent or incapacitated, a Vice President, as specified in the Society Bylaws, shall perform the President's duties.

(105.8) Section 8.

The President, who is a member of the IEEE Technical Activities Board, when notified of a meeting of said board, shall attend such meeting or shall ~~insure~~ ensure representation of the Society at such meeting by an alternate, normally the Executive Vice President. If an alternate cannot be found, the President shall present the views of the Society by a letter of proxy.

(105.9) Section 9.

The Board of Governors may establish standing ~~or~~ and ad hoc committees as prescribed in the Bylaws. ~~including functional committees (such~~

as Awards, Chapters, Membership, and Nomination) and Technical Committees. Technical Committees may be established to develop specific areas of the field of interest. All appointments to committees and similar posts will be for a term of one year or until successors are appointed or the committee is dissolved.

(106) Article VI. Nomination and Election of Board of Governors

(106.2) Section 2.

~~The Election process of the 24 members-at-large of the Board of Governors shall be as specified prescribed in the Society Bylaws.~~

(106.3) Section 3.

Within-term vacancies on the Board of Governors shall be filled by appointments for the unexpired terms by the President with the consent of the Board of Governors, as specified in the Bylaws.

(107) Article VII. Meetings

(107.1) Section 1.

~~The Society may hold meetings, conferences, symposia, or conventions either alone or in cooperation with other IEEE organizational units entities, or other technical organizations, subject to IEEE policies and procedures. The Society shall sponsor technical conferences periodically. They may be held during any IEEE conference, during some other IEEE meeting, as a separate conference, or in conjunction with a meeting of another organization.~~

(107.4) Section 4.

Eleven voting members of the Board of Governors shall constitute a quorum, provided that a majority of the voting members in attendance were of which at least six are elected by the membership elected members, shall constitute a quorum. All governors, including ex-officio governors with

vote as specified in the Society Bylaws, shall have an equal vote.

(107.5) Section 5.

~~In the presence of a quorum, a majority vote of those voting members of the Board of Governors attending a meeting shall be necessary for the conduct of its business of the Board of Governors shall be conducted except as otherwise provided in this Constitution or the Bylaws.~~

(107.6) Section 6.

Business of the Board of Governors may be handled by correspondence or other means where, in the opinion of the President, matters requiring action can be adequately handled in that manner. A majority vote of the voting members of the Board of Governors is necessary for approval of actions handled in that manner, unless otherwise provided in this Constitution or the Bylaws. Verbal decisions are to be promptly confirmed in writing.

(109) Article IX. Bylaws

(109.1) Section 1.

Bylaws shall be established for the purpose of governing the operations and administration of the Society.

(110) Article IX. Amendments

(110.1) Section 1.

Amendments to this Constitution may be initiated by petition submitted by 25 voting members of the Society or by ten members of the Board of Governors. Such petition being submitted first to the Board of Governors, then to the IEEE in accordance with IEEE specifications, and as specified in the Society Bylaws. Technical Activities Board, and to the Board of Directors of the IEEE for approval. Amendments of a purely administrative nature may be approved by the TAB Chair. After such approvals, the proposed amendment shall be published in the appropriate Society publications, or otherwise publicized by di-

rect mailing to the membership, with notice that it goes into effect unless ten per cent of the Society members object within 90 days. If such objections are received, a copy of the proposed amendment shall be mailed with a ballot to all members of the Society at least 90 days before the date appointed for return of the ballots, and the ballots shall carry a statement of the time limit for their return to IEEE Headquarters. When a mail vote of the entire Society membership is made necessary, approval of the amendment by at least two-thirds of the ballots legally cast shall be necessary for its enactment.

(110.2) Section 2.

Suitable Society Bylaws and amendments thereto may be adopted by a two-thirds vote of the Board of Governors present in meeting assembled, provided that notice of the proposed Society Bylaw or amendment has been sent to each member of the Board of Governors at least ten days prior to such a meeting; or a Society Bylaw or amendment may be adopted by a two-thirds mail vote of the members of the Board of Governors provided a 30-day period is provided for such responses. In either event, the proposed Society Bylaw or amendment shall be published in the an appropriate Society publications following action by the Board of Governors. No Society Bylaw or amendment shall take effect until it has been published, and the IEEE rules regarding Society Bylaws have been complied with. a copy has been filed with the Secretary of the Technical Activities Board, and it has been approved by the Executive Director of the IEEE.

(110.3) Section 3.

All amendments to the Constitution or Society Bylaws shall become effective immediately after all requirements of (110.1) Article IX, Section 1 or (110.2) Article X, Section 2, have been met, unless a later date has been specified.

Changes to EMS Bylaws

Additions are underlined;

~~Deletions have strikethrough;~~

201. INTRODUCTION:

These Bylaws provide detailed guidance for the supervision and management of the Society in accordance with the Society Constitution. Amendments to these Bylaws may be made as specified by means of the procedures described in (110.2) Article X Section 2 , of the Society Constitution.

202. MEMBERSHIP:

There shall be voting and non-voting members of the Society, however only one grade of Society membership, member, available to all IEEE members and to EMS affiliates. For certain positions, where specifically stated, a specific IEEE member grade may be required.

202.1 Honorary and Life Members:

202.1.1 Honorary Members

Such membership exempt of the payment of the annual society fee; This honor shall be awarded based on the recommendation in writing of the Society Awards and Fellows Committee, the endorsement of the Society Board of Governors, and the approval of the IEEE Division VI Executive Director of the IEEE. Such recommendations shall be in writing. Honorary Life Members are exempt of the payment of the annual society fee.

202.1.2 Life Members

Society dues shall be waived for those Society members who are Life Members of the IEEE, who meet the IEEE Bylaw requirements for society life membership.

202.2 Affiliates:

Affiliation may be based on membership in other societies that have been recognized for affiliate purposes by specific action of the Board of Governors. A list of approved Societies will be maintained by the Secretary of the

IEEE Technical Activities Board. Further, Society affiliates members may join in accordance with any other provisions that may be incorporated in the IEEE Bylaws, concerning professionals and others who have an interest in the society activities but do not want full IEEE membership. A Society affiliate member cannot serve as an officer in elective office in the Society or in a Chapter or vote for candidates for these offices, but may An affiliate member can serve in any appointed office position in the Society or in a Chapter of the Society.

A Society affiliate member is entitled to receive notices of all meetings sent to Society members, to receive copies of publications of the Society, to attend and participate in any function of the Society by payment of IEEE member charges, and to receive any award conferred by the Society. A Society affiliate member may not receive any IEEE benefits that are derived solely through IEEE membership. except as approved by the Executive Committee of the IEEE.

202.3 Students Members:

IEEE Student Members may join the Society at a reduced annual fee. An exception reduction from the normal annual fee shall be made for students, as prescribed by the IEEE bylaws 409.1.

Students are non-voting members of the Society and as such cannot serve as an officer or vote for candidates for office, but may serve in any appointed position in the Society or in a Chapter of the Society. Students are entitled to receive notices of all meetings sent to Society members, to receive copies of publications of the Society, to attend and participate in any function of the Society by payment of IEEE Student member charges, and to receive any award conferred by the Society.

203. BOARD OF GOVERNORS:

, of the Constitution provides that t The Administrative Committee

known as the Board of Governors shall consist of 24 elected members-at-large with vote, eight one-third of whom shall ~~members to~~ be elected each year for three-year terms as specified in the Constitution, plus ex-officio members as specified in these Bylaws.

~~, provides that a~~ A quorum shall be eleven voting members, the majority of which at least six shall be elected members, with and that all voting members shall have having an equal vote. (Constitution: (105.1) Article V, Section 1 and (107.4) Article VII, Section 4)

203.1 Each retiring Society President shall be, for a period of three years following completion of their term of office, an ex-officio member of the Board of Governors with vote. if not elected a member of the Board of Governors.

203.2 The officers of the Society shall be the President, immediate past President, Executive Vice President, the Vice President Conferences, the Vice President Education, the Vice President Member Relations, the Vice President Publications, and the Vice President Recognition and External Relations.

203.3 If not an elected member of the Board of Governors, each elected officer shall be an ex-officio member with vote on the Board of Governors and Executive Committee. if not elected a member of the Board.

203.5 The Secretary and Treasurer or Secretary-Treasurer, if not elected member(s) of the Board of Governors, shall serve as ex-officio member(s) without vote on the Board of Governors and Executive Committee.

203.6 If not an elected a member of the Board of Governors, Honorary Life Members shall serve as Members Emeriti without vote.

203.7 Unless otherwise provided, a majority vote of the voting members attending a Board of Governors meeting shall be sufficient for the approval of actions. conduct of its business.

~~203.8. In order to ensure a continuously active committee, elected members of the Board of Governors who miss three consecutive meetings may be dropped from membership in the absence of extenuating circumstances.~~

In the absence of extenuating circumstances, elected members of the Board of Governors who miss two consecutive meetings of the Board may be removed from Board membership. Notwithstanding anything in these Bylaws to the contrary, an affirmative vote of two-thirds of the votes of the members of the Board of Governors present at the time of the vote, provided a quorum is present, shall be required for removal. Vacancies thus or otherwise created shall be filled by appointments for the unexpired terms by the President with the consent and confirmed by majority vote of the Board of Governors.

203.9 Roberts Rules of Order (Latest Revision Revised) shall govern the conduct of Board of Governors meetings on all matters not otherwise specified in these Bylaws or the Constitution.

203.10 An Executive Committee, chaired by the President, is concerned with the day-to-day affairs of the Society between Board of Governors meetings. Particular duties are tracking of finances, development of the agenda for the Board of Governors meetings, review of the operations of the Committees, and strategic planning. In addition to the President, the Executive Committee members shall be the immediate Past President, the Executive Vice President, the Vice President Conferences, the Vice President Education, the Vice President Member Relations, the Vice President Publications, the Vice President Recognition and External Relations, the Secretary, and the Treasurer.

203.11 The President, with approval by the Board of Governors, may appoint ~~ex-officio~~ up to three members without vote to the Board. Their appointments shall expire when the purpose for which they were appointed ceases to exist or upon expiration of

the term of office of the President who appointed them, whichever occurs first.

205.ELECTION OF OFFICERS:

~~205.1 Following the election of the incoming Board of Governors, but no later than September 1st, The Chair of the Nominating Committee shall submit to the voting members of the Society Board of Governors, not later than September 1 nor three weeks prior to the election date, President the proposed slate of candidates nominations for President, Executive Vice President, and the five Vice Presidents for the ensuing term. The Vice Presidents shall be the Vice President Conferences, the Vice President Education, the Vice President Member Relations, the Vice President Publications, and the Vice President Recognition and External Relations. The Board of Governors shall elect the officers by mail ballot or in a meeting of the current Board assembled. The Society Secretary shall certify the results of the election prior to October 31.~~

205.8 The Vice President Conferences shall be responsible for the development, coordination and oversight of all Society conference activities including the supervision of the conference committees of conferences sponsored by the Society, oversight of policy relations with conferences in which the Society has an interest, and obtaining suitable ~~marketing~~ sites for future annual conferences.

205.9 The Vice President Education shall be responsible for the development, coordination and supervision of Society affairs related to training and education, ~~shall supervise the activities of the Engineering Management Research Advisors Committee;~~ represent the Society's interests with respect to the IEEE Press, the engineering management activities of ABET, the IEEE Educational Activities Board and IEEE-USA Careers Conferences; develop short courses; the development

of the engineering content of the fundamental skills inventory; and supervise all other activities undertaken to develop or enhance individual or institutional capabilities in the field of engineering management.

205.10 The Vice President Member Relations shall be responsible for the development, coordination and supervision of Society activities related to the development of Society membership, and shall supervise the Chapters, student activities and membership committees, and shall maintain Society relations with IEEE-USA PACE and similar membership outreach to IEEE Regional committees.

205.12 The Vice President Recognition and External Relations shall be responsible for the development, coordination and supervision of Society activities related to member, Society and field of interest recognition, and for relations with IEEE-USA Technology Committees and EMS affiliate organizations. Society activities include the Awards Committee, ~~the~~ and Fellows Committee, the Public Relations Committee, external relations, the Technology Policy Council representatives, and representatives or liaisons with affiliated organizations.

206. SUBGROUPS:

Sub-groups are voluntary associations of a significant portion of the total Society membership such as Chapters and technical sub-groups. Affinity Groups

206.1 Chapters
Chapters are composed of society members sub-groups organized within Sections or Councils on a geographical basis. ~~This subject is fully treated in the IEEE Bylaws, in the IEEE Groups and Societies Section of the Technical Activities Manual, and in the Sections Manual.~~ The chair of the Chapters Committee is the Board of Governors' contact with the Chapters. (The subject of chapters is fully treated in the IEEE Bylaws, in the IEEE Societies Section of the Technical Activities Manual, and in the Sections Manual)

206.2 Technical Sub-Groups

A technical sub-group may be organized to cover a specified portion of the field of interest of the Society. Each technical sub-group shall be governed by a technical committee. Sub-groups may organize sessions at a Society Symposium or Technical Conference and may also organize separate specialized symposia. Sub-groups may organize special issues of the TRANSACTIONS or a special section in an Issue. Any service for sub-group members, beyond those provided all

Society members, must be paid for by the sub-group members. If this takes the form of a special sub-group assessment, its form and amount must be endorsed by the Board of Governors and approved by the Executive Director of the IEEE, as specified in IEEE policies.

207. PUBLICATIONS:

The Society shall sponsor such publications as are recommended by the Publications Committee and approved by the Board of Governors. The President, in consultation with the VP Publications, with the advice and

consent of the Board of Governors, shall appoint the editor for each publication.

207.1 Term of Office:

An editor may serve indefinitely, subject to mutual agreement with the President. Any compensation for an editor will be set by the President, in consultation with the VP Publications, with the advice and consent of the Board of Governors.

208. SOCIETY FUNDS:

208.5 Society funds shall be raised and expended in accordance with a Budget which is to be prepared annually by the Finance Committee in accordance with TAB Finance Committee guidelines. General policy guidance for the Finance Committee relative to fees, specific activity funding and balance will be provided in the Society Policies.

by the Board of Governors at the Annual Meeting. After approval by the Board of Governors, the Budget will not require further approval if it is within the guidelines of TAB and the Board of Governors, and acceptable by each standing committee chair and Vice President in their

cognizant areas; any departures or disagreements will be submitted to the Society Executive Committee Officers for resolution.

210. TECHNICAL COMMITTEES:

210.2 Operation: The operation of each technical committee shall be in accordance with its charter as stated in the policies and procedures sections of the Operations Manual the Manual for Operation of Technical Committees, or other Board of Governors rules.

211. STANDING COMMITTEES:

211.8 Society Meetings Committee The Chair of the Society Meetings Committee shall report to the Vice President Conferences.

211.12 Publications Committee: The Vice President Publications shall chair the Publications Committee. The Publications Committee is responsible for periodical publications, and the society Web based content. The functions of the Publications Committee shall be specified in the Society Policies.

Power System Fundamentals

*Presented by Bruce Wollenberg
University of Minnesota*

This CD-ROM tutorial is offered for those who are working in the electric power industry and would like an opportunity to learn or review some of the basics of power system engineering. The topics include three phase circuits, symmetrical components and sequence networks, power transformers, the per unit system and power flow, symmetrical and unsymmetrical faults, system protection, automatic generation control, and power system transient stability.

2001/CD-ROM/3 Hrs 30 Min

IEEE Member Price: \$250.00

List Price: \$300.00

Book Review

The Short Road to Great Presentations

Peter Reimold and Cheryl Reimold
IEEE Press and Wiley-Interscience,
2003

ISBN 0-471-28136-0

Reviewed by Terrance Malkinson

Many managers and engineers distinguish themselves with their presentation abilities. Presentations often fail because the presenter failed to look at the presentation from the point-of-view of the receivers of the message. An effective presentation is one that successfully transfers your message to achieve a specific goal. Presentation skills can be learned by anyone and are essential for career success in today's competitive global work environment. Effective presentation skills will definitely enhance your ability to become employed, maintain your employment and advance in your career. These skills will also help you in many other aspects of your life.

Cheryl and Peter Reimold provide in their book [The Short Road to Great Presentations](#) practical guidelines emerging from their twenty years of experience helping engineers, scientists, and business people develop communication skills. The Reimolds are training consultants who have helped Fortune 500 companies, government organizations, and individuals improve communication and people skills. They are frequent conference speakers on communication topics and have written more than 200 articles on communication and several books. Their syndicated monthly column, "The Language of Business," has appeared since 1980 and won numerous awards. For further information please visit their website: <http://www.allaboutcommunication.com/index.html>

The seven chapters comprising Part 1 of the book deal with the preparation of your presentation. To be successful the intended message and the interpretation of the message by the receiver must be the same. This requires analyzing and understanding your audience. Other topics covered in Part 1 include utilization of a simple and effective universal presentation template, developing an effective introduction, creating an understandable message, summarizing your presentation, preparing effective visuals, and preparing your speaking notes and audience handouts.

The ten chapters comprising Part 2 focus on the persuasive delivery – how do you develop that uninterrupted connection with your audience? Topics include; how to connect through attitude, body talk, voice, language, and eye contact with your audience. How to use your speaking notes and visuals effectively. Other critically important skills include how to handle questions from the audience and deal assertively and calmly with those unexpected surprises that often occur. This part concludes with tips and strategies on how to moderate a conference session keeping the session productive, lively but under control, and stimulating discussion through good questions.

Technology is providing presenters with wonderful tools to create and deliver presentations. The goal is to learn to use these new tools effectively without losing the message in the technology. Audiences are increasingly sophisticated and can easily spot a presenter hiding behind the presentation technology. In Part 3 Cheryl and Peter Reimold provide the reader with valuable tips and strategies on the intelligent and effective incorporation of visual and audio technology into your presentation. The cost and inconve-

nience of business travel is increasing. Web presentations and Web meetings can be employed to improve business tasks. The authors provide information on how to manage this communication technology effectively.

Five appendices provide examples, worksheets, and checklists that will help you in creating your presentation.

Regardless of what you do for your employer, for volunteer activities, or in many other aspects of your life you will at some point in time be called upon to make a presentation. Delivering a great presentation is easy to learn by following the practical principles elaborated by Cheryl and Peter Reimold. It is a skill that will pay you huge dividends. In this 342-page book you will have a one-stop resource that will eliminate the stress and anxiety associated with preparing and delivering a presentation.

About the Reviewer

Terrance J. Malkinson is an elected member of the Senate of the University of Calgary, and is editor of the newsletter of the IEEE Engineering Management Society, Associate Editor of IEEE Canadian Review and a member of the IEEE-USA Communications Committee. He is an author of over 200 publications. He was a Proposal Manager/Business Analyst/Documentation Specialist with GE Capital Information Technology Solutions Inc. providing professional support to the sales and technical functions throughout North America in the development of information technology proposals and solutions to meet customer requirements. Previous to this he was involved in the performance, teaching, and supervision of basic and applied biomedical research for over 25 years.

Board of Governors

Your Board serves the interests of the Society and promotes Excellence in Engineering Management. The EMS Board needs your input to help determine if the Society meets your needs. Please contact any Board member for additional information, for expressing opinions, or raising issues that need to be addressed by the Society.

Dennis Bodson, President
d.bodson@ieee.org

Irving Engelson, Executive VP
i.engelson@ieee.org

Joseph H. Bellefeuille, VP Conferences
j.h.bellefeuille@ieee.org

Gerard H. Gaynor, VP Publications
g.gaynor@ieee.org

Merrill W. Buckley, Jr., VP Recognition and External Affairs
m.buckley@ieee.org

Dave J. Kemp, VP Education
d.kemp@ieee.org

Charles P. Rubenstein, VP Member Relations
c.rubenstein@ieee.org

Vivian A. Carr, Treasurer
v.a.carr@ieee.org

Thomas H. Grim, Secretary
t.grim@ieee.org

Wade H. Shaw, Past President
wshaw@fit.edu

BOARD OF GOVERNORS-ELECTED: 2001-2003

John Barrett
johnbarrett@ieee.org

Robert B. Bishop, Jr.
r.bishop@ieee.org

Jaime Jaen
jaime.jaen@panama.mail.fco.gov.uk

David J. Kemp
d.kemp@ieee.org

Lois Peters
peterl@rpi.edu

William (Al) Wallace
wallaw@rpi.edu

Paul Willis
p.willis@ieee.org

2002-2004

Merrill W. Buckley, Jr.
m.buckley@ieee.org

Tarig S. Durrani
durrani@strath.ac.uk

Irving Engelson
i.engelson@ieee.org

Margaretha A. Eriksson
Margaretha.eriksson@mailbox.swipnet.se

Thomas H. Grim
t.grim@ieee.org

Charles Rubenstein
c.rubenstein@ieee.org

2003-2005

Joseph H. Bellefeuille
j.h.bellefeuille@ieee.org

Dennis Bodson
d.bodson@ieee.org

Vivian A. Carr
v.a.carr@ieee.org

Dundar F. Kocaoglu
kocaoglu@etm.pdx.edu

Sam Salem
s.salem@ieee.org

Joel Snyder
j.snyder@ieee.org

Beth K. Zimet
bzimet@mitre.org

Barbara Zirolli
barbara.zirolli@hp.com

BOARD OF GOVERNORS Ex-officio:

IEEE Engineering Management Review
Editor: David J. Wells

IEEE Engineering Management Society
Newsletter Editor: Terrance J. Malkinson

IEEE Transactions on Engineering
Management Editor: George Farris

IEEE Engineering Management Society
Web Editor: Dennis A. Bodson

Newsletter Deadlines

Issue	Deadlines
First Quarter	15 January
Second Quarter	1 April
Third Quarter	1 July
Fourth Quarter	1 October

Terrance J. Malkinson, Editor
<malkinst@telus.net>

Paul Doto, IEEE Newsletters
<p.doto@ieee.org>

Visit the
Engineering
Management
Society web site
[http://www.
ieee.org/ems](http://www.ieee.org/ems)

IEEE Engineering Management Society Newsletter (ISSN 1066-212X) is published quarterly by the Engineering Management Society of the IEEE, Inc. Headquarters address: 3 Park Avenue, 17th Floor, New York, NY 10016-5997. The cost is \$1.00 per member per year (included in Society fee) for each member of the Society. IEEE Customer Service: 1-800-678-IEEE (USA and Canada), 732-981-1393 (outside USA and Canada), FAX 732-981-0027.

© 2003 IEEE. Information contained in this newsletter may be copied with permission provided that copies are not made or distributed for direct commercial advantage, the title of the publication and its date appear on each copy, and 2 copies of your publication are sent to the Editor for reference purposes.

Printed in the U.S.A.

Periodicals postage paid at New York, NY and at additional mailing offices.

Postmaster:

Send Address changes to IEEE Engineering Management
Society Newsletter, IEEE, 445 Hoes Lane, Piscataway, NJ 08855.

