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Contemporary Cryptography

"Contemporary Cryptography" is the title of a talk to be given by David Kahn at the September 24th meeting of the IEEE Joint Computer and Communications Chapter of the New Jersey Section.

Swapping Technical Info With Russia

At the September 16th meeting of the New York, New Jersey, and Long Island Chapter on Information and Measurement "The Difficulties Encountered in the Exchange of Technical Information With Russia" will be discussed.

About The Talk

What are the effects of technology transfer abroad and its influence on the national economy, scientific development, and international relations? How well do we know about the level of activity, and methods of technology transfer will be emphasized in this talk. Various opinions of other experts will be highlighted and compared to the author's.

Do you have a background in technical communication? Do you know about the exchange of technical information in the Soviet Union? Do you have any personal experience in the field? Please share your thoughts and experiences with us. We would love to hear from you.

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ANNUAL MEETING—continued

yet recognize that automated management cannot enhance productivity. We must somehow impart to those with business, administration which teach short-term optimization and automated management that managers must be knowledgeable about what happens on the manufacturing floor. Furthermore, top managers should be literate in technology and should recognize and benefit from the value of individual contributions.

The report of the President's Commission on Industrial Competitiveness, chaired by John Young, Chairman of the Board of Hewlett-Packard, made many recommendations, including the creation of a federal Department of Science and Technology and the development of a focal point for foreign trade by creating a Federal Department of Foreign Trade and Investment. The government has been asked by many for a trade support in support of the trade proposal, particularly as addressed in Senator Roth's bill.

We also learned from our colleagues that engineers must be coupled with the needs of the marketplace. We heard from Mr. Udall, Vice President of NRE's Asian operations, that 40 percent of NRE's manufacturing engineers are in direct contact with customers. Engineers at Siemens and Philips also relate closely to the marketplace. We learned from Dean Pearson of Hewlett-Packard that a large percentage of H-P's marketing force are graduate engineers. This is probably one of the reasons why Hewlett-Packard continues to be so successful. But this practice is not commonplace in U.S. industry.

Because the general status of Japanese education is so high, their average of mathematics and the science taught through high school may be up to three times higher than that of the United States. This results partly from Japan's longer school day (with odd half-days on Saturdays) and shorter vacations, which yields approximately two more years of pre-college schooling. As a result, the average Japanese high-school graduate can understand and use the tools of statistical quality control in the factory.

The United States, on the other hand, requires college-educated workers for that level of performance.

There is less job stability for engineers in Western Europe and Japan. This encourages employers to make long-term investments in continuing education. IEEE may support a tax proposal that would make continuing education more attractive to U.S. companies by defining its cost as a tax credit.

In summary, the technologically advanced nations of the world may well be learning from one another that some of the successful technologies used to bring useful products to the marketplace may not be as country-specific as once believed. While some technologies may be limited in their marketability because of cultural differences, others may work just as well in any advanced nation, providing informed legislators, industrialists, and other Influencers help pave the way.

New Developments in Career Issues

by Robert Brace

The Pension Committee has its hands full. Recent news has described how the Senate Finance Committee is preparing tax "reform" that would eliminate the tax-sheltered status of IRAs. Recall the long campaign for pension reform that IEEE conducted, starting with lobbying for ERISA in 1974. Engineers are particularly in need of liberalized pension provision, since their careers entail so much involuntary job mobility, but vesting normally requires 10 years of service. The Pension Committee is scheduling a conference call to plan strategy.

IEEE members are urged to write their Senators promptly!

The Age Discrimination Committee produced a Report on Age Discrimination, and it is currently updating this document to add a section on IEEE procedures for entering an appeal before the Supreme Court. You will remember the first time that IEEE wrote such a "friend of the court" brief it was for the DART engineers who were discriminated in holding public safety job security. A recent case involved ownership of an invention. The Committee is also planning another publicatio for IEEE members who feel they've been victims of age discrimination. It will tell what to do before seeing an attorney, and how quickly to do it.

At Press Time:

Call Your Senators!

The Pension Committee has just released a special Legislative Alert entitled "Your IRA: An Endangered Species?" Send it to approximately 60 percent of high-grade U.S. members, the Alert explains briefly the tax reform bill that is soon to be debated by the United States Senate. HR 388, or "The 27 Percent Solution" as it is known by the Senate Finance Committee, includes provisions that will significantly change private pension plans and supplementary retirement income programs.

The Pension Committee recommends that members communicate immediately with their U.S. Senators on the following Senate Finance Committee actions:

- Support the Finance Committee's mandatory five-year vesting provisions.
- Support the Finance Committee's expansion of pension plan coverage requirements.
- Support the Finance Committee's improvement in the integration rules.
- Oppose the elimination of IRA deductibility for employees covered by an employer-sponsored pension plan; being "covered" and "vested" are not the same.

Members are urged to contact their Senators by telephone and then by follow-up letters. Copies of any correspondence should be sent to the IEEE Washington Office, Attn: Vin O'Neill.
The Annual Meeting also underscored the importance of manufacturing engineering. U.S. trading partners in Western Europe and Japan guide their most brilliant engineers into manufacturing, while U.S. universities stress targeted research for their bright students. We also listened from our Japanese colleagues that their research projects are strongly market-driven. Product goals are set at upper management levels. Then, subsidiary process technologies are developed to enable the manufacture of products. Fortunately, a reassessment of interest in and understanding of the importance of manufacturing engineering in the United States is under way.

The United States must begin to practice manufacturing engineering in a much broader framework—based on the original 6D's of the product and the manufacturing processes through product design, manufacturing engineering, quality assurance, and customer training in the use and servicing of the final product or service. This is turn requires a change of emphasis and values in academia.

The United States has 200 engineering schools that are approved by the accreditation board and has a faculty of about 20,000 engineering professors. Yet very few schools make it their business to reach the design of products or services that are successfully relatable, reliable, high-quality, maintainable, pleasing to the touch and cost competitive. These values must be stressed if the United States is to become more competitive in world trade.

One of IEEE's goals is to understand better the needs of continuing education. We learned from several studies and heard from our overseas colleagues that the first teaching does not come from academia, but rather from industry. The next generation of academic and business leaders must be trained in industry. There must be more two-way communication between academia and advanced sectors of industry. We must find ways for the more substantial interchange of ideas and skills. We must find ways to make it easier for the advanced-industry employees to serve as adjunct professors at universities.

Dr. Lawrence P. Grayson, an advisor on mathematics, science, and technology at the U.S. Department of Education, reported the comparative achievements in pre-college education, especially in mathematics and the sciences. In the past 15 years, Japanese students have always come out on top. Additionally, West Germany has a very successful apprenticeship system. About half of the country's high-school graduates are enrolled for a four-year term in this program, in which several hundred thousand organizations participate. Young people go to school one day a week and work Monday through Friday. Apprenticeships are the backbone of West German's work force skills.

An equivalence does not exist in the United States. If the United States expects to improve its educational system, it will have to interest locally with some 50 state jurisdictions, each of which encompasses as many as 20 counties. That cannot be done simply through government. Federal government resources are limited, and must be devoted to the needs of the whole country.

What We Learned at IEEE's Annual Meeting

by Bruce O. Weischnel, 1986 IEEE President

The North Jersey Section IEEE Presents

Fall Lecture Series

PROGRAMMING IN THE LANGUAGE BASIC

The North Jersey Section is offering an evening course titled "Programming in the Language BASIC." The course is designed for professional personnel and will deal with BASIC primarily as it is implemented in the Microsoft version; by far the most popular and the "de facto" standard in the microcomputer industry. Other versions will be considered, however, and some attention will be given to many of their differences and their impact on the user.

The language will be covered through various applications in real, practical examples. Numerous techniques will be discussed; many of which do not appear in textbooks. Implementation of the language on different computer systems will be considered, with open discussion on advantages and/or disadvantages.

Students will be given assignments to do on their own computer, if one is available; either at home or on the job. Assignments will be designed to emphasize the techniques covered in the lectures. Upon completion of the course, the student will be able to write practical, useful programs and will have an in-depth awareness of the language, on which to build highly sophisticated skills.

The instructor is Mr. Roy S. Reischel, District Manager Technical Education and Training Division of Bell Communications Research.


(4) October 28—Functions—Library functions: User-defined functions.

(5) November 8—Character Strings—String definition: Built-in string functions: Data strings: String manipulations.


(7) November 18—Programming Testing and Debugging—Diagnosis: Error handling techniques: Error simulation: Positive use of error conditions.


(9) December 2—Snow Days, if needed.

Homework Assignments will be given and it is expected that you will have access to a computer or time sharing system that runs BASIC. Class size will be limited to 40. Early registration is recommended as past course offerings have been filled quickly.

Where: Jersey Central Power & Light Company; Madison Avenue (Rt. 24) at Punch Bowl Road, Morristown, N.J.

When: Eight sessions, Tuesday nights, starting October 7, 1986 from 6:45 PM to 8:15 PM. One snow date has also been arranged.

Cost: IEEE Members $40; non-IEEE Members $100. Textbook supplied and includes syntax for IBM, Apple, TRS-80 and Commodore.

Additional Information: Mr. John A. Bala at (201) 455-8634 (Business).
“Let’s Blow Away The Smoke Screen....”

To the Editor:

I am writing to comment on Walter R. Niall’s article in the May 1986 issue of “The IEEE Newsletter.” Mr. Niall is past chairman of the USAB Age Discrimination Committee. His overview on age discrimination covers the usual ground and he dismisses it as a smoke screen and not at the heart of the issue the motivations and reasons that may lead to apparent, real ageism.

Sure, there is age discrimination and it is ethically wrong, illegal, and bad for the country whenever it is practiced. Without a doubt some companies and individuals do not hire older workers at the age of 40. I have a phone number of one corporation that will not hire anyone over 45.

When business is good, marginal performers are frequently kept on the payroll. The decision to let go or lay-off is extremely difficult. Issues of loyalty, friendship, personality, etc. come into play. On marginal or below average performers: gain advantages from inertia and poor management misconceptions. When business turns bad, management is forced to make the tough decisions.

The working process, performed in the absence of age discrimination, will go on regardless of age. After all, when the costs are high enough, layoffs will occur.

So far I have sidestepped the important issue of loyalty. That’s tough one. I point out that it works both ways but the older employee who becomes obsolete is not being loyal to the employer. Moreover, at the time when the nation’s economy is under heavy pressure from foreign competition, and military and social needs increase (i.e., demand) on economic health, what special obligation does the employer have to support his or her employees who are counting the days to retirement, who are not producing commensurate with their salaries, in a rational and intelligent way, how can the 'salary' of the older employee be used more productively.

I am not questioning the older employee’s loyalty. I am questioning the employer’s loyalty to the older employee, that is where the issue is at the heart of the issue.

In my opinion, I believe older employees can be productive and valuable than younger persons. Experience is a key plus for the older employee.

Now let’s blow away the smoke screen that Mr. Niall has created and get at what I think is the heart of the issue. He dismisses the realities and the plight of the typical manager under pressures to invest budget and time on strict management, and schedules. On an individual basis the manager observes an older employee or lower level manager who has skills in a quite limited area, is inflexible, and is making no attempts to seek obsolescence. The manager has not advanced over the years, he is looking over the employee’s shoulders and their country productively, economically and professionally. They have a special edge because of experience and because they can serve as an example for younger employees. When an employee is critical to the company, he or she must have an obligation to act as a businesslike way.

To get at the heart of the issue let’s focus some attention on the obligations of the older employee. Among the group of employees who lay off people are those who are exercising good business practice. Let’s not indiscriminately tar all employees with the charge of age discrimination. However, through ageism, bias or bad management it does exist and we must be wary.

It is interesting to note that the U.S. Court of Appeals in Cincinnati, (Pan Am. V. Martin Cash Registry) on April 14, 1986, approved private settlements of age discrimination claims. Thus the legal system can deal with individual cases on a factual basis. Individuals and companies can negotiate settlements without EEOC approval. IEEE no longer has to be concerned about the controversial nature of the topic. In fact, it is now a civil suit, not a professional issue, and IEEE can withdraw from the field. It would be better if IEEE focus its energies on motivating older employees to improve their capabilities, rather than convincing them their problems arise from age discrimination.

JOHN J. GUGLIY, President & CEO, Lyril Inc.

Editors Note: The writer is an active member of the North Jersey Section Awards Committee.

Video Test Equipment

On September 24, 1986 the New York Chapter of the Broadcast Technology Society will present a mini seminar on “Video Test Equipment and Video Analyzers.” Seminar speaker will be Gary McGinley, Engineering Consultant at Leader Instruments Corporation and author. His talk will highlight the use of test equipment almost as video applications in both audio operations and maintenance. Equipment will be available for hands on review.

Mr. McGinley, formerly assistant video engineer, Engineering for Sony Corporation of America, was involved in the first NTSC TV studios and outer receiver development, and has authored several books, including Videocassette Records, Theory and Maintenance, and Video Cameras Theory and Maintenance.

Whether you are an Equipment Running Specialist, Design Engineer, or Student, interested in video test equipment, you should plan to attend. Admission is FREE to everyone. Handouts will only be available at the time of the meeting.

Winter Seminar On Communications Nets

The New York Chapter of the IEEE Communications Society is presenting a Fall Seminar on “Management and Maintenance of Communications Networks.” The seminar requirements and technical programs are designed for networkers responsible for new networks, public and private, which are emerging to satisfy user needs. Many networkers rely on equipment and services provided by multiple suppliers, making the task of management and maintenance more difficult. This seminar is dedicated to this topic, and speakers, developers, suppliers, users and vendors, will describe what is going on in this exciting field.

This seminar will be held on Thursday, December 4, 1986, from 9 AM to 5 PM at the United Engineering Center, 345 East 47th Street, NYC. For further information contact Phil Halton at (212) 234-72/2 and watch future issues of this section publication.