

Engineering Management



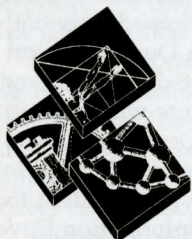
NEWSLETTER

The IEEE Engineering Management Society Newsletter

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ENGINEERS
Turning Ideas
Into Reality.

The Awards Committee of the Engineering Management Society is pleased to announce that Dennis Bodson has been chosen as the 1995 IEEE-EMS Engineering Manager of the Year. Mr. Bodson's award cites "For leadership and management in the development of innovative technology used in automating wireless and radio telecommunication systems."

As Deputy Manager of the National Communications System (NCS), Mr. Bodson has demonstrated exceptional vision, leadership and creativity in advancing the mission of his organization and improving the cost, quality and productivity of information sensitive industries.

Mr. Bodson serves as a mentor in the Defense Information Systems Agency/National Communications System (DISA/NCS) Intern program. The objective of the program is to infuse new blood and skills into the DISA/NCS environment through the employment of recent college graduates in the engineering and computer science disciplines. In addition, the Intern program provides for training opportunities to enhance the growth and skills of the individual together with a career enhancement path to the journeyman level for a specific area.

Mr. Bodson has served as Chairman of the Federal Telecommunications Standards Committee (FTSC) where he significantly contributed to the development of interoperability standards for telecommunication systems implementing a broad range of technologies including facsimile, video conferencing, land mobile radio, meteor burst and HF radio transmission.

One example of Mr. Bodson's vision is in the use of auto-

1995 Engineering Manager of the Year: Dennis Bodson



Dennis Bodson

rated channel sampling and channel selection to make HF radio cost effective. Under his leadership, a development program led to the standardization and implementation of technologies to automate HF link establishment permitting operation by individuals with little or no communications training. Over 20 U.S. radio equipment manufacturers have implemented the technology leading to a greatly expanded usage of HF radio systems.

Dennis has provided direction and technical contributions to research and engineering leading to the development of user-oriented technology independent performance parameters and measurement methods for data communications services.

A long time member of IEEE, Dennis Bodson has served in a variety of positions in RAB, TAB and USAB. He is a member of the IEEE Standards Board and has been on the Editorial Board of Spectrum. He is an accomplished author, and was elected to the grade of Fellow in 1992 for outstanding leadership and engineering management in the development of international standards relating to facsimile and associated technologies.

A graduate of the University of Southern California (M.P.A) and Catholic University of America (B.E.E., M.E.E), Mr. Bodson will be presented the 1995 Engineering Manager of the Year award at the Spring EMS Board of Governors meeting in Washington, D.C. at the Sheraton Hotel in Crystal City on Saturday evening, April 24, 1996.

Please join with your Board of Governors in congratulating Dennis on his outstanding professional and IEEE contributions, his diligent service, and for being a model of leadership and vision.



ENGINEERS
Turning Ideas
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Student Activity Coordinator Needed

The Engineering Management Society is looking for Society member volunteers to lead and coordinate the student activities of the society. For more information contact Dave Kemp (204) 992-2494 or via e-mail at: d.kemp@ieeee.org

EXPERIENCE NOT ESSENTIAL

Volunteers are the backbone of the Institute, providing programs, conferences, publishing, and leading policy issues. EMS has a number of opportunities for individuals to lend their talents and creativity; some of these are: o conference planning and organization o education activities o student activities o membership development o chapter leadership and liaison o publications o awards o Internet presence

Volunteers laud the IEEE experiences they gain as contributing to their career development as well as the satisfaction of accomplishment.

If you are interested in learning more about getting involved contact Dave Kemp VP Member Relations via e-mail at: d.kemp@ieeee.org (204) 992-2494

Newly Elected EMS Senior Members

Patrick T. Harker	Philadelphia, PA	(Region 2)
Matthew O'Keefe	Plymouth, MN	(Region 4)
Nathan O. West	Benbrook, TX	(Region 5)
Mohamed E. Elsunni	SAUDI ARABIA	(Region 8)

Congratulations from your Board of Governors to you all.

Are YOU qualified? Call or write IEEE for a senior member application and see YOUR name in this column. Special thanks to IEEE Staff member Deana Simonetti, Society General Activities, who compiled this information for your newsletter.

Management Ideas Part 8 of 8 Getting the Job

By Robert Bishop, Member,
EMS Board of Governors

Part 7 suggested questions to ask in collecting information. As a follow-up, we'll look at questions to ask, once you meet fact-to-face with the person who has the "Power to Hire."

Once you have your act together with lots of written summaries on issues, and written answers to the "most likely to be asked" questions, you need to define a strategy. The interview, whether it occurs at a cocktail party or across a polished desk, is still an interview.

Here are the questions you need to carefully answer with prior preparation:

1. Why are you here? What attracted you to this organiza-

IEEE goes for the GOLD New Program Addresses IEEE Growth and Retention

A new program to address IEEE membership growth and retention has been initiated. Known as GOLD (Graduates OF The Last Decade), the concept creates a new Section level entity whose committees will be run by and for recent graduates.

The program stems from two sources. Firstly, student and recently graduated members were expressing difficulty at bridging the world as an IEEE student to that of Member. Several factors contributed to this, not the least of which were changes of address and generation differences. Secondly, Institute retention of graduates four years after graduation was only 17%. It is felt a contributor to this is a shortage of local programs for this affinity group of recent graduates.

In June of 1995 the IEEE Membership Development Committee (MDC) appointed an ad hoc committee to address these issues. One recommendation was to pilot GOLD Section level committees. At the November 1995 Regional Activities Board, the concept was approved and funds allocated to foster the pilots. Pilot programs will commence immediately both in North America and elsewhere worldwide. During the summer of 1996, the program will be evaluated, refined, and launched in November 1996, as an Institute-wide activity during Sections Congress '96 being held in Denver, Colorado.

The IEEE-wide GOLD initiative is being spearheaded by YOUR Engineering Management Society Vice-President for Member Relations Dave Kemp. For more information Dave can be contacted at <d.kemp@ieeee.org> or (204) 992-2494.

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tion? Be prepared to answer with enthusiasm. You need a credible answer.

2. Exactly what are you going to do for me? Aha! The moment of truth. Remember all that information you collected in Part 7? Write and rewrite summaries of what you will do, so you have short, spontaneous answers when you meet face-to-face.

3. What will it cost me? Tough decision. Decide on a strategy of compensation with every conceivable alternative you can think of.

Written preparation can really pay off.

Bob Bishop can be reached at 903 274-7661 (day) or 703 978-7422 (eve). Or via the Internet at <r.bishop@ieeee.org>. This is the eighth and final article in a series of eight articles.

EMS ENGINEERING MANAGER'S NOTEBOOK

Managers in White Hats

by Dr. Stephen H. Unger Member,
IEEE Ethics Committee

The newly formed IEEE Ethics Committee is formulating proposals to enhance the IEEE's procedures for promoting the ethical practice of the engineering profession. Of particular interest is support for engineers who are threatened by their managers with punishment for efforts to abide by various provisions of the IEEE Ethics Code. A typical case might be a situation in which a software engineer resists management pressure to sign off on a critical program that has not been adequately tested.

Since individuals are at a great disadvantage when dealing with organizations, it is important for the IEEE to provide backup for conscientious engineers. One way to do this is to investigate carefully specific cases and then, if the results confirm that an engineer has been abused, to publish a report exposing the culpable parties. This is one of the functions of the IEEE Member Conduct Committee.

It is not surprising that those IEEE members who are themselves engineering managers, may be uncomfortable with this process when they first hear about it. Under the impression that the issue is one of engineers versus managers, they may oppose such IEEE involvement in ethics support. But, upon closer examination, a rather different picture emerges.

A study of real cases and of the principles involved makes it clear that ethics support measures are very much in the interest of responsible engineering managers. There are several reasons for this. First of all, a major consequence of the measures referred to above is an environment in which engineers are encouraged to approach their work in a more professional manner. This means, among other things, considering more carefully the contexts of their assignments. As a result, they are more likely to anticipate and eliminate problems that might otherwise be costly or embarrassing to their organizations (and hence to their managers).

Another reason is that managers sometimes feel compelled to take short cuts that they are uncomfortable with because, if they don't, a less scrupulous competitor may do so and thereby gain an unacceptable advantage. If ethics support measures discourage such unfair competition, then the pressure on decent managers is reduced.

A third reason why ethics support measures benefit responsible engineering managers is perhaps the most obvious one. Engineers with management responsibility are even more likely than line engineers to find themselves in situations where they are being coerced to act in conflict with the dictates of their consciences. Consider the following real case...

The cleanup operation subsequent to the 1979 Three Mile Island (TMI) nuclear reactor accident was a major project that involved many hundreds of people. It ultimately cost over a billion dollars. Laurence King, director of site operations at TMI for General Public Utilities Nuclear (GPUN), was an experienced engineer, described by a previous employer as "frank, hard-nosed, operationally oriented". Nearly 300 people were under his supervision.

In 1982, King observed that, apparently in an effort to meet unrealistic schedules, certain high level managers, particularly some on the Bechtel Corporation team (which shared responsibility for the cleanup), were cutting corners. The

principal problem area involved the polar crane, which had been damaged in the accident. It had to be refurbished so it could be used, among other things, to lift the 150 ton reactor head. A crane failure in the course of such an operation could cause serious releases of radioactive material. Richard Parks, a senior engineering employee of Bechtel, who was seconded to King, confirmed King's concern that the crane repair process was not being carried out with due regard for standard engineering practices and NRC (Nuclear Regulatory Commission) regulations. Modifications detrimental to safety were being made, and appropriate tests were being omitted.

Further confirmation that all was not well with the polar crane came from another subordinate of King, plant engineering director Edwin Gischel. He too was an experienced engineer (a PE) with an extensive background in nuclear powered submarines as well as in commercial nuclear power plants. In February of 1983, both Parks and Gischel wrote memoranda documenting their misgivings about the polar crane problem. King concurred, but when he tried to remedy the situation, he encountered resistance, not only from Bechtel, but from GPUN's upper management.

King's immediate superior urged him to fire Gischel. King declined to do this, expressing support for Gischel's position. Next came a series of attacks on engineer Parks and the two managers. Parks was given punitive work assignment changes by Bechtel, and threats were made to transfer him off the site. False and malicious information of a personal nature was indirectly conveyed to him. His apartment was broken into. Nothing was stolen, but his personal papers were rifled.

Gischel, in mid 1982, had suffered a mild stroke from which he had substantially recovered within a few months. Shortly after he submitted his memorandum on the polar crane, a high level official of GPUN, using confidential medical information, tried to pressure him into submitting to neurological examinations. On the advice of his physician, Gischel declined. He was subsequently transferred to a non-nuclear subsidiary of GPU (General Public Utilities, parent company of GPUN).

At roughly the same time, King was suddenly charged with a conflict of interest and suspended. The charge was based on the fact that, for years, King had operated a small consulting firm. Without specifics being given, he was accused of having hired away GPUN employees. A month later he was fired. At about the same time, Parks was first removed from the crane project and then suspended without pay. Subsequently, he was transferred by Bechtel to a coal gasification plant in the Mojave Desert and then fired 6 months later.

At various points in this process, the engineers involved appealed to the Nuclear Regulatory Commission (NRC) for support. NRC investigations generally confirmed the charges made by King, Gischel, and Parks. Subsequently, the NRC levied fines against GPUN for improper treatment of Parks and for violations involving the polar crane. However, these were too little and too late to be of much help for the engineers. The relevant engineering societies did not become involved at all in the case. The result was that two engineering managers and a line engineer, all conscientious and highly competent men, were driven out of the nuclear power industry.

(continued on page 5)

Challenges to Engineers and Engineering Management

By Gerard H. Gaynor, VP-Publications
EMS Board of Governors

Competing in the global marketplace requires more than technological competency. It requires managing technology from an integrated and business perspective which in turn involves managing the organization's resources and providing an infrastructure that allows those resources to be used effectively and efficiently. Engineers and engineering managers play a major role in this competitive business environment.

Meeting the business requirements of a global competitive environment requires engineers and their managers to focus greater attention on:

- Creativity, Invention, and Innovation
- Learning and Knowing
- Competence
- Business Focus
- Bring Back the Slide Rule Mentality

These five elements seem to be missing from much of our current discussion about the plight of the engineer in view of corporate downsizing and the significant changes in direction and reductions in government spending related to technology.

Creativity, Invention, and Innovation

Creativity, invention, and innovation lie on a continuum. These three words define the engineering profession. If we define innovation as invention plus commercialization or implementation, then creativity and invention are the precursors to innovation. While these three activities define engineering and ultimately determine organizational success, little effort is focused on these activities by organizations, academia, and most importantly by engineers and engineering management.

Organizations often place unnecessary roadblocks for engineers to demonstrate their creative talents. Engineering education seldom focuses on this continuum that requires some level of engineering breadth. Engineers, for whom self-motivation is an absolute necessity, become comfortable in a paternalistic environment and ignore the implications of such an attitude on future growth opportunities. Engineering managers too often become functionaries dealing with paper work, going along with the flow, and failing to emphasize and instill mental attitude that demands a continuous effort in pursuit of creativity, invention, and innovation. That continuous effort must include expanding the breadth of knowledge of the engineer.

A lack of breadth of knowledge limits the ability of an engineer to create, invent, and innovate. Without that breadth of knowledge, the powers of observation and synthesis are severely limited. As an EE what do you know about mechanisms, optics, and material processes? What do you know about viscosity, surface phenomena, and heat transfer? What do you know about measurement and control systems? Are you able to communicate your ideas without the help of the computer? These are only example of some of the breadth that is required to function as an engineer rather than as a technician. These are just a few examples of technologies that provide additional breadth and additional depth of understanding.

I am reminded of an admonition given to me during my

first year of employment as an engineer. I was a newly minted EE from the University of Michigan in 1950 with a major in Industrial Electronics. In my first position as an engineer I focused much of my attention on how electronics would transform the world. A senior executive called me aside one day and suggested that I remember one thing: That electronics is only a means to an end. The output would always result in some form of mechanical motion. That admonition changed my complete approach to electronic circuit design. While the circuit design was important, it must be linked to some end result - it must be linked to the system. The circuit design was not the end result. I ask myself today, what would the world be like if computer science engineers took into account the system requirements rather than their isolated piece of the action? Think about it.

Learning and Knowing

Since Senge published "The Learning Organization" much has been written about the topic. But what has really changed. Another guru has been enthroned and more new so-called education takes place without any significant positive impact.

The success of any organization depends on the learning experiences of its engineers and how that learning is communicated to others. That learning can take place in many different ways. Engineers must learn to take a proactive stance - take the initiative - ask the right questions - create some cognitive dissonance. It is important to recognize the value that is being added through that organizational learning. Yes, learning is important but it depends on the significance of that learning in a specific context.

Knowledge arises from learning but knowledge by itself without practice of that knowledge slowly becomes a questionable commodity. I suggest that we begin thinking in terms of "knowing" rather than in terms of "knowledge." Knowing implies that one has experienced the use of knowledge - one has practised knowledge - and now understands what can be accomplished with that knowledge and its limitations. Practiced knowledge then becomes "knowing." Learning about our most sophisticated technologies may constitute knowledge, but not knowing. That learning must be practiced.

Competence

Competence in what? Engineering competence is an elusive characteristic. Competence today may be lack of competence tomorrow. A major problem exists for engineers who have spent their careers in a narrow specialty or have failed to keep up with changing technologies and societal needs. Competence in engineering requires competence in a specialty and at the same time competence in seeing and contributing to the big picture - competence in knowing the relation between the pieces and the whole - competence in related technologies and practices - competence in the needs of the business.

Competence is gained through learning and knowing from practice. Competence that systems from engineering as a vocation and as an avocation provides unlimited potential. Competence that involves not only problem solving but perhaps more importantly competence in observation, synthesis, and problem finding generates the added value required to sustain performance.

Business Focus

Engineers work in a business system not for the purpose of enhancing the engineering profession but to provide products and processes that meet customer needs/wants. That work can involve the many aspects of engineering from highly theoretical research, to the factory floor, and to customer support. Elegant solutions provide little benefit unless those elegant solutions meet the customer performance and cost requirements.

The business of engineering is business performance and this requires a shift in mental attitude. Call it a mental paradigm if you like, but that mental attitude must encompass the system. Engineers must realize that there are no engineering successes and business failures. Engineers are part of that organization and cannot sit by the sidelines only concerned about engineering. Engineering is a practitioners discipline in business context and thus requires an understanding of and involvement in the business.

Bring Back the Slide Rule Mentality

I am not being facetious when I make this suggestion. I suggest this is only to make a point. There is no doubt that computers are a valuable and effective tool. As engineers we are fascinated by these marvels of modern science and engineering. They have provided us with tools to explore opportunities in constantly more complex technological environments. Too often these tools are abused. They are used indiscriminantly without any prior thought.

Let's make the assumption that we only have the slide rule for computation and then use the computer. The slide rule era forced engineers to do considerably more thinking before acting. Those calculations were laborious and time consuming. Much thought was required to concept alternatives and select those that would be considered and evaluated. We developed rules of thumb. We made assumptions. We were plagued by the same problems that engineers face today: Missing pieces of information that increased the uncertainty and risk.

Today we have computer capabilities that once were only a dream, but are we using them effectively and efficiently? Realistically, how many avenues must we explore? How many different models are we going to build? How many simulations are we going to process? How much have we benefited from considering all of these permutations? Are we receiving a return on our investment? In our search for optimized solutions have we lost sight of the need for injecting our own judgement? This is not a criticism of the use of computers but a suggestion to use them intelligently. We do

not need twenty megabytes of hard drive space to add 2 + @, we do not even need a slide rule. We do not need to explore a multiplicity of designs simply because the capability exists. The ability to explore many designs provides significant benefits. However, at some point the human interface must decide just how many alternatives will be developed and evaluated.

Who is Responsible?

Who is responsible for meeting the requirements relate to Creativity, Invention and Innovation; Learning and Knowing; Competence; Business Focus; and Bring Back the Slide Rule Mentality?

While individuals bear the primary responsibility for the growth in their professional careers, organizations and their managers share in that process. Managers share in the process through their interaction, their coaching, their educating, and through an environment and infrastructure that allows engineers to fulfill their personal career expectations as well as those of the organization.

The interaction, coaching, education, and performance evaluation of engineers by managers places a major responsibility on managers. In the glory days of Management by Objectives (before human resource department turned the practice into a paper mill) I kept reminding managers that they played a major role in the objectives of those reporting to them. They, as managers, could not sit on the sidelines and only serve as judges. They were part of the objective and if the objectives were not met, they needed to ask themselves some questions.

While it is a simple matter to evaluate performance of engineers who meet expectations, evaluating below-par performance poses significant problems for most managers. While engineers are responsible for their professional growth, keeping engineers on the payroll who are becoming obsolete or not meeting performance expectations, after being given an opportunity to improve, cannot be condoned. Such disregard of human potential is perhaps the most grievous management malpractice.

Gerard H. (Gus) Gaynor, a regular contributor to your newsletter, is your Engineering Management Society Vice-president for Publications, and member of your Board of Governors. He is Editor of the Handbook of Technology Management and can be reached at G.H.Gaynor Associates, Inc., 1300 Nicollet Mall, Suite 5168, Minneapolis MN 55403. His phone number is (612) 332-8822, FAX (612) 343-3299, and e-mail at g.gaynor@ieee.org. Gus welcomes your comments and discussion on his ideas.

Managers in White Hats *(from page 3)*

(King later received some monetary compensation from GPUN in an out of court settlement. He wound up as an employee of the NRC. Parks established a small business providing services to manufacturers using precision tools.)

Laurence King and Edwin Gischel are by no means the only examples of outstanding engineering managers whose careers were damaged as a result of their having taken principled positions. The assumption of managerial responsibilities by engineers does not lessen their need for professional society support when they feel the need to take principled stands in conflicts with "their" managers.

Steve Unger, is a professor in the Computer Science Department of Columbia University in New York. In addition to being a member of the IEEE Ethics Committee and a past-president and founding member of the IEEE Society on Social Implications of Technology AdCom, he is currently serving IEEE, TAB and USAB in his capacity as Director, IEEE Division 6. The above case study has been abstracted from the second edition of his book "Controlling Technology: Ethics and the Responsible Engineer" (Wiley, 1994). Steve can be reached via e-mail at: s.unger@ieee.org.

Managing with Strategic Conversation (or simply: Advice on Advice)

by Chuck Markee
Chairman, Santa Clara Valley EMS Chapter

Frank came back to work after a nasty bout with influenza. I saw him in the hall and we stopped to talk. He told me about his illness. He mentioned that because of his illness, he hadn't had a cigarette for two weeks. I responded, "don't start". Frank said, "What do you mean?". I repeated, "Don't start. This is going to be your easiest opportunity to give up smoking."

Four years later, Frank and I were talking and he said, "You know, this is the anniversary of the day I stopped smoking". I said, "Congratulations!". He said, "Yes, it has been 4 years and do you remember the day?" "No", I said. And then Frank reminded me that it was the day that I had said to him, "Don't start!"

If you were to ask me if I give advice, I would categorically deny it. Yet it's obvious that I do, that I have and that in some cases it has made a difference in someone's life.

The generally accepted view of advice is that it is unwelcome. I believe this to be untrue. What is true is that unsolicited, arrogant directives are not only unwelcome but frequently invoke an angry response. It's easy to spot these because they almost always begin, "You should ...".

Advice, solicited or unsolicited, is information passed between people with different backgrounds, ages, perspectives or experiences. It has intrinsic value. We seek it in articles we read. We seek it in self-help books. We pay to get it from the mental health industry. Advice is one type of communication that comprises our human heritage. We all share in the responsibility to pass on what we learn to subsequent generations.

Once you are convinced that advice can be a positive force, the challenge becomes finding a way to be an effective advice giver. You may find yourself in this role as a parent, as a friend, as a teacher, or even with strangers. You will be in this role as an employer or manager. When this opportunity arises, it can be an important responsibility and it makes sense to be prepared for it.

Being prepared, means having the skill to give a person the valuable information s/he needs in a form that enhances its reception and allows the person to assimilate it as their own. I am suggesting that you can be more successful paving the way for the advice seeker to reach the information s/he needs rather than giving them the prepackaged answers.

Let's begin with a basic working premise that people already have all the information necessary to solve the problem they bring you. They know their environment. They know their abilities. They understand more about the details of their own situation than you do. Furthermore, they really want to make their own decision. They are just "stuck".

The tools I suggest are really a form of strategic conversation. Take the following example. My daughter comes to me suffering over her relationship with friends that she has worked with for years. I listen carefully and thoughtfully to her problem. Listening is a form of respect and caring and it gives her the message that I care about the things that concern her. I ask about the problem relationship. I also ask about her life in general, and what she is doing. I want her to recognize that the problem has gained more importance than it deserves

in her life but she has to recognize that herself. The only way she can do that is to relate the other things she is doing and see for herself what the priority of the problem really is.

I also want her to focus ahead instead of behind. So I ask her about her plans. She hasn't really thought about plans so I begin an impromptu "pretend" planning session. I describe several scenarios and ask after each one if it matches what she wants. Some get a dramatic NO, and others begin a discussion. The end result is (1) we communicated and I know about her and what she is thinking (2) she has heard some examples of plans and most important (3) she now has a small kick start toward thinking about what she wants to do, who she is and what place the current problem has in her future. I have advised her. I did not tell her what she "should" do. But, she knows that I expect her to think beyond the current problem and she has some new perspectives to use in thinking about the problem.

As a manager, this concept of "paving the way" can be a powerful form of advice. With my daughter, I was limited to paving her way to think about her life with a different perspective. As a manager with an employee you are in a stronger position to help.

Let's call this employee Peter. Peter has a "gofer" job and he is very good at it, but he is at the limit of his growth in this position. He brings this problem to me. I begin by telling him that he has the answer, and that we may be able to uncover it by talking through some ideas. Note that I've given him contradictory information, i.e. (1) he has the answer and (2) he doesn't have the answer. Whatever results from our conversation will be his, because I've already told him that he has the answer. At the same time I am positioned to counsel him because I told him he doesn't have the answer.

We have a strategic conversation. We lay out the facts; education, job related achievements, capabilities and any positive attributes I have seen. We talk about Peter's wish list. What does he want to do if anything were possible. We talk about the possible directions and their difficulty. We sort out the depth jobs; technical specialist, technician, programmer, engineer and the breadth jobs; management, administration, facilitator. This can be one session or many. To make this long story short, Peter choose programming as a possibility.

As Peter's manager, I can authorize training for him. A little research, a few phone calls, and a C-language programming class is available. The rest is up to Peter. But Peter now knows that my expectation is that he will use this opportunity to explore programming as a career. My support represents my advice, but I never told him what he "should do".

My hope is that these ideas will enable you to help someone who is stuck. As with each person in the cases above, I know that you have the right answer for your own management situation. Only you can shape your tools so they are effective with the person you help. You may be able to "pave the way" for someone who does NOT need a "should...." message, but does need your advice.

Advice and/or comments are welcome; e-mail <c.markee@ieee.org> Chuck Markee, VOYSYS Corporation, Tel (510) 252-1100 ext 676; FAX (510) 252-1101 E-mail at c.markee@ieee.org



IEMC '96 Vancouver Special Events and Features Update

Pre-Conference Sunday Evening Reception -
18 August 1996

Plan to start off your IEMC'96 Conference with an informal evening at the Renaissance Vancouver Hotel. Join fellow delegates, speakers and EMS Officers at the Headquarters hotel, Sunday 18 August for an early evening stand-up affair with complimentary hors d'oeuvres and a no-host bar. The idea is to provide enough to eat so that supper can be foregone, making possible an earlier start on a first evening look about town.

Monday Night planned to be a Spectacular Social Event!

Your major conference event is scheduled for Monday evening, 19 August, with an evening dinner cruise up the mountain inlets near Vancouver with towering peaks on one side and the Vancouver skyline on the other. The menu will include British Columbia's world-reknowned barbecued salmon. Clear skies are planned and the return trip will be by moonlight! This event that has gotten rave reviews by all who have participated in the past, will be restricted to 100 persons on a first-come-first-served basis.

Not in the mood for a cruise? You can always select dinner at the Grouse Nest restaurant on Grouse Mountain looking down on Vancouver from 4000 feet above. Access is by gondola from the foot of the mountain. Your choice of either of the above is guaranteed to be remembered as the social highlight of the conference.

IEMC'96 Program to top 100 Paper Presentations

Program Chairman, Dr. Dundar F. Kocaoglu of Portland State University indicated that at the rate he is receiving papers, IEMC'96 is assured of accepting over 100 papers for the technical program. Roughly half of the papers have been coming from EMS author address lists with the other half from e-mail announcements to researchers over the Internet. Based on the quality of the papers he has already seen, Dr. Kocaoglu said "I am confident that we will have a very good conference. I suggest that Authors can e-mail any last minute submissions to Ann White."

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IEMC'96 On the World Wide Web:

IEMC'96 has a Web Page at:
<http://www.sasknet.com/users/iemc/>
and be sure to also look on the IEEE Conference Web Server:
<http://www.ieee.org/conflinks.html>

For more IEMC'96 information or registration contact Bruce Prior via e-mail at: Bruce.Prior@BCHydro.bc.ca

On the Web ...

EMS VP Wade Shaw, Professor and Chairman of the Florida Institute of Technology Engineering Management Program shares with us the following sites:

World Wide Web Virtual Engineering Library Pointer:

<http://arioch.gsfc.nasa.gov/wwwv1/engineering.html>

Nahum Gat of Opto-Knowledge Systems, Inc. adds a pointer to the TechExpo Web site for hi-tech and the engineering sciences:

<http://www.techexpo.com/>

Ed Palacio, Director of Engineering of AIL Systems, Inc., and Chairman of the Electro'96 Program Committee, suggests that we all log into the IEEE Electro'96 Conference site and look up the offerings by several EMS Board Members, Wednesday 1 May 1996:

<http://members.aol.com/ElectroXpo>

Your Engineering Management Society has been experimenting with several Web sites. Our first site:

<http://naftalab.bus.utexas.edu/ieee-ems>

was offered to us by EMS Member Walt Tribula and has been at the University of Texas since July 1995. Thanks for all your help and support Walt. It is being replaced in Spring 1996 by our official EMS Web Site at Pratt Institute at:

<http://sils.pratt.edu/~ems/>

Our annual conference, IEMC'96 has a Web Page at:

<http://www.sasknet.com/users/iemc/>

and also on the IEEE Conference Web Server:

<http://www.ieee.org/conflinks.html>

Check these sites out — we think you'll enjoy them.

Engineering Management. Applications are invited for a new position as the Johnson Professor of Engineering Management at Harvey Mudd College. Additionally, depending upon qualifications and field of interest, the candidate may also receive a visiting appointment at the California Institute of Technology to teach at that institution. Candidates with backgrounds in areas such as the study and practice of modern engineering management, technology management, product development, or new ventures are sought. As a member of the Engineering faculty, the successful candidate will be expected to develop new courses, to teach, as appropriate, established courses in the engineering curriculum, and to supervise industrially sponsored projects in the Engineering Clinic. Candidates for all levels of appointment will be considered. Ph.D. and industrial experience are preferred. While primary emphasis in faculty evaluation is on excellence in teaching, professional growth and development through research or consulting is expected. Excellent opportunities exist in the local area. Send complete resume along with names of references to James E. Monson, Chair, Johnson Search Committee, Harvey Mudd College, Engineering Department, 301 East 12th Street, Claremont, CA 91711. Consideration of applications will begin March 1, 1996 and continue until the position is filled. As a member of the Claremont Colleges, Harvey Mudd College is primarily an undergraduate college of engineering and science. The Engineering Department offers a broadly-based curriculum leading to non-specialized bachelor and masters degrees. Harvey Mudd College is an equal opportunity employer and is particularly interested in receiving applications from persons historically underrepresented on college faculties.



IEMC'96

The IEEE Engineering Management Society 1996 INTERNATIONAL CONFERENCE ON ENGINEERING & TECHNOLOGY MANAGEMENT

August 18 - 20, 1996 in Vancouver, B.C., Canada
Renaissance Vancouver Hotel



MANAGING VIRTUAL ENTERPRISES: A Convergence of Communications, Computing and Energy Technologies

This year's International Engineering Management Conference (IEMC '96) theme is Managing Virtual Enterprises. The goal of the IEMC '96 is to be the bridge between cutting-edge management research in virtual enterprises and the reality of being in business and making a profit. The conference aims to bring together researchers and business professionals and managers to provide an atmosphere of mutual learning, sharing of concerns and new thinking. An example of this goal is in our keynote speaker selections: Al Erisman, Boeing Company, will speak about Information Technology and Boeing 777; as well, Dean Hawkins, Georgia Institute of Technology, will provide a talk about Educating the Managers of Technology in the Virtual Enterprise.

Some of the sessions being considered include:

- Information/Knowledge Management
- International Aspects
- Manufacturing Management
- People and Organizations
- Product Management
- Project Management
- Quality Management
- R&D Management
- Resource Management
- Service Management
- Strategic Management of Technology
- Technological Innovations
- Technology Management
- Virtual Corporation

Spouses Program

Spouses and companions are always welcome at IEEE EMS Conferences and IEMC'96 is no exception with continental breakfast social gatherings on the Monday and Tuesday morning. Vancouver IEEE women will be on hand each morning to describe all the attractions in Vancouver and to take groups on shopping and sight-seeing tours. There will be giveaways and door prizes each morning as well. Your tour might include Vancouver's best known gardens, the best shopping centres, and perhaps a day trip up Howe Sound to Squamish aboard the steam train, the Royal Hudson.

Delegate Info Centre

There will be an information booth at the hotel, manned by local IEEE members, to help delegates with their entertainment, travel and tour options in the Greater Vancouver/Victoria areas.

Conference Fees (U.S. Dollars)

	Advance*	Regular
IEEE Members	\$320	\$375
Authors	\$320	\$375
Non-members	\$400	\$475
Students	\$75	\$100

*Advanced fees must be received by May 31, 1996.

Tutorial fees:

Half-day, including a coffee break and handouts	\$ 95
Full-day, including two coffee breaks, lunch and handouts	\$195

Inquiries

For all inquiries regarding registration please contact:
Bruce Prior, System Engineering Division, B.C. Hydro,
6911 Southpoint Drive, Podium A03, Burnaby, B.C. V3N 4X8
Phone: (604) 528-2736 - Fax: (604) 528-2944 or (604) 528-7945
E-mail: Bruce.Prior@BCHydro.bc.ca

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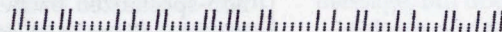
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Newsletter Deadlines

Month of Issue	Quarter	Deadlines
Jan 1996	First	28 February
Apr 1996	Second	30 April
July 1996	Third	3 July
October 1996	Fourth	16 September



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