



Dennis Bodson,  
President EMS

## The President's Corner

by Dennis Bodson PE, President EMS

Dear Colleagues:

It is a pleasure to provide you with a status report of the Engineering Management Society (EMS), and to encourage you to retain your membership in the EMS. We continue to be the world's largest professional organization in the field of engineering and technology management with approximately 6500 members and 64 chapters. This year has indeed been a year of challenges, opportunities, and numerous successful events. As we approach the time for membership renewal, I am very aware of the demands on your time and financial resources. Therefore, I will summarize our activities for this year, and provide you with a glimpse of what will come next year.

### Financial

Financial resources continue to be a challenge in troubled economic times both for the IEEE and the EMS. The IEEE appears to have a firmer grip on finances. As a result, the IEEE infrastructure costs and their allocation to all IEEE Societies are decreasing. Our reserves have declined from \$641K in 1999 to \$421K at the end of 2002 and are forecast to decrease to \$342K at the end of calendar year 2003. We are estimating \$159 K for infrastructure charges in our 2003 budget.

### Publications

EMS publications continue to be recognized as outstanding products worldwide. The IEEE Transactions on Engineering Management has preeminent status. Dr. George Farris has assumed the duties as Editor-in-Chief of the Transactions during the 4<sup>th</sup> quarter

of 2002. The Engineering Management Review continues to do extremely well under the leadership of Dr. Dave Wells. Terrance Malkinson became the new EMS Newsletter Editor with the first issue of 2003. In addition to serving our members we have approximately 1000 non-member subscribers to the EMS publications

Mark P. Rice, Richard Leifer, and Gina Colarelli O'Connor's paper on "Commercializing Discontinuous Innovations: Bridging the Gap From Discontinuous Innovation Project to Operations" was selected by the Transactions' Department Editors for the Best Paper Award in 2002. Their paper was published in the November 2002 issue of the EMS Transactions on Engineering Management. The Department Editors found that this paper was especially appealing for the following reasons: (1) it addresses a very important but complex topic in engineering management, (2) it employs a careful multiple comparison case study methodology, and (3) it produces several practical findings, in the form of propositions, which have already influenced actual management behavior.

### Conferences

The International Engineering Management Conference (IEMC) for 2003 will be held in Albany, NY during the period November 2-4, 2003. To date, we have received approximately 180 abstracts, and look forward to a successful conference. In addition, we plan to hold a Region 1 Chapters Chair Workshop just prior to the conference. The purpose of the workshop is to provide an opportunity for the Chapter Chairs to receive and exchange very valuable information and then take the information back to their chapters and establish some action programs.

Our next conference, IEMC-2004, will be held in Singapore, and will be co-spon-

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sored both technically and financially by the EMS and IEE Management Professional Network. The IEE is a sister society of the IEEE located in the United Kingdom. The MPN is one of the networks within the IEE as the EMS is one of the Societies within the IEEE.

## Education

The EMS Education Committee has been very active in 2003. They have adopted a multi-program approach to provide the training and information you require as a technical manager in a time of challenging expectations. The programs are as follows:

### Seminars

We are delivering six seminars through Effective Training Associates Inc. (ETA). ([www.effectivetraining.com/](http://www.effectivetraining.com/)). These are instructor led workshops on topics such as Project Management, Leadership, Negotiation, Writing, Presentation and Communication skills specifically tailored for engineers and technology managers.

### Information / Knowledge Work Solutions

Our second thrust is to provide a window into best practices — working tools and practical reference information that are available to support you. Our first effort is with ProjectConnections, ([www.projectconnections.com/member/ems](http://www.projectconnections.com/member/ems)) a leading provider of web-delivered just-in-time knowledge on project and people management. This site provides practical easy-to-use information and work templates that assist in developing projects, running meetings, building effective team communications, and other essential business management skills. Many site resources are free to registered site members, including items such as manuscripts, presentations, and pointers to management sites and books. Registration is free! Our EMS and IEEE members get a Premium subscription at a 33% discount. Check out the site's resources at ([www.projectconnections.com/member/ems](http://www.projectconnections.com/member/ems)) to take advantage of the special IEEE EMS Premium offer.

### Web Learning

Recognizing that the web is a logical choice for meeting our key objectives of real time applicability and global accessibility we are initiating the IEEE

EMS eLearning program as our third education thrust with the following three initial offerings.

- **Communication Skills for Managers**  
Communication skills are vital for effective management. EMS is making available a suite of communications eLearning courses by RGI International ([www.rgilearning.com/ems](http://www.rgilearning.com/ems)) and MSI Learning ([www.msilearning.com/ems](http://www.msilearning.com/ems)).
- **RGI International**  
This eight course series of Web-based effective communication courses is designed specifically to help technical professionals prepare better e-mails, letters, reports, and proposals. Now you can learn communication skills at your own pace, on your own time, in the office or at home. To monitor your progress they provide an optional exam and course completion certificates. If you prefer, you can choose to have a writing consultant evaluate examples of your work. A special discount for the full Communication Series is available.
- **MSI Learning**  
MSI Learning offers six unique on-line instruction-led interactive workshops:
  - EMS Technology Project Management
  - Virtual Teams 1: Effective Project Communications and Control
  - Virtual Teams 2: Effective Project Communications and Control
  - Managing Multiple Projects
  - Rapid Project Development: Creating Agility and Balance in the Organization
  - E-Business Rapid Application Development (RAD)

## Recognition and Awards

Two members were recommended by the EMS Fellows Committee and **elected** by the IEEE Board of Directors for the Grade of **Fellow** effective January 1, 2003. They are **Dr. Stephen Edward Cross** for “The development and use of modern software engineering techniques in advanced systems,” and **Mr. Antonio**

**Jose Vincentelli** for “Technical leadership in the energy industry.”

The EMS BOG recently approved two new awards for **Engineering Management Educator of the Year** and **Innovation Management Excellence**. We are currently evaluating nominees and plan to make the first award this year. Your support in suggesting candidates for these awards would be appreciated.

## EMS Virtual Community

Virtual Communities are the latest information sharing and learning vehicles offered by IEEE. Each community consists of a group of individuals who have a shared purpose and a common interest. EMS has established the EMS Virtual Community (<http://www.ieee.comunities.org/ieeems>) for two purposes: to assist us in administrative activities and more importantly to foster a discussion of management topics addressing EMS member fields of interest. As a member of EMS you select the topics of interest. EMS invites you to be our Guest. View the EMS Virtual Community and if you like what you see please join and share your management interests with your EMS colleagues. The Virtual Community is another EMS membership benefit.

## Website

We are continuously trying to improve our website. An Ad Hoc Committee has been established to provide a proposal to the EMS Board of Governors for the future development of the site. Please make an opportunity to visit the site, and to provide us with feedback on what your thoughts and suggestions. The URL is <http://www.ewh.ieee.org/soc/ems/>.

The primary purpose of this letter is to emphasize and inform you of the things that we do in the EMS. The most important activity is to serve the needs of our members. I wish to thank you for your support in the past as a member of our Society, and I encourage you to continue your support of the EMS in the future.

Sincerely,  
Dennis Bodson  
President, EMS

## IEMC 2003 - Albany, New York - November 2-4, 2003.

by Joseph Bellefeuille  
Vice-President of Conferences

*“Entrepreneurs [and entrepreneurial managers] need to search purposefully for the sources of innovation, the changes and their symptoms that indicate opportunities for successful innovation.”*

**Peter Drucker**

Dr. Drucker believes that if you want to be a better entrepreneur you need to learn good management skills. To be a better manager you need to learn entrepreneurial skills. He continues by stating that innovation, “is the specific tool of entrepreneurs.” I would add, “and of entrepreneurial manager too.”

This year the *International Engineering Management Conference (IEMC)* offers an important opportunity to study and assess new directions in technology management and the strategic use of human resources to shape and enhance innovation. The title of IEMC 2003 is *Managing Technology Driven Organizations: “The Human Side of Innovation and Change.”* The topic of “the human side of innovation and change” is both timely and consistent with the objective of creating innovative, technology driven enterprises. IEMC 2003 offers a platform for sharing experiences, presenting new ideas and results, and reviewing developments by leading experts.

In addition to the usual stimulating variety of paper and poster sessions, we have developed a very interesting key speakers program. They are Rolf Smith, Managing Director of Virtual Thinking Expedition; Professor Ramon Aldag, Executive Director, Weinert Center for Entrepreneurship University of Wisconsin-Madison; Professor Andy Neely, Cranfield School of Management; Jose Mejia, Chief Procurement Officer at Lucent Technologies; and Jeff Wacker, a futurist and Chief Technology Officer at EDS Corporation.

In his presentation titled, *Different Thinking for Different Results*, (No these are not typo’s or are they? I guess you will have to register for the conference and attend to find out yourself.) Rolf Smith will introduce us to a range of creative thinking styles and ideas and show us how to have *different* ideas. Different results require different thinking. Rolf believes that to get different results, we must do things differently; to do things differently, we must think differently; to think differently, we must first think about the way we think.

Ray Aldag says, “Information technology provides remarkable promise for advancing management and decision-making. We must find creative ways to encourage individuals and groups to embrace that potential with acceptance, engagement, and passion.”

His talk titled, *To Boldly Go: Exploring Frontiers at the Human – Information Technology Interface*, will address several issues facing practitioners and researchers.

Andy Neely, in addition to holding the position of professor at Cranfield School of Management, is Associate Director of the Advance Institute for Management (AIM). He is a renowned expert in the field of performance measurement. He says, “Performance measurement is worth nothing unless it is acted upon - unless we move into the world of managing through measurement. [This is what] I believe we will see the academic and practitioner community focusing on as the field of performance measurement enters a new and more mature age.” Dr. Neely’s talk will focus on the integration of worlds academician and the practitioner and

## Tariq Durrani receives the Order of the British Empire

**Investiture at Buckingham Palace, London July 10, 2003**

Tariq Durrani, member of the EMS Board of Governors and EMS Executive Vice-President elect (2004-2006) received the OBE from His Royal Highness Prince Charles at an Investiture Ceremony held in Buckingham Palace, London on Thursday July 10, 2003.



The OBE (Order of the British Empire) is an honour bestowed by Her Majesty Queen Elizabeth for outstanding work and extraordinary service to the nation, and is seen as a highly prized accolade. The citation for Tariq’s OBE reads “for services to electronics research and higher education”.

Tariq Durrani was the General Chair, IEEE International Engineering Management Conference, held in Cambridge, England in August 2002. He is a member of the IEEE Publications Services and Products Board, the IEEE Education Activities Board, and the Editorial Board of IEEE Spectrum magazine. In his professional life, Tariq is Deputy Principal and Professor of Electronics at the University of Strathclyde, Glasgow Scotland UK.

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he will explain some of the efforts (current and future) of UK's AIM organization in this regard.

As Lucent Technologies' Chief Supply Officer and President of Supply Chain Networks organization, Jose Mejia oversees the activities of 7000 employees involved in new product introduction, strategic supplier alliances, customer relations management, and many functions in between. Jose will speak about the consolidation and transformation of his organization into the next generation supply chain organization and the leadership and human resource development challenges that that entails. He frequently says, "When you bring organizations together, you have to remove the snakes – those often overlooked cultural differences that impede progress."

Jeff Wacker will speak on "Agile Employees in the Agile Enterprise." His presentation will address the processes, culture, and technology that create and sustain an agile workforce. He considers an agile workforce as one that is intimately involved in initiating change as well as adapting to change. He has a saying, "People don't mind change, – they mind being changed."

In addition to this outstanding slate of key speakers, IEMC 2003 is proud to offer six pre-conference workshops:

- The Tao of Multidisciplinary Innovation Management, Jan Voute and Bart Meijer
- Tools for Creating a Successful Engineering Team Culture, by Douglas Holly
- Unleashing Creativity: Creating an Innovation Focus, by Leslie Martinich
- Building a Radical Innovation Hub for Engineering/Technical Firms, by Joanna Hyland
- Effective Leadership in Technology-Based Team Environments, by Dr. Hans J. Thamhain
- Human Issues in Project Management, by Ken Rifkin, Ph.D.

The format for these workshops is one-half day and will be offered on Sunday, November 2 at the conference venue. Log onto our website to register soon.

Your IEEE Engineering Management Society Board of Governors and Lois Peters, the conference general chair, invite you to join us at IEMC 2003. Dr. Peters can be reached at [peterl@rpi.edu](mailto:peterl@rpi.edu). The conference is being held in Albany, New York, November 2 – 4, 2003 and offers a wonderful opportunity to explore

how to cope with the human issues of innovation and change. With a setting in beautiful upstate New York, the capital region of the Empire State, you will not want to miss this conference. Bring the whole family and plan to tour and enjoy the autumn colors and other scenic attractions. Visit the conference website for travel, lodging, and sightseeing tips (<http://www.mgmt.rpi.edu/ieec/index.htm>).

Looking ahead, next year's conference will be held in Singapore during October 2004. Please check out the IEMC 2004 website link provided below. If you would like to help or have suggestions, contact Dr. H.K. Tang, General Chair, at [EHKTang@ntu.edu.sg](mailto:EHKTang@ntu.edu.sg).

Beyond next year, we have IEMC 2005 in the early planning stages, and it will be sited in historic St. John's, Newfoundland where you can experience the amenities of a sophisticated city while enjoying the warmth and safety of a small town. Stay tuned! At this point feel free to contact Charles Randell, [Charles.Randell@C-Core.CA](mailto:Charles.Randell@C-Core.CA), with suggestions and offers of help.

If you would like to comment on this article or explore the possibilities in sponsoring a conference, please contact me. [j.h.bellefeuille@ieee.org](mailto:j.h.bellefeuille@ieee.org)

*Join your colleagues and leaders from academia, government, and industry*

## **Managing Technology Driven Organizations: "The Human Side of Innovation and Change"**

**International Engineering Management Conference 2003**

**Albany New York, November 2-4, 2003**

IEMC-2003 offers you the opportunity to:

- Learn about the human issues related to innovation and change
- Find solutions to your problems and discover new opportunities
- Learn about emerging management issues
- Master new tools and techniques for investing in technology
- Identify research opportunities
- Share your experiences and knowledge with your colleagues

Conference Website

<http://www.mgmt.rpi.edu/ieec/index.htm>

# Are You Drowning in Email?

## Part 2: How to Use Email More Efficiently

by Ron Blicq  
Senior Life Member, IEEE

In the previous issue (Volume 53, #2, pages 9–10) of this Newsletter, I described how to write more effective email messages that encourage your readers to respond accurately and correctly. This time I will show you how to improve the efficiency of your email messaging, and also help others improve theirs. We will look at:

- avoiding random email access,
- replying selectively,
- replying coherently,
- sending single-topic messages,
- forwarding messages responsibly,
- summarizing a string of messages, and
- recognizing that email is not a confidential medium.

## Avoiding Random Email Access

Access your email at specified times rather than randomly. If you leave your server “live” while doing other tasks, it can be difficult to resist clicking onto your email almost immediately when you hear a voice say: “You have mail!” I suggest you establish up to three email access times each day; for example: 8:30 a.m., 11 a.m., and 3 p.m. By dedicating specific times you can avoid ending your workday feeling you have not achieved all you wanted to do and that you lost continuity because you were interrupted too often.

## Replying Selectively

When you receive a message that is addressed to several readers, click the “Reply All” button *only* when it is essential that everyone must read your reply. Suppose you receive this message from the chair of a 12-member committee:

I want to select a day for our next meeting and have identified three possible dates:

1. Monday March 16.
2. Tuesday March 24.
3. Thursday March 26.

Please let me know which date suits you best, and whether you would prefer a lunchtime or evening meeting.

You click the “Reply” button, type the following message, and then click “Send”:

I prefer a Tuesday or Thursday for our next meeting, preferably at lunchtime.

But 8 of the 12 committee members click “Reply All” and over the next two days you—and all the other committee members—receive 8 replies that you really don’t need to read. It also means that 88 messages went through the email system, when only 8 messages needed to be sent. When you consider that many other people in other organizations also are using this non-selective way to reply to multiple-reader messages, then it’s clear the email systems—and the personnel involved—are being heavily and unnecessarily overloaded. So *pause* before clicking the Reply All button and divide your readers into two groups:

1. Those who will use and act on the information.
2. Those who will neither use it nor act on it.

Send your information only to the group 1 readers.

## Replying Coherently

To reply coherently means providing sufficient information, in a logical sequence, so your reader will fully understand your message. In the previous example, one of the committee members (Dan) clicked Reply and wrote:

Tuesday evening.

Dan assumed the committee chair would link his reply with the others, not realizing that he is giving the chairperson extra work. His message may be buried among 30–40 messages that appear when the chairperson logs on to her email account, and its contents may not be immediately clear to her. Dan’s message compared unfavorably with your message (above), which provided all the essential details but remained concise.

## Sending Single-Topic Messages

If you need to write to the same person about several topics, and want the reader to act on or reply about each of them, send a *separate* message dealing with each topic. It may seem more efficient to list all the information and required actions in the one message, but doing so invites the reader to miss some of the topics. (Most readers scan the whole message when first accessing their email, but when replying to it later they may not remember there is more than one question to answer, particularly if the message is long and requires the reader to scroll down.) Conversely, if you receive a multiple-topic message, we suggest you print out a hard copy and use it to check that you have addressed all the points before you send your reply.

## Forwarding Messages Responsibly

Be very careful when forwarding another person’s message. If, for example, the message is simply informing you of a routine change of schedule, then it’s acceptable to forward it to people who need the same information without first obtaining the originator’s approval. However, if a message contains private information, or comments on the quality of the work done by a contractor or other people, then it would be inappropriate to forward it without first asking

for approval. Alternatively, forward the message, but first delete any information that is not relevant or is unsuitable for others' readers' eyes.

## Summarizing a String of Messages

Do you sometimes receive a message, which refers to a previous message, which in turn refers to a previous message, and so on? And then you have to scroll down through several screens to see what has been said before and by whom? The problem with strings of messages is that they take a lot of time to read as you scroll back and forth. The solution is for someone (maybe you?) to summarize the main information in the previous messages and to insert that in place of the "string." The result: one message with little or no scrolling down. If you feel some readers may still want to see the whole string of messages, you can insert your summary at the top and introduce it with a statement like: "I have summarized the previous discussion, as follows:"

## Coping with Lack of Confidentiality

Because we each have an ID and a password to access our email accounts, we tend to assume that email is a confidential medium. It is not, for two reasons:

1. Contrary to general belief, every message is stored somewhere in the

email system and can be retrieved by a computer specialist.

2. When you send an email to just one person, you have no guarantee that that person will not forward it to others.

I suggest you avoid inserting private or confidential information in *any* email message. Send it by regular mail, which will inhibit the reader from forwarding it.

## Consider Alternative Ways to Communicate Information

We tend to use email because it is fast and easy. Yet there are occasions when it can be more effective or more appropriate to use another means of communication.

If you have a difficult message to convey that may upset the recipient, consider either walking down the hall to speak personally to the person (or telephoning if the person is not in the same building). In both cases you can convey your message better—and also your feelings—by the tone of your voice and, for a face-to-face communication, by your body language. You also provide an opportunity for the listener to ask questions immediately and you can sense the tone of the response and deal with it.

If you need a paper trail (which is permanent documentation for contract or legal reasons), then either use

email or write a letter. Email is fine for a less formal situation or if speed of communication is essential. A letter is better if you are establishing criteria or guidelines between your company and someone in another company. Sometimes it's appropriate to send the message initially by email and then to follow it with a paper letter as a permanent document.

## For More Information...

These notes—and those in Part 1, which appeared in the previous Newsletter—provide some general guidelines to help you become a more effective and more efficient email communicator. To gain practice using these techniques, consider enrolling in the online courses approved by EMS. They are available at [www.rgilearning.com/ems](http://www.rgilearning.com/ems).

### 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," and the series of online courses EMS is recommending to its members. He can be reached at [r.blicq@ieee.org](mailto:r.blicq@ieee.org)*

## 2004 IEEE ANNUAL INTERNATIONAL ENGINEERING MANAGEMENT CONFERENCE

### Innovation and Entrepreneurship for Sustainable Development

<http://www.iemc2004.org>

18th - 21st October 2004  
Singapore

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# Are We Done Yet? Using Completion Criteria to Manage Technology Projects

by Cinda Voegtli  
Past-President IEEE Engineering  
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Imagine the following situation: You're on a hot project. Due dates are critical, and the push is on to get done with the detailed design phase. Your design documents and drawings exist, and as far as you're concerned, they're ready to be for a prototype fab. You're just about done! Or are you? According to the nearest manager, it's not "done" until the documents and drawings are there and have been reviewed by manufacturing; those items are updated post-review; they're officially under initial change control; they've been routed to all the right people; and purchasing has verified that your drawings have been accepted by the vendor. "Done" may have just moved out by a couple of weeks!

Here's where Completion Criteria come in. Completion criteria are a valuable project management tool. They define explicit goals that must be attained to call an element of a project, or the entire project, "done." They are a communication tool, a time-saver, and an important aspect of "quality management" on your project. The team needs to agree way up front on when a particular activity or phase is truly "done".

In the example situation above, obviously the latter is a very different definition of "complete" than the former. The first definition of "done" leaves lots to chance - for instance, the design may well have mistakes or manufacturing issues that could cause delays and headaches later. The latter definition uses a *qualitative* form of "completion criteria". The longer list of criteria are meant to ensure that all the right review steps get taken, problems are identified and fixed, the right people are involved in the review, and so forth.

Completion Criteria often include *quantitative* measures as well. For instance, a very typical "completion criteria" for a testing activity will specify:

- No category 1 bugs (for instance, failures that involve system crashes)
- No category 2 bugs (often "must-have" customer requirements) unless explicitly signed off by Manager X, Executive Y, etc.
- Less than X category 3 bugs (usually non-critical feature aspects)
- Less than Y category 4 bugs (minor user interface/ cosmetics issues etc)

The purpose of these criteria is to set very objective measures to ensure a product or system is not allowed out of test prematurely. If the testing in question is integration testing, which must be complete before we let the QA group have it for independent testing, then we want to make sure we don't hand them such a buggy system that they spend all their time having test cases fail and handing the system back to the software group to be fixed!

Or say we're doing the QA testing and the next step is to take the system/software to a beta customer. Beta at a customer typically implies that they're using it in their normal production environment or close to it - which means we had better be sure we ship them something that works well enough for their use. The bug category completion criteria above are very typical for "QA is done/ OK to ship to beta".

So how do you use Completion Criteria throughout your project?

**Completion of a project task:** In the above detailed design example, a team might have Completion Criteria for when the design review itself is done, and use a checklist of those items in the design review. Criteria might include:

- All issues raised in the review have been addressed, the resolution documented, and all drawings/docs updated.
- The customer service rep on the team has signed off that he believes the design is installable and supportable.
- The cost of the hardware design has been verified by the purchasing department and is within the range the project has said product cost must hold to.

**Completion of a project major activity or phase:** In the detailed design and testing examples above, the completion criteria relate to finishing a significant piece of project work.

**Completion of customer acceptance of the product/service/system being created:** This usage is similar to the testing example above in that it will generally involve criteria that prove the system works well enough to give to a customer. Customer acceptance criteria focus on proving that the system performs the functions required by a particular customer. The acceptance criteria may contain a list of "use cases" that will be run - a list of operations and situations that must pass, and even be demonstrated to the customer. The criteria will also call out any elements that the customer must sign off on before accepting the system, such as readiness of user manuals.

**Completion of an entire project:** Criteria for "project complete" are usually broader and will include meeting the release criteria for the product/service/system being produced, but also go further to define when the entire project is really "done".

- When new electronics systems ship, the project would include a "first customer ship" milestone with its own release criteria, similar to the

“customer acceptance test” completion criteria. There may be another later milestone called “general availability”. The product is not released to this level - available to *all* customers - until additional criteria have been met: e.g. “our first 5 limited-release customers have used this system for 3 months and we have fixed all issues they’ve discovered. No category 1, 2, or 3 bugs remain.”

- For a product that must be manufactured in volume, including electronics and semiconductors, the project might run until a certain manufacturing volume with a specified yield has been achieved. Completion criteria would include “we can manufacture 50,000 units per month with a 90% yield and a 40% gross margin.”
- It’s very typical for project completion to include items related to documentation. “All manufacturing drawings must be under rev A control”. “All software design documentation must be under change control and reviewed with those who will be maintaining the system.”
- Some companies include customer-focused criteria in their “project complete” criteria. For instance,

their process will call for formal customer feedback to be collected for some period of time, the data analyzed, major issues corrected, and all other feedback compiled to feed to the marketing/product management/analyst staff for future releases.

- Some companies include “knowledge management or quality-focused” criteria in their “project complete” criteria. For example, their process will call for a formal “lessons learned” meeting to be held by the team, with results documented and presented to other project managers. The project is not officially called complete until this session is held.

**Finally, when are Completion criteria created?** Set them as you plan:

- Completion criteria for the project and for each major phase of the project are generally set during the planning phase, to ensure that all work needed to be able to meet the completion criteria is factored into the schedule and budget.
- Completion criteria for particular project tasks are set when that task is planned. For instance, criteria for

customer acceptance testing are set when that test plan is written.

- In all cases the criteria may get updated as additional requirements come to light.

Completion criteria should be drafted, reviewed, and agreed upon by the team or appropriate subset of team members, and kept visible. They are really communication tools that ensure everyone agrees upon the meaning of DONE and plans and works accordingly.

**Related links: Visit** the ProjectConnections.com site for links to templates and checklists related to this article.

[www.projectconnections.com/member/emsoffer](http://www.projectconnections.com/member/emsoffer)

*This item was adapted for the EMS newsletter from a ProjectConnections.com Premium document, “Guidelines for Using Completion Criteria”. EMS and IEEE members get a greatly reduced rate on the site’s Premium knowledge-base Subscription, which provides access to 100 practical templates, guidelines, and checklists that can be downloaded and edited for your projects. Check out the EMS and IEEE special rates and examples of other Premium content at the above web address.*

*Learning is not an occasional event, to be stimulated, provoked or reinforced.*

*Learning is what the brain does naturally, continually.*

Frank Smith

## CALL FOR VOLUNTEERS

**The EMS Education Committee is Seeking Volunteers**

Please Contact

[d.kemp@ieee.org](mailto:d.kemp@ieee.org)

# An Ohm's Law for Managers - Applied

by Peter LaChance

In the last issue of this newsletter (Volume 53 #2 page 6), Anthony Bainbridge of IEEE proposed an "Ohm's Law for Managers." His article inspired me to take his thoughts a step further. Bainbridge proposed the following *Ohm's Law for Managers*:

$P = D/Z$ , where:

- P** = progress achieved;
- D** = drive behind the endeavor;
- Z** = complex human impedance

This formula makes good sense: the greater the drive behind any effort, the greater the progress; while increased human resistance will result in less progress.

*D* is an independent measure of management's commitment to progress, represented by their constant encouragement and the contribution and assignment of ample resources. To make "Ohm's Law for Managers" useful, we must also define *Z* in terms independent of *P* and *D*. Modifying a formula learned from my colleagues at Resource Associates Corp., I propose:

$1/Z = S \cdot K \cdot A \cdot G$ , where:

- S** = skills
- K** = knowledge
- A** = attitudes
- G** = goals

**S, K:** *K* is a measure of *what to do* and *S* is a measure of *how to do it*. Accurate knowledge and good skills grease the skids to achieving improved results.

**A:** *A* is a measure of *want to do it*. Healthy attitudes toward their organization, managers and work, results in lower resistance by people to progress.

**G:** *G* is a measure of *plan to do it*. Without a plan that team members can agree on, they will tend to row in different directions.

Of these four variables, which are the most important? Humans have a proven ability to learn quickly the knowledge and skills necessary to accomplish a task effectively, given the presence of desire and focus. Desire and focus are the products of the variables *A* and *G*, respectively. I therefore conclude that *A* and *G* are necessary to the development of suf-

ficient *S* and *K*. Given the fundamental importance of attitudes and goals, it is perplexing that we do not emphasize these subjects in most of our schools and professional development programs.

Great managers instill a culture of self-motivation through personal and organizational goals, and they master the ability to develop good attitudes within their team members. Many of you are probably wondering how to improve attitudes. Well, *A* can be independently defined in terms of values and beliefs, but that is a topic for another article...

*Peter LaChance is president of Quintessence, a leadership development company affiliated with Resource Associates Corp. He earned bachelor and masters engineering degrees and an MBA from RPI. Peter has been an IEEE member for 22 years. For contact information see: www.Talent2Triumph.com. Voice 1-888-355-3233, email to Peter@TQC.com.*

## Conference Call for Engineering Managers

by Terrance Malkinson  
EMS Newsletter Editor

*This feature is a continuing initiative, the concept being to ask in each issue of the EMS newsletter a question of current interest and then printing a selection of the responses received in the subsequent newsletter. The objective of this feature is to stimulate the readership to think about issues of importance to our profession, and make the newsletter interactive.*

In the first issue of 2003 a number of the leaders of the EMS answered the question: "Who is the Engineering Manager?" In the second issue we asked you the readers to share your

experiences with mentoring. In this issue the responses of two of our EMS members have been published. Thank you to Jim Head and R. Kannan for sharing your experiences.

Should you have a question to ask the membership please submit it to the newsletter editor [malkinst@telus.net](mailto:malkinst@telus.net).

### This Issue's Question

Many organizations are eliminating hierarchical levels by restructuring to a flat organization. Cost reduction and information technologies are but a few of the reasons for this. The question arises as to which organizational structure (hierarchical or flat) is best

for business productivity and worker effectiveness.

Hierarchical structure allows for categorization of work, a predictable career and compensation ladder, clear accountability, and values experience. Hierarchical structures may be expensive, time-consuming, are resistant to change, promote self-importance, status, and "buck-passing", and are associated with the connotations of "bureaucracy".

Flat structure promotes ownership of tasks, eliminates redundancy, is responsive to change, facilitates creativity and innovation, is closer and therefore more responsive to the cus-

tomers, streamlines processes and empowers employees. Flat structures provide fewer opportunities for advancement, put more responsibility/stress upon the individual, requires skilled employees with experience, and reduces independent checks and controls.

## What do you think?

We are interested in your experiences with organizational structures. Please submit 300 words or less to the newsletter editor [malkinst@telus.net](mailto:malkinst@telus.net) by September 15, for publication in the next issue.

## My Experience with Mentoring

from: Jim Head

In 2000, Shortly after I returned to Bell Laboratories outside of Chicago after a 4-year expatriate assignment for Lucent Technologies in Saudi Arabia, I became responsible for a team of engineers responsible for designing and delivering services to our larger customers. Six months into this assignment, as a result of a re-organization, I gained responsibility for reporting our year-to-date financial results and updating our forecast for the remainder of the year (for the entire division). Due to budget constraints, I was not allowed to hire anyone to perform this function. Therefore, I would have to train one of my engineers to manage this full-time job.

I selected Claire, a young but very experienced Electrical Engineer who had recently returned to work after a maternity leave. Although Claire had no background in financial analysis, she had a proven record of learning new technologies and concepts very quickly and enthusiastically. She welcomed the challenge of learning the business side of our operations as she would any new project. During the first two weeks of the new assignment I would meet with Claire for an hour or so each day, giving her tutoring sessions regarding accounting, financial statements and forecasting. I made

sure to include her in all meetings, conference calls and e-mails pertaining to her new position. I also took advantage of every opportunity to introduce her to all the other Directors in our division from whom she would be getting the information to produce our monthly report. I told Claire that as soon as she developed a relationship with these people she would not have to include me in every meeting with my peers or have me screen every piece of correspondence that she wrote. I had every confidence that she would be an outstanding representative for our team.

Claire's cross-training was a huge success, for both her and our organization. She quickly mastered the business concepts, developed positive relationships throughout the organization and produced a viable report on a monthly basis. What impressed me most about Claire's efforts was her ability to solve problems before I even knew they existed. It became commonplace that by the time I had read an e-mail from a colleague (that Claire had been copied to) that would either identify a problem or request information, Claire had already taken whatever action was necessary to address the issue. Claire earned the highest possible rating from my peers and I at her next annual performance review and was promoted to Member of Technical Staff within the year. The high level contacts within Lucent that she has made, as a result of her work in this assignment should prove invaluable to her career.

I learned that with proper mentoring and confidence, employees can not only succeed but flourish in a new project or assignment, even when asked to perform a function with which they had no previous experience or education.

## My Role as a Mentor

from: R Kannan

Senior Member IEEE  
Joint Chapter Chair, PES/IAS  
Hyderabad, India

The Second quarter Engineering Management issue (Vol. 53 #2) was very interesting with good contributions. I work for an engineering organization as an R&D Engineer and agree fully with the contents under "who the Engineering manager is not". I am sharing the contents with my fellow engineers in my organization.

With around 32 years of experience as an engineer and manager, I thought I would share some of my thoughts under the issue of Mentoring. Hope you will appreciate the contents.

The world is becoming more and more competitive. More personnel at the mid level get dejected as their career growth slows down. At the mid career level they can be a highly specialized individual or a "Jack of all trades". If one gets into specialization, one may get glory sometimes but the career growth prospects get dimmer and dimmer. Their field of specialization offers only two opportunities. Continue with the present assignment forgetting the career growth or get out and take the challenges of becoming a consultant in the area of specialization. Job prospects outside are not high, since requirements are always very few and may be someone is sitting comfortably there. Alternatively if one is a generalist, prospects are again dim since more numbers are available in this category who may offer themselves at reduced costs to the companies, younger and more agile etc. Since any employee gets covered by either of the above, we are now coming across more and more of frustrated ones at the mid level of their career.

Some disappointed executives come to be hoping to get a soothened feeling and to them I always give the following advice. In most cases, the reason for their dejection is not because they have lost something. His peer getting the extra, hurts him more than his own self not getting it. Growth is thus triggered externally. Analyzing it deeper one will easily know that the growth, the moods, the contributions get stunted by compari-

son. So, if you compare yourself with some one better than you there is dejection. On the other hand if you compare yourself with some one doing not so well then it is a false sense of satisfaction. Both stunt the growth

though for different reasons. If one compares with his own self and decides to be better, then there will be growth. This is true of every one in this world who reached the top. They all had decided to do better than

themselves (the growth had been continuous this way). Let the Growth be triggered internally.

My slogan as a Mentor is TRY TO BE BETTER THAN YOURSELF.

## Chapter Reports

### Central Texas Chapter

*Steve Prough*

We completed plans to co-sponsor the 4<sup>th</sup> annual University of Texas Engineering Management Institute (EMI) workshop to be held at the JJ Pickle Research campus on August 14–15. A joint conference committee including UT Center for Life Long Engineering Education (CLEE) staff and EMS chapter officers planned and organized the workshop to explore “Product Liability Management” as the central theme. A full slate of speakers and discussion panelists has been announced and we are anticipating a mixed attendance of IEEE members, UT Engineering Management students and public totaling 130 – 190. The workshop will feature interactive tutorials from legal and industry experts plus UT faculty members. The workshop will finish with a panel discussion on “Product Liability Avoidance for Engineers” and a networking reception will also be held.

### Report on EMS Benelux Member Meeting, February 3<sup>rd</sup> 2003, at TU Eindhoven

*Robert Bierwolf*

With the assistance of IEEE Student Branch Eindhoven we were allowed to make use of the superb facilities of the TU Eindhoven. The agenda of this meeting contained the following topics:

- Report on the Chapter Chair Workshop 2002
- Selected Readouts from the IEMC-2002

- Other Sessions for 2003

Robert Bierwolf and Bart Meijer presented the topics. A summary of the presentations will be posted through the Benelux website. The agenda for 2003 is now revised and sessions are planned for:

- October 6<sup>th</sup> on the subject of ‘Life Cycle Engineering’ at the TU Eindhoven in cooperation with KIVI/BK
- December 8<sup>th</sup> on the subject of ‘Innovation and Startups’ in cooperation with IEEE Computer Society at the TU Delft.

Members are invited to become part of the chapter management. Even though due to the economic downturn business priorities may have changed, the need to network with your fellow practitioners is of even more importance. All members are cordially invited to submit their suggestions and/or to step forward to become member of the chapter management team and help us organize interesting events for our members.

The IEEE Benelux website is: [www.ieee.nl](http://www.ieee.nl) and [www.ieee.be](http://www.ieee.be). You can reach us directly through: [robert.bierwolf@ieee.org](mailto:robert.bierwolf@ieee.org) or [b.m.meijer@wbmt.tudelft.nl](mailto:b.m.meijer@wbmt.tudelft.nl)

### Germany Chapter

*Johannes Nuehrenberg*

On the 18th of July, the second seminar on embedded systems in automotive was held in Munich. The focus of this seminar was “Automotive Broadband Networks” and speakers of Infineon, DaimlerChrysler, Motorola and

Siemens VDO gave their insights. The presentations covered topics about current and future CAN (Controller Area Network) in automotive networks, convergence of the networks in the car and use cases, architecture and challenges of automotive bluetooth applications. The seminar was closed with a light snack and an open discussion. Infineon added a life presentation of an automotive Bluetooth solution for hands-free telephony. Finally, we’d like to express our thanks to McKinsey & Company for again providing the location and the snack and thus supported and encouraged the positive atmosphere of the EMS meeting. In 2003, the EMS Chapter will continue its activities with a seminar on HR topic regarding the management of high tech professionals.

### Region 9 Chapter

*Jaime Jaen*

The current year has seen the Engineering Management Society (EMS) Region 9 Chapter Coordination Committee (CCC) engaged in a number of activities. The main task for the Chapter Chair Coordinator was as the interface for the various Chapters of this Society in Latin America. Other activities included:

- To review and update information regarding Chapter Chairs and/or officers of all EMS Chapters in Latin America.
- To encourage EMS activities in the existing chapters.
- To receive L-31 forms with details of Chapter activities, dates, topics, attendance.

- To approve and forward the L-31 rebate requests to EMS Treasury.
- To request information towards an EMS Chapter Chairs Workshop to take place during the Region 9 Regional Meeting in March 2004.

Messages to both Section Chairs and Chapter Chairs were delivered during March-May 2003 to request information on the current EMS Chapter officers in Region 9. Information was received from: Puerto Rico and Caribbean; (Edgardo San Miguel), Guatemala; (Otto F Andrino), Peru; (Enrique Alvarez Rodich), Brazil; (Sergio

Fronterotta), El Salvador; (Gonzalo Durán), Argentina; (Luis Vergani).

Other related planned, accomplished, or in progressive include:

- Promotion of the EMS Society to the Section Chairs at the Region 9 Regional Meeting at Morelia, Mexico. (March).
- Communication with EMS Chapters Chairs in Latin America for motivation and encouragement to develop Society and Chapter activities. (April-June)
- Discussion about the advantages and benefits of becoming a mem-

ber of EMS as well as promoting attendance to the IEMC 2003 in Albany, N.Y. (May-June)

- Encouraging participation of the Chapter Chairs in the EMS CC Workshop currently programmed to take place during the Region 9 Regional Meeting which will take place in Buenos Aires, Argentina, in March of 2004. (May-June).

Working to establish the EMS Chapter in the IEEE Panama Section with the assistance of Section Board Members. (June)

## Measures of a Person - Part 2

by Paul A. Willis  
EMS Board of Governors

*This is the second in a series of three 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.*

As managers of engineers, we are continually communicating, collectively and individually, with a large number of stakeholders. We can enhance the quality of these communications by tailoring them to each recipient’s personality. In order to do so, we need a measure or measures of the member’s personality; by a credible and accepted proven measuring tool. This is an ongoing effort, one that is calibrated against the member’s daily activities.

Today, there exists many tests for measuring the logical intelligence (Stanford-Binet-Wechsler IQ test), vocational interests (Kuder Preferential), specific skills (typing speed, key-punching speed, soldering, etc.), motivations, attitudes, aptitudes, physical capabilities, sociability, saneness, as well of many others.

Plato, c340BC	Artisan	Guardian	Idealist	Rational
Aristotle, c325	Hedonic	Proprietary	Ethical	Dialectical
Galen, c190 AD	Sanguine	Melancholic	Choleric	Phlegmatic
Paracelsus, 1550	Changeable	Industrious	Inspired	Curious
Adickes, 1905	Innovative	Traditional	Doctrinaire	Skeptical
Spanger, 1914	Aesthetic	Economic	Religious	Theoretic
Kretschmer, 1920	Hypomanic	Depressive	Hyperesthetic	Anesthetic
Jung, 1939	Sensory	Judging	Intuitive	Thinking
Fromm, 1947	Exploitative	Hoarding	Receptive	Marketing
Myers, 1958	Probing	Scheduling	Friendly	Tough-minded
Myers, 1958	SP	SJ	NF	NT

**Table 1: Historical Characterizations of Personality**

There is a rich history of classifying human personalities. In the Western world, Greece and Rome are much revered and used as the bases from which extensions of their ideas are built. I find it surprising that many sources of characterizer’s of personality used only four descriptors. Why not seven, eight, or more? Sticking with the generators of four fold characterizations yields the entries in Table 1.

I analyzed the words in each of the latter four columns of Table 1 and listed their definitions and synonyms and tried to reach a positive correlation among entries in each column. For example, Artisan yielded artist, mechanic, handicraftsman. Myers SP yielded artist and gifted with machines

and tools, so the first and last entries in column 2 of Table 1 share the “artist, mechanic” characteristics. Not every entry in column 2 had a similar synonym to any other entry, so I looked at the historical times of those in column 1. Note they span more than 2,000 years.

As I performed these listings and correlation’s for each column, it became clear that many entries in each column did not share attributes with Myers’ SP, SJ, NF, or NT. One reason, I believe, is that each row of four entries were formulated during the authors lifetime and reflects the atmosphere of their time.

Myers’ four pairs were one of the more modern expansions and mod-

ernization's of Jung's four personality types. There are many other's who have produced characterizations of personality but most are only of historical interest, having not proven their usefulness.

## The Myers-Briggs Type Indicator

The Myers-Briggs Type Indicator is a quad arrangement formed from four pairs of alternative characteristics: E or I, S or N, T or F, and J or P as follows:

<u>SP's Artisans</u>	<u>SJ's Guardians</u>
ESTP Promoter	ESTJ Supervisor
ISTP Crafter	ISTJ Inspector
ESFP Performer	ESFJ Provider
ISFP Composer	ISFJ Protector

<u>NF's Idealists</u>	<u>NT's Rationals</u>
ENFJ Teacher	ENTJ Fieldmarshall
INFJ Counselor	INTJ Mastermind
ENFP Champion	ENTP Inventor
INFP Healer	INTP Architect

### Jung's Types:

E = Extraverted	or	I = Introverted
S = Sensory	or	N = Intuitive
T = Thinking	or	F = Feeling
J = Judging	or	P = Perceiving

### Myers's Types:

E = Expressive	or	I = Reserved
S = Observant	or	N = Introspective
T = Tough-minded	or	F = Friendly
J = Scheduling	or	P = Perceiving

Looking at each of the dyads in turn:

For the SP, Artisan, life's cup is to run over, resources are to be expended, people are to be enjoyed, games are to be played. In their view, "human" and "generous" are synonyms.

Keirsey likens SP's to foxes in that both are clever, one step ahead of those who would restrain them. Plato defines the SP's social function as practical artist: To fashion those ornaments, sensory images, and objects useful in daily living. Their arts transcend "Fine Arts" – music, dance, literature, painting, drawing, sculpture – and include the "Practical Arts" – theatrical, martial, industrial, athletic, medical — for Artisans.

Artisans (SP's) and Rationals (NT's) share the trait of being "fitters", the SP's having a practical and technique-oriented way of fitting things together, the NT's a pragmatic and technology-oriented way of fitting things together. Keirsey (p. 33-74) discusses SP characteristics assigned by each person in column 1 of Table I; I recommend them to you.

The NF's, Idealists, are well-endowed with diplomatic intelligence. Counselors need such skills to be effective, and experience shows that the vast majority of school, marriage, family, and other social counselors are NF's or have strong NF attributes. Since the leader-manager role of coaching is much like counseling, strong NF characteristics are desirable for them.

Keirsey likens NF's to Dolphins. Historical Idealists include Plato who thought ideas had more reality than earth or its inhabitants, Aristotle who placed the study and practice of ethics as the highest calling of man, Isabel Myers the author of the Myers-Briggs Types, Gandhi, George Washington, Emily Dickenson, Eleanor Roosevelt, Carl Rogers, and Abraham Maslow.

NF's are Abstract Cooperators, opposite to SP's, Artisans who are Concrete Utilitarians. The Abstract/Concrete refers to words used while Cooperative/Utilitarian refers to the Tools used. NF's zeal to connect disparate ideas is why their communications are often laced with metaphors – abstractions. They are notorious for overstatement, hyperbole, and exaggeration, often making binary classifications with no gray gradations between the one and the zero.

Keirsey (p.116-160) gives a much more complete description of Idealists and their four subtypes: ENFJ, INFP, INFJ, and ENFP, and is worth reading. I recommend it to you. A full page of Temperment and Character traits for all four subtypes is on page 148 and will repay diligent study.

The distribution of subtypes among United States citizens has been shown to be:

ESTP 10% ISTP 10% ESFP 10% ISFP 10%  
ESTJ 10% ISTJ 10% ESFJ 10% ISFJ 10%  
ENFJ 2% INFJ 1% ENFP 2-3% INFP 1%  
ENTJ 2% INTJ 1% ENTP 2% INTP 1%

NT's, Rationals, are Abstract Utilitarians, opposite in thoughts and ideas to SJ's, Guardians. The majority of Engineers are NT's. Rationals want to tame nature, to be accurate, to get things straight, sort things out, in order to avoid errors in reasoning. This concern with truth of understanding often is a trait that makes NT's appear to be detached from others, even distant from others, apparently having little interest in social reality; these are certainly true when a Rational is mentally working on a problem.

Paracelsus emphasized the insatiable curiosity and restless research of the Rationals. Their doubting nature is shown by their statements of only the possible and the probable rather than certitude in what is real. Descriptors are rational, logical, skeptical, theory building, unfeeling, distant, detached, efficient, adaptable, curious, experimental, farseeing, flexible, generous, intelligent, open-minded, purposeful, sociable, tolerant, undogmatic, witty, youthful, intuitive thinkers, systematic. Are you a Rational? Test yourself against the above list of traits.

Rational's use abstract words and talk about ideas rather than objects. Their speech is often so terse and compact that they sometimes lose their audience. Their assumption that the obvious doesn't need to be verbalized because the audience is as knowledgeable about the obvious as the speaker is often at the root of audience loss. Their audience rarely includes SJ's, Guardians.

Some Rationals from history include; Shakespeare, William F. Buckley, Thomas Jefferson, Abraham Lincoln, Nikola Tesla, Thomas Edison, Rene Descartes, Husserl, Sartre, Merleau-Ponty, Benjamin Franklin, James Madison, Mark Twain, Howard Hughes, Buckminster Fuller, Richard Feynman.

ENTJs, Fieldmarshalls, are less than 2% of the US population, include Dwight Eisenhower, Douglas MacArthur,

George Marshall, superleaders, mobilizers. INTJ's, Masterminds comprise about 1% of the US population, are masters of order, contingency planners, open to new ideas, highest achievers in school. ENTP's, Inventors, comprise about 2% of the US population, new ways of doing things, Design is means to an end. INTP's, Architects comprise about 1% of the US population, masters of organization, Design is an end in itself.

Many engineers find themselves oscillating between being an ENTP and an INTP, having strong characteristics of both subtypes.

This completes our short introduction to the Myers-Briggs Type Indicator. Below are some references that you may want to browse for further information.

Freud, S. A General Introduction to Psychoanalysis

Jung, C. Psychological Types

Myers, I. The Myers-Briggs Type Indicator

Keirse, D. Please Understand Me II

Gardner, H. Frames of Mind: The Theory of Multiple Intelligences

*The ultimate measure of a man is not where he stands in moments of comfort and convenience, but where he stands during challenge and controversy.*

*Martin Luther King Jr.*

## Board of Governors Meeting

The Board of Governors of the Engineering Management Society held its second meeting for 2003 in Ottawa Canada, July 25-27. Special thanks to John Grefford, Chair IEEE Ottawa Section and the Ottawa members for their help with local arrangements. Highlights of the BOG meeting include:

### EMS Operations Manual

An ad-hoc committee chaired by Irv Engelson has updated the EMS Operations Manual. Committee members were Charles Rubenstein and Beth Zimet. Engelson was also asked to propose revisions to the Constitution and Bylaws as required. The Operations Manual consists of three principal parts; Constitution, Bylaws, and Policies. A fourth part on Procedures is to be developed later.

### Virtual Community Project

The IEEE EMS Forum Virtual Community provides services to EMS members. The collaboration tools available on the Forum support increased volunteer participation, increased information exchange and knowledge sharing. It was recommended that; EMS continue the Forum and develop marketing strategies to capitalize on these collaboration

tools for use by members, BOG and Chapters. The production site was launched on February 6. As of July there are 137 members, representing a monthly growth rate of 28%. From March to June, the average monthly page views were 2680. The Forum was benchmarked to five other IEEE Virtual Communities and showed the highest results in overall % participation by membership, and highest average poll response rate. The Forum was ranked in the top three for; Average Page Views, Overall Membership Growth Rate, Calendar Entries, and Files contributed.

### Education

The focus of the Education Committee's activities has been; to develop and deliver product and services, to contribute to EMS revenues, sustainability of developed product and partner relationships, and to engage volunteers in meaningful and satisfying Society activities. The opportunities for EMS to conduct an education track at the Mexico Power Conference are being investigated. The Distinguished Lecture Program is being transitioned from VP Conferences to Education. Further information on Education initiatives is summarized in the EMS President's column.

### Publications

For several years IEEE has been exploring ways to change the ASPP algorithm. At the June TAB meeting a proposal was presented that would allocate total ASPP funds as follows: 50% allocated just because the Society has publications, 15% allocated to page count, and 35% allocated to actual usage of documents residing in Xplore. Preliminary figures show this will have a negative impact for EMS and many other societies. EMS is exploring approaches for reducing overall costs. The *Newsletter* is the one opportunity we have for focusing on the entry to mid-level managers. The *Transactions* takes care of the academic community, the *Review* works exceedingly well for upper level managers but we don't do much for the managers who are responsible for getting the products out the door. We also need to determine because of financial constraints if we should continue the print version of the Newsletter or go electronic. The verdict isn't in as yet as to the desirability or viability. Going electronic on our Website provides certain opportunities as well as problems. We need to assess the situation. Your input is

essential to finding an appropriate solution.

## Special Interest Groups

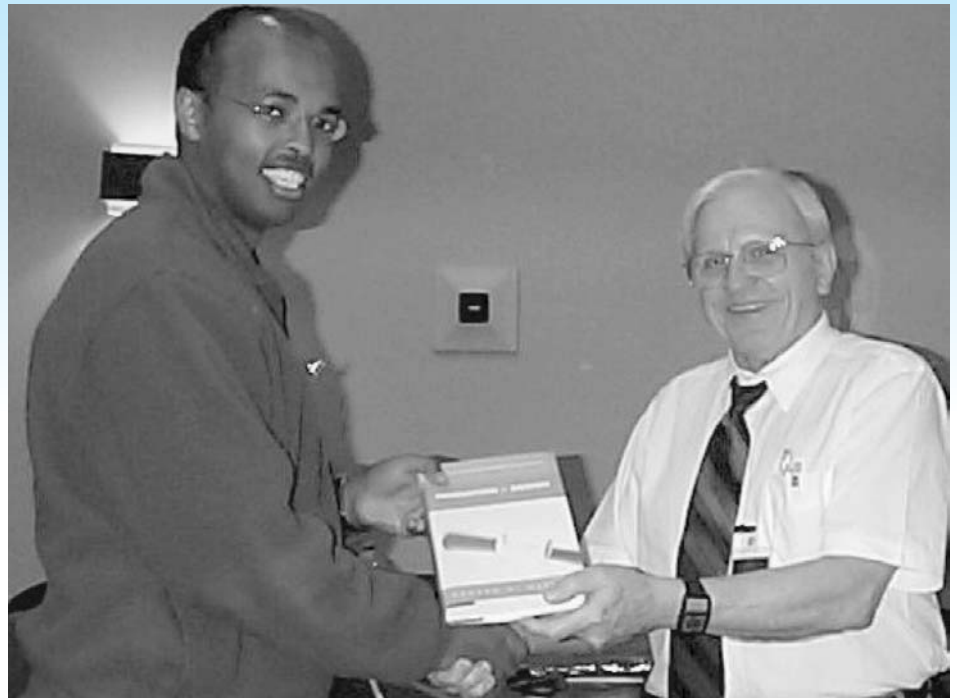
The following have indicated their willingness to join the Task Force on Special Interest Groups; Professor Tariq S Durrani (Chair) Lois Peters, Peter Geary, George Farris, Charles Rubenstein, and Gus Gaynor. The objectives of the task force are to: Define and refine the Role of SIGs (some definitions are available in the EMS Operations manual), Propose an organisational structure for SIGs, Identify subject areas for launch of Pilot SIGs, Recommend vehicles for promoting the Initiative If possible, identify SIG champions Identify financial implications for launch of SIGs, and for First year's operation The Task Force will conduct all its deliberations electronically. The Task Force to complete its work, and to submit a Report with recommendations to the Board of Governors, in good time for discussion at the January 2004 BoG meeting in Orlando.

## Board of Governor Membership

The Board agreed to decrease the number of elected BOG members at large from 24-18. EMS has the largest number of elected Governors among IEEE societies. This reduction will be implemented in a phased in process by electing six instead of eight members starting with the 2005 term. At the July meeting of the Engineering Management Society officers were elected for 2004 and the slate of candidates for the 2004-2006 term Board of Governors was approved. Officers are:

President: Irving Engelson  
Executive VP: Tariq Durrani  
VP Conferences: Joe Bellefeuille  
VP Education: John Barrett  
VP Membership: Charles Rubenstein  
VP Publications: Gus Gaynor  
VP External Relations: Joel Snyder

The slate of candidates for the 2004-2006 Board of Governors elec-



*Gus Gaynor (right) presenting to one of the participants, Yousof Pakzad, a copy of his text titled "Innovation by Design".*

tion has 12 names. Eight nominees are elected by the membership to serve on the Board beginning in January 2004. The EMS Board of Governors is pleased to announce these nominees and we encourage each of you to respond with your ballot when it arrives in the Fall of 2003. The nominees include:

Gerry Alphonse  
John Barrett  
Bob Bishop  
Celia Desmond  
Peter Eckstein  
John Grefford  
Jaime Jaen  
Lou Luceri  
Terrance Malkinson  
Lois Peters  
Wade Shaw  
Mark Werwath

The EMS depends upon the volunteer efforts of our Board to coordinate our activities in education, conferences, publications, membership, and awards. Our sincere appreciation to those who put their name forward to serve the Engineering Management Society.

## Education Program Initiative for Chapters (EPIC)

The pilot of this concept took place the day after the BoG in Ottawa, Monday 28 July at the Communication Research Center. IEEE Ottawa demonstrated exceptional support and enthusiasm. Thanks to John Grefford, Chair IEEE Ottawa Section and to Branislav Djokic, Maike Miller, Rami Abielmona and Zivco Billick. Administration and planning were conducted between the Chapter and EMS. The Session Keynote address was provided by: Denzil J. Doyle, Fellow Engineering Institute of Canada, who outlined the difference between Selling and Marketing and the perfect "attributes" of the CEO of Innovative companies. The Ottawa Section thanks our Seminar Leader for the event's success: Gerard H. (Gus) Gaynor. Gus has 45 years experience in managing Engineering and Innovation. A total of 43 members attended the seminar including 5 EMS Board of Governor participants.

## 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.

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

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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.

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Printed in the U.S.A.

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

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