



By Wade H. Shaw, Jr.,  
President EMS

**“Thinking globally takes practice! We tend to constrain our thinking to what is familiar and comfortable to us. But the EMS and our field of interest is transnational.”**

**“To invent, you need a good imagination and a pile of junk.”**

— Thomas Edison

## Thinking Global

In my last article I shared a series of challenges that I presented to our Board of Governors to help us think in broad terms about our future. You may recall that the challenges for the next two years included:

- Increasing our membership to 10,000
- Increasing our financial reserves to \$750,000
- Improving our conferences and their attendance
- Decreasing the time to review papers for our Transactions

We are steadily making progress on these and other initiatives as we prepare for the Board meeting and conference in Albuquerque in mid-August. We successfully used data and voice conferencing this summer to begin the strategic planning process and used desktop computers to simultaneously share presentation materials from Europe to the western USA. Technology is indeed making the world a smaller work place. It is time for us to recognize the global nature of our field of interest and how we will reach out to members around the world.

It is clear from the trend lines in our chapters, membership, and subscriptions that the EMS serves an international audience. Chapter growth is significantly greater in regions outside the US. My conversations with other Society Presidents confirm that the EMS is by no means alone in this trend as more and more activities are developed and targeted to our associates in many countries, regions, and continents.

You may not know that the Board of Governors has for the last four years made a special effort to attend IEEE Regional meetings. The IEEE divides the world into

10 regions with Regions 1-6 for the USA, Region 7 for Canada, Region 8 for Europe, the Middle East and Africa, Region 9 for South America, and Region 10 for the Pacific Rim and Australia. These efforts by numerous Board members have resulted in an even greater awareness and appreciation for the EMS in locations that we did not target before. It has been a pleasure to meet so many enthusiastic supporters in their homelands and beautiful cities.

I had the opportunity to meet with the Section and Regional leaders of Region 8 in Oslo, Norway in May. It was truly a delight to visit with our IEEE friends in Norway and to meet with so many section and chapter leaders who wish to develop better relations with the EMS. It is clear that the EMS must do a better job of building relationships with IEEE groups in Europe, Asia, South America, the Middle East, Africa, and the Pacific Rim. The EMS field of interest is well received around the world as engineers in so many regions grapple with the challenges of managing technology.

A key ingredient to getting the EMS message out to the world is the construction of portable educational products. This summer the EMS is participating in a pilot program to produce electronic presentations that can be shared on CD-ROM and the web. Our first production is in the area of project management and was prepared by EMS Past-President Cinda Voegtli at Rutgers University in June. We are looking forward to sharing this product and we plan to offer a Spanish translation for use in Region 9.

Another aspect of our efforts to reach out on a global basis is the EMS initiative to build a close working relationship with the Management Division of the Institute of

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## It's that time again ...

On September 1 the IEEE will be mailing ballots for the annual election of officers to fill various positions. The ballot will include nominees for:

IEEE President-Elect, 2001  
 Division II Delegate/Director, 2001-2002  
 Division V Delegate/Director 2001  
 Division VI Delegate/Director,  
 2001-2002  
 Division X Delegate/Director, 2001-2002

Region 2 Delegate-Elect/Director-Elect, 2001-2002  
 Region 4 Delegate-Elect/Director-Elect, 2001-2002  
 Region 6 Delegate-Elect/Director-Elect, 2001-2002  
 Region 10 Delegate-Elect/Director-Elect, 2001-2002  
 Standards Association President-Elect, 2001  
 Standards Association Members-at-Large, 2001-2002

Technical Activities Vice President-Elect, 2001  
 IEEE-USA President-Elect, 2001  
 IEEE-USA Member-at-Large, 2001-2002

This is your opportunity to select the people who will ensure continued technical excellence, address the critical professional needs, increase member participation, and manage our resources effectively and efficiently. Please take the time to evaluate the candidates and express your wishes.

## Recognize Outstanding Performance

by Luchi Gandia

### VP Recognition and External Affairs

Most of us appreciate a pat on the back for a job well done. It's what we call *recognition for a job well done*. It's nice to hear those words, *thanks for a good piece of work or similar comments*. It's necessary that people be recognized for going *beyond the call of duty*.

In our fast paced society too often we forget to acknowledge the effort put forth by colleagues, friends, neighbors, and other associates. We don't take the time to acknowledge the extra effort that really makes the difference between success and failure.

The Engineering Management Society (EMS) and most entities of IEEE provide adequate means for recognizing outstanding performance. But we need your help to identify the members who are contributing to the field of engineering and technology management.

Your EMS offers the following awards:

- Engineering Manager of the Year
- IEEE Fellow
- Honorary Member of EMS
- Transactions Publication Award
- Chapter of the Year Award
- Chapter Chair Certificate
- PACE Project Award

Through these awards EMS recognizes outstanding performance by its members to the Society, IEEE, and the organizations they work for.

There are many ways of recognizing the work of an IEEE volunteer. If a member of your entity has performed an outstanding job, publicize it. Give us an opportunity to share that performance through publication in the EMS Newsletter. Recognize the work of your colleagues, give them an award.

For complete details visit the EMS Web Site at <http://www.ieee.org/ems>.

As EMS Vice President for Recognition & External Relations, I am at your service. Please contact me at [l.gandia@ieee.org](mailto:l.gandia@ieee.org)

Recognition sustains membership vitality. The EMS Board of Governors depends on your input for providing recognition of outstanding performance.

## Thinking Global

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Electrical Engineers in the United Kingdom. The Institution of Electrical Engineers (<http://www.iee.org.uk/>) represents the public, professional and educational interest of over 140,000 electrical, electronic, and manufacturing engineers worldwide. Key activities include publishing, organizing conferences, maintaining technical standards, interacting with government departments, and providing scientific and technical information services. The EMS relationship with the IEE is progressing well and we plan to introduce

columns in each other's newsletter this year. Our respective boards are sharing their journal publications and discussions are underway to discuss other ways to work together.

The major EMS conference for 2000 will be completed by the time this newsletter reaches you. The IEMC2000 in Albuquerque, New Mexico drew a transnational audience as well as an outstanding group of presenters from around the world. Our friends in Region 10 are hosting the first IEEE International Conference on Management of Innovation and Technology (ICMIT2000) in Singapore from November 12-15.

The theme of the conference is "Management in the 21st Century" and the EMS is pleased to participate in this conference. Visit the conference web site at <http://www.ise.nus.edu.sg/icmit> to learn more about this important initiative.

Thinking globally takes practice! We tend to constrain our thinking to what is familiar and comfortable to us. But the EMS and our field of interest is transnational — I am committed to learning how to think global. The EMS Board of Governors and I are committed to our entire membership as we continue to grow our Society. Help us by also thinking global!

## COACH AS SERVANT

by Joe Bellefeuille

EMS Board of Governors

### Part 4 of four parts

In this installment we look at a situation, using the following vignette, where a manager is caught in a paradox. We show how adopting a coach-as-servant role may solve the dilemma. We, also, examine how the coach-as-servant approach looks in action when we focus on people seeking coaching as they develop and expand their potential. This provides the coach more opportunities for coaching and frees time to develop strategies.

Consider the following vignette wherein the vice president is reporting on conversations she had with her subordinate, the engineering director.

*The engineering director, who reports to me, has been specifically assigned to personally handle the project management function over a project that his team is responsible for. He has been instructed to “drop everything else” and concentrate his energy on making sure that the project in question gets back on track quickly. This project is the potential source of one-half of the company revenues. He agreed that the appropriate strategy is to immediately become involved in the day-to-day details of the project. On Monday and Tuesday, he found excuses to stay in his office.*

*My encounter with him was a telephone conversation late Tuesday in which I asked him if he had reviewed the project and attended any meetings. He indicated that internal operational considerations had interfered with his plans. My tone and response were a dead give-away that I was irritated and angry. I instructed him again to drop everything and get involved to find out what is going on in the project.*

#### **Vice-president of Product Management and Marketing**

Let's analyze what is going on in this situation. The vice-president assumes that she knows what has transpired between her and her director. (Note her comment: “My tone and response

were a dead give-away that I was irritated and angry.”) But, how does she know? Imagine that the director hears only her profound lack of confidence in him. This reduces his self-confidence and, while he agrees and would like to become involved, he is simply too afraid to take over the project. If this is true, the vice president has created her own trap. As she grows more and more irritated and angry, the director becomes increasingly frightened and is even less able to effectively take over the project. What can the vice president do?

Did you ever see or experience the Chinese handcuffs that children play with? The more you pull to get your fingers out of the toy, the tighter it becomes around your fingers. The key is to loosen the tension so you can escape. In our vignette, the vice president is fighting the situation, and by getting angrier she only tightens the grip that the situation has on both of them. In taking on a more controlling role, she separates herself from the situation that she has helped create. By letting go and being open to the possibility of seeing and understanding events from the “other side,” she may see a point of view from experiences that complement and complete her own. She may see how her behavior is part of the problem, and in this way she may be able to resolve some of the paradox. By being open to learning and inserting herself into the situation, she acknowledges that she is responsible.

The servant coach role facilitates this outcome. The servant coach's thinking has to be aligned with the perspective of the client. In this case, the vice president has to be open to learning what the director is experiencing and thinking.

Taking on the servant coach role and collaborating with the director, would have allowed her to see how she had “discounted” the director, in effect diminished his self-worth and her own

effectiveness as a manager. As the vice president and director talk directly with each other, the chances increase that the director in turn will help her with her role. In this way, as our vice president learns these new skills, her abilities to manage the complexities in a team environment are leveraged through those whom she manages.

A few years ago I was managing a small group of operations engineers whose job it was to stimulate activity in continuous process improvement. This group was organizationally situated centrally to a much larger organization. Its chief mode of operation was to develop tools and techniques and then go forth and help others do their jobs better through the use of the new approaches.

As one can imagine, there was a fair amount of risk involved in doing this. On one occasion, a young engineer that I will call Jennifer was introducing a structured approach to process management in the storeroom component picking and kiting process. She had garnered the tacit approval and support of the storeroom and process-engineering managers. However, a supervisor that reported to the storeroom manager would not cooperate. If Jennifer went to either the person's boss or the process-engineering manager, she would risk losing face with them. This could also make matters worse between her and the supervisor. This was her own version of the Chinese handcuff.

She decided to ask me as her supervisor to also function as coach. My intuition told me to jump in and give her all kinds of advice. Instead, I asked her many questions that allowed me to fully understand the situation and to really align myself with Jennifer's commitment and goals. This process of questioning and responding led her to many tactics that enabled her to be successful in gaining her adversary's confidence and cooperation.

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## Golden Opportunity for a Golden Age?

by David J. Wells

Editor-in-Chief EMS Review

**“Living in the information age can occasionally feel like being driven by someone with tunnel vision”**

— From the  
Social Life of Information

**In 1975 Business Week predicted that the “paperless office was close.”**

### Note from Gus Gaynor, EMS Newsletter Editor:

Although EMS members receive a copy of the Engineering Management Review I'm reprinting the comments of our EMR Review Editor-in-Chief Dave Wells from Volume 28, Number 2, for the Second Quarter 2000.

Engineers' Image appears to be a timely topic. Engineers are concerned about their image in relation to other professions. In the past Spectrum and more recently *the institute* raised the issue of the image of women engineers. In 1998 *Today's Engineer* noted what engineers must do to change the image. Other engineering societies such as ASME, ASCE, and SME also have raised the issue.

In this reprint Dave Wells clearly presents his thoughts about what is required of engineers to take advantage of leadership opportunities. Please send your comments to [d.wells@ieee.org](mailto:d.wells@ieee.org) or [g.gaynor@ieee.org](mailto:g.gaynor@ieee.org).

This issue of the IEEE Engineering Management Review contains a somewhat eclectic collection of articles about building technology, the economy, processes, and relationships. Among these articles, engineering is a common denominator. I've also noticed over the past decade and a half that engineered products enjoy greater visibility than the engineers who create them. In fact, engineered products seem dissociated from the engineers behind them. We relate art to artists, buildings to architects, and products of engineering to businesses or entrepreneurs unless the inventor/designer is a college dropout. Engineers also seem less often associated with strategic vision and leadership than they might have been. I think we'd like our professional image to project more of a sense of largesse.

Let us not be fooled, however. Our image will be of our own making, and stature is to be earned. The legal, academic, and political professions also face image challenges, but my interest is specifically, and naturally, with engineers as leaders. If the role of a professional is more important than appearance, then the engineer's professional challenge is not a reactive one of what must be fixed, but a constructive one of what more might be done. There exists an opportunity for a profession to expand its business and societal contribution beyond its current status. (Yes, I am sometimes accused of being an idealist.)

### Superconducting Markets Need Engineering

In addition to the “stuff” we help bring to market, engineers as managers and leaders have a unique opportunity to bring reason and analysis to the business processes of management and strategy amid environments that are increasingly complex and demanding. There are many examples available, but consider the combined intricacy and power of supply chains in today's commercial environment. They demand efficiency, speed, accuracy, agility, and vision against the backdrop of increasing quality, technical complexity, and decreasing cycle times and margins. In short, the process of industrial and commercial business is, at heart, an engineered environment.

In this arena, clear metrics and realtime feedback are prerequisites to understanding, managing, and improving process performance. The marketplace is taking on a semblance of superconductivity (at least in comparison to prior practices), in so far as moving information and product in support of commerce. These things help firms and nations maintain competitiveness; oddly, they also help the world to be a bit smaller. I maintain that this is fundamentally a realm of engineering management.

## But Sometimes Engineers Do Not Lead

It would be a mistake to think that engineers are passed over for promotions because they are engineers. I think engineers sometimes hit career ceilings early partially because of their engineering education and professional development. The expectation for strategic leadership growth is seldom more than a token component of engineering curricula. It usually isn't central to professional development. In fact, it sometimes seems as if engineers have greater access to career remediation support than to resources for fundamental professional growth. Of course, our responsibility as engineering managers is to set a course for getting past this hurdle. Accordingly, this magazine's idealist editor has prepared a list of steps to help a leader and a profession expand.

### The EMR Editor's Top 10 List for Engineering Management Leadership Growth:

- 10. Produce what the market wants and needs. (This works for educators too!)
- 9. Nurture continuous improvement of products and production processes; keep current with technology and its applications.
- 8. Understand organizations—how to organize, motivate, and keep them efficient.
- 7. Understand how money flows—how particular expenses influence cash flow, margin, profitability, growth, and risk.
- 6. Study product markets and competition regarding risks and opportunities.
- 5. Understand business direction—long-term goals, strategy, plans, actions, and progress.
- 4. Nurture your own growth with new abilities, increased awareness, and increased vision.
- 3. Nurture the growth of others. It is about the only way to surely populate an outstanding organization.
- 2. Participate in the community. You need it even more than it does.
- 1. Contribute—everywhere you can, and far beyond any specific career agenda.

The point is that I believe engineers are net contributors to society and that contribution is the essence of engineering. It is a creative profession with tangible results. The demands of today's society and marketplace present engineering professionals with growth and leadership opportunities on a silver platter. These opportunities are only attainable if we adequately prepare for the responsibilities. I think that is what the stakeholders of this economy want.

## Congratulations to New Senior Members

The EMS Board of Governors congratulates and sends its best wishes to the Engineering Management Society's newly appointed Senior Members.

**Jeffrey A. Babcock**  
Freising, Germany

**Antonie M. De Klerk**  
Pretoria, Africa

**David M. Fadeley**  
Odenton, Maryland

**Glynnis A. Hirschberger**  
Saint Paul, Minnesota

**Jose Luis Kruyff-Meade**  
Fort Lauderdale, Florida

**Ekkannath Madthil**  
Leicester, England

**Gibson Madungwe**  
Ruma, Zimbabwe

**Loreen A. Ozolins**  
Albany, New Zealand

**Raymond T. Summerlin**  
Allen, Texas

**Godwin J. Udo**  
Antioch, Tennessee

*“Managers abound but leaders are still at a premium. Managers manage inventories, supplies, and data. They are numbers crunchers. Leaders catalyze, stretch, and embrace people. They provide transcendent goals, creating a motive-ational climate.”*

— Joe D. Batten, Author,  
*Tough Minded Leadership*

# Engineering Management Society

## History: Part 2

by Paul A. Willis, PE, VP Education

By 1967, the IRE Professional Group on Engineering Management (PGEM) extended its reach by establishing Chapters in the New York City Area, Washington, DC, and Los Angeles. PGEM also appointed contact chairmen for the 1957, through 1959 WESCON Conferences in California.

The geographical representation on the Administrative Committee was broad: New York City and Long Island 4; Camden, New Jersey 3; Boston, Massachusetts 3; Dayton, Ohio 2; Detroit, Michigan 1; Rome, New York 1; NADC Johnsville 1, Los Angeles California 6; Palo Alto 1; Falls Church, Virginia 1.

The defense industries were well represented and included Ford Instrument Co., Bendix Aviation, Sylvania, RCA, US Navy, Melpar, EECO in Santa Ana, General Radio, AIL, Hughes Aircraft, and Weston Electrical Instrument Corp.

In 1959 Al H. Rubenstein started his long tenure as Editor of the EMS

Transactions on Engineering Management remaining in that position until 1992. During his tenure he built the Transactions into the most-respected Engineering Management journal in the Western world. Dr. Dundar Kocaoglu, Portland State University, became the second Editor-in-Chief and continues to maintain the Transactions as the pre-eminent publication on engineering and technology management.

Historically, the positions of Editor of any of our publications, Secretary, and Treasurer of the Administrative Committee (now renamed as the Board of Directors, with President rather than Chairman) have been positions held for long times, enhancing the stability of the Board.

On the masthead of the September 1960 issue of the TPGEM is a pointer to the list of Affiliate Organizations of the PGEM, and the issue contains a form for becoming an affiliate member.

The Transactions on Engineering Management progressed from 1960 to 1962.

Volume 7, 1960, 31 papers, 175 pages  
 Volume 8, 1961, 37 papers, 217 pages  
 Volume 9, 1962, 40 papers, 190 pages

103 individuals authored these 108 papers; five of these authors submitted two papers.

There was still no central theme to the papers, but an ad-hoc, incomplete subject classification of mine yields the following classification:

Models. . . . . 28 papers  
 Management . . . . . 13  
 Organization Effects . . . . . 7  
 Engineering Managers . . . . . 6  
 Project Reports . . . . . 7  
 Status Reports . . . . . 22  
 Multiple Categories . . . . . 25

We shall look at paper Category densities as we move beyond 1962, in future reports.

As we locate more early documents of the EMS, I will correct any misinformation or misinterpretations. In the meantime I'll continue searching the records to reconcile the EMS history.

There are many of you who have participated in EMS over the years. If you personally can contribute any information or advise us on any past members who might know about the early days of EMS please contact me. I'll be happy to hear from anyone with EMS tales of those early days. My e-mail address is <p.willis@ieee.org>.

## Coach as Servant

Continued from page 5

Jennifer helped me in turn by discussing our coaching sessions with her colleagues. Her discussions encouraged them to seek similar coaching. As this team matured, I found time to focus on longer-range goals and plans for the group. This is time that would have otherwise been spent in meetings to support my staff.

This following table summarizes the risks and gains when considering a servant-coach approach to managing.

|      |         | RISK  | GAIN   |
|------|---------|---|--|
| ROLE | COACH   | "Egg on your face" in the short term. Perhaps look bad to a controlling boss. | Accurate information, improved performance, and better planning.       |
|      | CONTROL | Reduced performance improvement   | Feel in control in the short term. Looking good to a controlling boss. |

This table was adapted from a book that I highly recommend to anyone considering trying to change or enhance their style of management in the area of team development and coaching. The book is "Managing in the New Team Environment" by Larry Hirschhorn and was published by Addison-Wesley; Reading, Massachusetts; 1991.

I hope that I have taken you through a series of scenarios to help you become a more effective man-

ager in a team environment. I would enjoy having you comment on this series.

## From the editor

by Gus Gaynor

Email, email, email ... Has email made us more productive? There is no doubt that email provides us with ease of communication and rapid response assuming that the receiver responds in a timely manner. There is no doubt that using email instead of the more traditional means, has led to a deterioration in communication quality — grammar, structure, and incorrect spelling even with the spell checker.

Email certainly provides benefits in broadcasting information, increasing opportunities for interactive communication, allowing an almost instantaneous response, and of course eliminating the typewritten letter, envelope, and postage stamp. But have we learned how to use this new communication medium effectively and efficiently? Has it affected our work habits?

I support the use of email 100 percent, but like any performance improvement activity it must be used effectively, efficiently, and provide an economic advantage. Email is not a communications panacea; it's another way to help us communicate in a timely manner.

### Some personal observations

- Email culture — Email has promoted a culture where too often everything becomes urgent; no need to plan ahead, just send an urgent email.
- Immediate response — Expectations of an immediate response — “I didn't let you know some time ago that I needed some specific information so drop what you're doing and do it or get it.”
- Hunt and peck — Hunt and peck that request or response; high salaried professionals hunting and pecking their way through a document. Perhaps typing 40 or 50 words per minute should be a graduation requirement.
- Large documents — Download that 50-page document to 50 people; now we need 50 printers chugging along. It may have been more efficient to make the 50 copies and mail them.
- Urgency — Sending a lengthy report via email with a sense of urgency 60 or more days after the issues were resolved.
- Reaching decisions — Reaching decisions or conclusions via email — how many transactions are required to gain the input from several people and reach a decision? Back and forth and back and forth and back and forth ... A teleconference may be more effective. Perhaps a face to face meeting may be more appropriate, and recording the important findings and decisions.
- Interruptions — Constant interruptions to see if there's a message. Maybe email should be checked twice a day or at some specific intervals as regular mail deliveries were years ago.
- Copy lists — Put everyone on the copy list; it doesn't cost anymore and someone might be interested in the topic. Is it necessary to communicate more than what is needed and to those who have a need for the exchange?
- The *Respond All* button — Click that *respond all* button when only one person needs the response; it doesn't cost more except for the time required by the people who don't really *need to know*.
- Verification — Not verifying receipt of an important message — computer networks are not infallible they do miss a bit or a byte.
- Managing email — How do you manage your email — act on it when it's opened or set it aside for a later time. Unfortunately, too often the message is lost. The message may accidentally be deleted and then must be resent.
- Priority lists are important but an email that requires a response or some type of action needs attention; others may be depending on that response. Have we substituted the email shuffler for the paper shuffler?

We have all kinds of electronic toys for accessing channels of information, scheduling, and tracking events but too often a timely response appears to be taking a back seat.

Email provides us with countless opportunities to improve performance. We need to learn to use email effectively and efficiently.

If you have any suggestions for improving the effectiveness and efficiency of email please send your recommendations to [g.gaynor@ieee.org](mailto:g.gaynor@ieee.org).

# EMS

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<http://www.ieee.org/ems>

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### Newsletter Deadlines

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|----------------|----------------|
| Fourth Quarter | 1 October 2000 |
| First Quarter  | 7 January 2001 |
| Second Quarter | 3 April 2001   |
| Third Quarter  | 30 June 2001   |

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