

**AMERICAN SOCIETY
OF
ENGINEERS FROM INDIA**

CAREER PLANNING & ENHANCEMENT

FOURTH NATIONAL CONVENTION



**SATURDAY, OCTOBER 3, 1987
MICHIGAN INN, SOUTHFIELD, MICHIGAN**

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VISION OF ASEI



ASEI TO BE

- * A Professional Organization with the Goal of "Service to its Members"
- * A Nationally Recognized Organization with large Membership and a Central Office with Dedicated Staff
- * A Forum to Assist Members in Advancing their Careers
- * A Facilitator of Technology Transfer between USA and INDIA

ASEI TO DO

CAREER & ECONOMIC ENHANCEMENTS

- * Provide Career Guidance and Counseling
- * Facilitate Networking
- * Disseminate Opportunities in India for NRIs

STUDENT AFFAIRS

- * Provide Guidance to Students
- * Establish Merit Scholarships
- * Assist in Practical Training after Graduation

ORGANIZATIONAL MATTERS

- * Establish a National Office
- * Establish an Editorial Board and Publish a Quality Newsletter
- * Increase Membership
- * Publish Directory of Members

PROFESSIONAL & TECHNICAL ENHANCEMENTS

- * Assist in Skill Development through Continuing Education Courses and Technical Seminars
- * Encourage PE Registrations

TECHNOLOGY TRANSFER

- * Conduct Workshops on How To Transfer Technology to India
- * Assist in Development of Rural India
- * Provide Communication Channels for Retired Engineers

CONVENTIONS & AFFILIATIONS

- * Conduct Conventions throughout USA
- * Conduct More than One Convention per Year
- * Cooperate with Other Professional Societies with Similar Goals

AMERICAN SOCIETY OF ENGINEERS FROM INDIA

1986-87 ORGANIZATION

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JAMES J. BLANCHARD
GOVERNOR



September 23, 1987

Greetings:

On behalf of the citizens of the State of Michigan, it is an honor to extend my warmest personal and official welcome to all in attendance at the Fourth National Convention of the American Society of Engineers from India being held on October 3, 1987, in Southfield.

As members of the American Society of Engineers from India, you have every reason to be proud of your achievements and contributions in providing a cooperative and informational avenue to engineers while improving the quality of engineering capabilities.

Please accept my best wishes for a successful and worthwhile meeting.

Sincerely,

James J. Blanchard
James J. Blanchard
Governor

AMERICAN SOCIETY OF ENGINEERS FROM INDIA
1987 NATIONAL CONVENTION
OCTOBER 3, 1987

SESSION - A

1:00 p.m. - 4:30 p.m.

ENTERING JOB MARKET

Chairman:
Dr. P. C. Shrivastava

A-1: CAREER SELECTION

- * Research & Academics:
The Alternative Careers
- Dr. S. Chandra
- * Non-Traditional Careers
for Engineers
- Mr. E. E. Stewart
- * Immigration: The Next Step
- Mr. M. E. Piston

A-2: GETTING STARTED

- * Invitation & Interview
- Mr. J. D. Scheff
- * What Do We Expect From New
Hires ?
- Dr. P. D. Agarwal
- * Professional & Social Adjustment
- Dr. S. M. Shahed

SESSION - B

1:00 p.m. - 4:30 p.m.

MANAGING YOUR GROWTH

Chairman:
Mr. A. Thakkar

B-1: PROFESSIONAL DEVELOPMENT

- * Keeping up with Changing
Technology
- Dr. E. Lumsdaine
- * Developing Managerial Skills
- Mr. M. S. Gill
- * Networking: How it can Help You !
- Mr. D. W. McComb

B-2: PERSONAL DEVELOPMENT

- * Financial Planning
- Mr. G. Janveja
- * Stress Management
- Dr. P. Sivanandham
- * Contribution to Community :
Do we need justification ?
- Dr. D. S. Rao

AMERICAN SOCIETY OF ENGINEERS FROM INDIA
1987 NATIONAL CONVENTION
OCTOBER 3, 1987

SESSION - C

1:00 p.m. - 4:30 p.m.

INDUSTRIAL CLIMATE

Chairman:
Mr. M. Motwani

C-1: IN USA

- * Trends in Industry :
A Global View
- Dr. T. Chandrupatla
- * Minority Business Opportunities
- Mr. E. D. Gray
- * Role of Small Business Administration
- Mr. D. R. Chaffin

C-2: IN INDIA

- * Technological Evolution in India
- Mr. W. W. Hamrum
- * Transfer of Technology
- Dr. N. Ramakrishnan
- * Business Opportunities
- Mr. R. Soundhira Rajan

EVENING

6.00 p.m. Social Hour

7:00 p.m. Banquet

Master of Ceremonies
- Jay Shah

Welcome
- Noor Kapadia

President's Report
- Veni Rao

Address & Awards
- Dr. G.R. Mohan Rao
Sr. V.P., Texas Instruments

Closing Remarks
- Nirdosh Reddy

9.00 p.m. Entertainment

Introduction
- Ramesh Mangrulkar

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ASEI REPORT - 1987



B.V. (Veni) Rao
President



Noor Kapadia
Chairman of the Board

As we approach the Fourth Annual Convention, it's time to reflect on the year's activities. It has been a very busy and fruitful year and some of our accomplishments are listed below:

- * Organized membership meetings at Wayne State University, GM Tech Center and in Houston, Texas; established a new chapter in Akron, Ohio.
- * Introduced the concept of Life Membership and also doubled our paid membership; streamlined membership data base and produced a brand new directory.
- * Held seminars on "financial" matters and on "career opportunities for spouses and students"; teamed up with Michigan Association of Physicians to host Mr. K.R. Narayanan, a Minister of State for Industry and Technology, Government of India and raised funds for Polio vaccinations in India; donated model robots to Indian Universities.
- * Informed our Engineers about job opportunities in a large automotive company.

Early in the year, a team was formed to come up with a "Vision" - - a long term set of goals for the Society. After spending numerous hours we developed a vision, as shown on the first page of this publication. Of course, it's easier said than done. As hard as we are working today, we need to work even harder and smarter to achieve our challenging "Vision". One thing we know is that "IT CAN BE DONE". It is up to all of us to make ASEI a great organization.

We sincerely thank the Executive Committees of Michigan and Akron Chapters, the National Executive Committee, the Board of Directors, various Committees of the above, and the Convention Committee for their hard work and contributions throughout the year. Most of all we thank all our members for supporting ASEI.

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Prakash (Krish) Krishnaswamy
President

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1987 ASEI NATIONAL CONVENTION

CAREER PLANNING & ENHANCEMENT

Encouraged by the feedback received from last year's convention attendees, the "sessions" portion this year has been tripled in size. The convention offers, for the first time, three simultaneous sessions aimed at three segments of the engineering community: students getting ready to choose careers, practicing engineers seeking career growth, and those interested in the overall industrial climate in the United States and India.

Each of the three sessions features six distinguished speakers knowledgeable in the topics they will be addressing. The simultaneous sessions are:

- * "Entering the job market" - Discusses issues most relevant to students just getting started in their careers
- * "Managing Your Growth" - Addresses professional and personal growth of the individual
- * "Industrial Climate" - Overviews global trends in industry with specific emphasis on technology transfer between the United States and India and minority business opportunities here

It is abundantly clear to me, from the active participation of all the convention committee members shown on the following two pages and the panel of speakers assembled by our sessions chairmen, that ASEI is well poised to become a nationally recognized organization.

In line with the Vision of our Society, the focus of the convention has been to provide service to the members. One of the primary objectives of ASEI is to promote a sense of belonging and provide opportunities to help each other through sharing of ideas and discussion on subjects of common interest. We hope that this convention furthers this cause.



J. Nirdosh Reddy
Chairman
Convention Committee

AMERICAN SOCIETY OF ENGINEERS FROM INDIA



Vijay Mahida
Fund Raising



Shailesh Vora
Fund Raising



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Conv. Proceedings



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Publicity



Jehangir Mistry
Publicity



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Publicity



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Convention Day



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AMERICAN SOCIETY OF ENGINEERS FROM INDIA

1987 NATIONAL CONVENTION

CAREER PLANNING & ENHANCEMENT



CHIEF GUEST

DR. G. R. MOHAN RAO

Dr. G.R. Mohan Rao is currently employed at Texas Instruments Incorporated, Dallas Texas, as a Senior Vice President in the Semiconductor Group involved with Advanced Technology/Product Development, Design Automation, Process Automation/Factory System Integration and many other activities.

He has been with TI since 1972 in various roles as Design Engineer, Manager, Senior Member of Technical Staff, TI Fellow and Vice President. He holds more than 20 patents worldwide, has published extensively in international journals, and participated in many international conferences.

Born in 1945 in India, he obtained B.Sc (Hons) in 1963, M.S. in 1964, Ph.D. in 1968, all in electronics from Andhra University. Subsequently, he obtained a Ph.D. in Electrical Engineering from Southern Methodist University, Dallas, TX, in 1972.

He is a Senior Member of IEEE, New York, and a member of the Board of Directors of SRC (Semiconductor Research Corporation).

Holding numerous patents including key patents in MOS memory design, device structures and processing, Mohan is recognized for his exceptional breadth of knowledge, outstanding technical judgement, and practical insight in the semiconductor field. He is credited with being the one person most responsible for the innovative design of TI's 64K and 256K DRAMs.

SESSION A: ENTERING JOB MARKET

CHAIRMAN : DR. PRAKASH SHRIVASTAVA

Just before graduation, most of the immigrant alien students face a fundamental dilemma: What to do after graduation? Entry into the job market is an exciting but rather unknown event at that time. Not only making a right career selection is a paramount importance, but how to start in a "first" or a "new" job also sets the pace in developing a career.

An additional constraint, the "CATCH-22" of it is that the job to your liking may not be the "right" choice to get the "green card"! So, what do you do? These are the issues for all times. The session on "Entering the Job Market" will attempt to provide some "food for the thought" for our young colleagues.

The American Society of Engineers from India is pleased that eminent speakers from the Academic & Industrial world have agreed to discuss their perspectives with us. As you may already have noticed, the session focuses on the alternative and non-traditional careers and the immigration process. Viewpoints on the interview process and subsequent expectations of the hiring manager are equally important at every stage of the professional career changes. Coming from an oriental cultural upbringing, not only we need adjustments to interface with American Engineers professionally, but also require a major attitude adaptation in a new society.



Dr. Prakash Shrivastava

Bangalore. Currently, he is a Senior Project Engineer at the Advanced Engineering Staff of General Motors Corporation.

Prakash Shrivastava received the B.E. degree in Electronics from Jabalpur University, the M.Tech. degree in Electrical Engineering from IIT-Bombay, and the M.A. and Ph.D. degrees in Mechanical & Aerospace Engineering from Princeton University. He held several Dr. positions at the Aeronautical Development Establishment,

A-1: CAREER SELECTION

RESEARCH & ACADEMICS: THE ALTERNATIVE CAREER

DR. SURESH CHANDRA

* What Do Universities Seek In A Prospective Faculty Member?

Teaching Skills: A mastery of the subject is assumed if you have a Ph.D. degree. A satisfactory performance in the classroom additionally requires communication skills. The essential facets of communication skills include clarity of expression and interest in the student.

Research Skills: Ability to write and secure funded research contracts. Un-sponsored research is also important. Research serves to foster a rapport between faculty and students.

* Advantages of An Academic Career Over A Career In Industry

Latitude: Your teaching and research responsibilities are closely aligned to your interests. In contrast, entry-level positions in industry entail assigned workload, which almost invariably accompanies close supervision. The assignments can do change as a result of shifts in the industry's priorities.

Creativity: Interaction with young minds with little or no prejudices and preconceived notions. Serves to keep your intellect keen and creative. Few positions in industry can offer an atmosphere for such interactions.

Employee Relationships: Relationships between the faculty member and the department chairman is less structured, less formal than in industry. Positions in industry will usually have established boss-subordinate configurations.

Recognition: Your research achievements can be documented as such, you get direct credit for it. In industry, your work is for the company and may mean lack of direct identification recognition.

* Advice To Young Faculty Seeking Advancement and Marketability

Initiative: Show initiative and dedication in whatever you do -- teaching, research, or administrative work.

Student Rapport: Build a rapport with students rather than isolating yourself in your office.

Publish Your Work: Make efforts to publish your Ph.D. work because that is normally the most significant research a young faculty member does in the first 3 or 4 years of his academic career. It helps to build your credentials.

Projects With Graduate Students: Pursue small research ideas with graduate students, even if the effort is unsponsored.

Service To University and Profession: Participation in departmental and other university committees is most desirable. Presentation and publication of research findings and teaching innovations, refereeing research papers and conference abstracts, and seeking positions in local and national professional organizations are also strongly urged.

Seeking Research Projects

Identify Sources: Develop a relation with the Research Administration off of your university. This office will have a wealth of information on sources for research sponsorship. Efforts to secure summer positions with industry and national research laboratories can be extremely helpful.

Collaborate: Collaboration with colleagues may serve to strengthen your proposal. Senior colleagues may have inside tracks to potential sources.

Understand Sponsor's Needs: Send carefully prepared proposals in response to solicited requests from funding agencies. This will help in relating your research background to the interests of the agencies.



DR. SURESH CHANDRA

Suresh Chandra obtained the B.Sc. degree in science from Allahabad University, B.E. degree in Chemical Engineering from Banaras Hindu University, M.E. degree in Chemical Engineering from University of Louisville and Ph.D. in Civil Engineering from Colorado State University. He also attended the Management Development Program at Harvard University. He was a Faculty Member at University of Miami before assuming the position of Chairman of Mechanical Engineering Department at North Carolina Agricultural State University, where he is currently the Dean of School of Engineering. Dr. Chandra is a recipient of several awards and honors and he has published several technical papers in various technical journals. He is a Fellow of American Society of Mechanical Engineers and a member of several technical societies.

A-1: CAREER SELECTION

NON-TRADITIONAL CAREERS FOR ENGINEERS

EDWIN E. STEWART

I. Definitions

A. Traditional Engineering Careers

1. A "Technician"
2. Close associate with hardware/software
3. More association with "things" than with "people"
4. Frequent use of elements of the "Engineering Education"
5. Strong desire to stay up-to-date technically

B. Non-Traditional Engineering Careers

1. A "people-person"
2. Little direct association with hardware/software
3. More association with "people" than "things"
4. Frequent use of elements of the Engineering Education
5. Continued interest in certain technical areas

II. How it happens

A. First step is often first level of engineering supervisor

1. People relations become significant
2. One step removed from the technical action
3. Learning to succeed through the success of others

B. For some, engineering education is only a first step

1. Continue education in other areas--law, medicine, MBA
2. Abrupt career change can be triggered
3. The "real" me steps forward

III. Why it happens

A. Engineering education is powerful and versatile

1. Stresses importance of accuracy, logic, data, facts & rules
2. Teaches organized approach to problem solving
3. Promotes creativity tempered with realism

B. Technical companies develop technical leadership

1. Complex products require strong engineering support

2. Engineers become the candidate pool for most leadership positions

IV. The Good News & The Bad News

A. Dual ladder becoming more widely used

1. Provides career paths for the 'Technician'
2. Don't have to move into management to advance
3. Can do what you do best and succeed

B. Move to non-traditional career is difficult to reverse

1. Technology passes by you
2. You are what people think you are
3. Requires a large or flexible organization for success

V. Where do you fit in

A. Sizing up your interests

1. Things or people
2. Doing what's right for you
3. Seeking the advice of others
4. To enjoy is to succeed

B. Planning for your future

1. Investigate your interest through class work
2. Investigate your interest through outside activities
3. Set objectives with your boss
4. Be ready when the opportunity presents itself



Edwin E. Stewart

Edwin E. Stewart received B.S. and M.S. degrees in Mechanical Engineering from Iowa State University. Since joining General Motors in 1964, he has worked on a variety of assignments including anti-skid brakes, disc brakes, and occupant restraint systems. He was the Project Manager for passenger car noise control

activities, and has since served on numerous positions in the Advanced Engineering Staff of General Motors Corporation including Manager of Administration and Executive Engineer of Operations. Currently, he is the Director of Administration for the Advanced Engineering Staff. He is a member of the Society of Automotive Engineers, Engineering Society of Detroit, and the Detroit Economics Club. Edwin Stewart and his wife Sandra, a high school teacher, reside in West Bloomfield, Michigan.

A-1: CAREER SELECTION

IMMIGRATION: THE NEXT STEP

MICHAEL E. PISTON

I. OBTAINING IMMEDIATE WORK AUTHORIZATION

A. Practical training

1. Available for foreign students after degree program is completed.
2. Must be applied for within 60 days of graduation or 30 days after.
3. 6 months work authorization available if no job offer - additional 6 months available after job obtained.
4. 1 year work authorization available if first applying for training with job offer.
5. May change employers during practical training with INS approval.

B. H-1

1. Available for temporary employment in "professional" job.
2. A professional job is one which requires an individual with a bachelor's degree in that field to perform (e.g. engineer, systems analyst).
3. Alien must have a U.S. bachelor's degree in that field or a foreign degree that is its equivalent, or a combination of academic and work experience, to qualify.
4. Can be obtained initially for 3 years.
5. Can have a total of no more than 5 years in H-1 status (6 years in special cases).
6. Must be in valid non-immigrant status to change status in U.S. to H-1, although INS may overlook overstay for "good cause". Otherwise must go to a U.S. Consulate abroad for H-1 Visa.
7. Usually approved in 2 to 4 weeks.

8. INS says cannot start work until H-1 approved but some courts have ruled may start working as soon as application has been filed.

9. New H-1 must be obtained to change employers.

C. H-2 and H-3: Time consuming, costly, difficult to obtain - often impossible.

II. PERMANENT RESIDENCY

1. Employer may file an application for labor certification upon alien's behalf if it has a full time "permanent" (indefinite) position which it wishes alien to fill.
2. Employer must offer 95% of what Department of Labor (DOL) determines to be prevailing wage for the protection. However, Employer need not to pay that wage to the alien until alien becomes a permanent resident.
3. Application for labor certification must specify minimum qualifications for position.
4. Employer must "recruit" for qualified U.S. workers for the position by placing an ad in a an appropriate professional or technical journal, an order with the local state job service's job bank, and post a notice describing the position at its place of business, then wait 30 days for responses.
5. Only U.S. citizens, permanent residents, or aliens with permanent work authorization need to considered for the position.
6. If no applicant with the minimum qualifications for the position applies for it, appears for an interview and is willing to accept the position, then labor certification will be issued for alien.
7. Alien then must wait for when the "visa cut-off date" published monthly by the State Department reaches his/hers "priority date" (the date the application for certification was filed).
8. About 6 to 12 months for the priority day to be reached for "professional" positions - 18 to 24 months for other positions.
9. Alien must prove to the INS the he/she has the minimum qualifications stated in the application for labor certification, using diplomas, transcripts, and affidavits from previous employers.

10. Alien must not be "excludable" from the U.S. (e.g. have serious criminal convictions, have previously used fraud to obtain immigration benefits).
11. If Alien has been out of status or illegally worked in the U.S. his final interview for permanent residency will be at the U.S. consulate in his home country - otherwise final interview will be at the INS office where he lives in the U.S.



Michael E. Piston

Michael Piston received the B.A. degree in Economic & Political Science from University of Michigan and J.D. degree from Wayne State University Law School. After practicing with a small business law firm for two years, he started his own practice concentrating in Immigration Law. His office is located in Southfield,

Michigan. Mr. Piston is a member of the State Bar of Michigan, Bar of Eastern District Michigan, Sixth Circuit Court of Appeals, and Detroit Chapter of American Immigration Lawyers Association.

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IT PAYS TO TURN TO A PROFESSIONAL**

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A-2: GETTING STARTED

INVITATION & INTERVIEW

J. DON SCHEFF

RESUME AND INTERVIEW... CRITICAL STEPS IN THE EMPLOYMENT PROCESS

Applying for an engineering position with a major employer usually requires applicants to prepare and submit a resume of their qualifications (or employment application) and take part in a pre-employment interview. How well you handle these requirements can spell the difference between success or failure in landing the job you want.

Steps in Preparing a Successful Resume :

1. Do some soul-searching
2. Write your objective
3. Sell yourself
4. Be brief and non-repetitive
5. Write it yourself
6. List the jobs you've held
7. Forget the references
8. List personal information first
9. Don't elaborate on personal information
10. Make it neat
11. Write a clean, short, personal cover letter
12. Put yourself into your resume

What Interviewers Look For :

1. Punctuality
2. Appearance
3. Knowledge of and interest in the Company
4. Academic achievements
5. Experience
6. Interests
7. Leadership
8. Career goals and objectives
9. Communications skills
10. Follow-up



J. Don Scheff

J. Don Scheff received the Bachelor's and Master's degrees in Business Administration from University of Detroit. In his 31 years with Ford, he has held a variety of analytical, supervisory, and managerial positions involving virtually all aspects of human

resource management, including recruitment and placement. At present, he is the Personnel and Organization Manager for the Product Engineering office of Ford Motor Company's Electrical and Electronics Division. His professional affiliations include American Management Association, American Society for Training and Development, Equal Employment Advisory Council, and National Center for Employment of the Handicapped.

A-2: GETTING STARTED

WHAT DO WE EXPECT FROM NEW HIRES ?

DR. PAUL D. AGARWAL

Of the last 40 years of my professional life, over one-fourth was spent in engineering education and the remaining in industry and, therefore, I have developed a perspective from both. During my career, I have hired a large number of graduate engineers including several from India. I would discuss my observations of young engineers from India vis-a-vis American engineers.

The basic question to consider in evaluating the new hires is: Do the engineers have marketable skills? Do they meet the needs of the company at large? In its Dictionary of Occupational Titles, the United States Department of Labor defines an engineer as one who is concerned with "the practical application of physical laws and principles of engineering for the utilization of machines, materials, instruments, structures, processes and services". The key phrase here is practical application. Too many engineering graduates come to industry with a fine grasp of scientific theories and mathematical principles, but with little practical judgement. A characteristic essential in developing practical judgement and one which we don't always find is a pragmatic understanding of the fact of life in industrial research. I will elaborate on this point during my talk.

It is not unusual for new master's or PhD's to enter industry with the idea that they will be continuing to work in the areas of their thesis research. They hope to settle down with a computer by their side and devote their days to theoretical calculations in a very restrictive subject area. But industry has pilot plans to get on-stream, processes to develop

and the commercial potential of projects to assess. It isn't enough in industry for a subject to be intellectually absorbing; its got to show some prospects of profitability.

Looking at another area, many of today's new engineers lack basic communication skills. Unless they can speak articulately and write effectively, they will be at a distinct disadvantage. In our interviewing and evaluation process, we generally try to assess how they convey information. In addition, I may cover other topics subject to the time constraints. I would welcome further discussions on this topic from the audience.



Dr. Paul D. Agarwal

Electrical Engineering at the Research Laboratories and is currently the Executive Engineer of Electromechanical Systems at the Advanced Engineering Staff. Dr. Agarwal is a fellow of IEEE. He has published several papers and holds several patents primarily in Electrical Drive Systems and Actuators.

Paul Agarwal received the B.E. and M.E. degrees from the Benares Hindu University, the M.S. degree from the Illinois Institute of Technology, and the Ph.D. degree from Polytechnic Institute of Brooklyn (1951-57) and Professor at the University of Massachussettes (1957-61). From 1956 to 1961, he was a consultant to General Electric Company. Since 1961, he has been with General Motors as Head of the

A-2: GETTING STARTED

PROFESSIONAL AND SOCIAL ADJUSTMENT

DR. S. M. SHAHED

Social scientists consider life cycles consisting of peaks and valleys of stress levels over time. Three such cycles are generally considered - bio-social life cycle, work/career life cycle and family life cycle (1). High stresses are associated with such phases of each cycle as adolescence and mid-life in bio-social life cycle; getting a job and getting accepted in the work/career life cycle; getting married and having children in the family life cycle. If such high stress phases happen to occur simultaneously, then coping becomes difficult.

Immigrant communities face an additional life cycle of adoption to the new community which I will call the cultural life cycle. This life cycle has stress pagodas associated with things such as guilt feelings, uncertainty of immigration, loss of cultural identity, lack of acceptance by the host community etc. Also, in the family life cycle there is likely to be the added stress of establishing dual careers. Such high stress phases are more likely to occur simultaneously.

In the framework of these four life cycles - bio-social, work/career, family and cultural, I propose to discuss the special problems faced by the Asian Indian immigrant community and engage you in a discussion of what to do about professional and social adjustment to cope with these special problems.

The high stress phases of the bio-social life cycle of the immigrant community are probably not significantly different from those of the host community and I do not propose to deal with issues that are common.

There are however, added issues in the work/career life cycle. The prevalent stereotype of the Asian Indian engineer is that he/she is technically sharp but lacking in decision making and managerial skills (2). The result can be a stagnation at a low level in the organization, accompanied by seemingly contradictory signals about respect for technical ability. Part of the roots of this stereotyping clearly lie where all stereotyping comes from, but another part may lie in uncertainty resulting from cultural transplantation and different cultural norms such as deference to authority. In any case, such organizational stagnation can result in high stress and frustration. I have found it helpful to consider a four career development model which is focused on work rather than on organizational structure (3). The four stages of growth are apprentice, independent specialist, mentor and sponsor. I propose to describe the characteristics of these four stages and what is required to progress along these stages of career development. I feel that such an approach can avoid much frustration and high stress associated with the work/career life cycle.

In the family life cycle too, the immigrant community faces additional potentially stressful situations. These include coping with dual careers; heightened cultural differences with the next generation; an international reinforcement of cultural practices of the country of origin as a reaction to loss of cultural identity, resulting in further alienation of the next generation etc. I propose to discuss how community support groups can provide a coping and adjusting mechanism to reduce the impact of such high stress situations.

The cultural life cycle presents its own set of issues already mentioned above. I am not familiar with scholarly publications dealing with this problem and would invite your thoughts on it.

Given this rather alarming description of the life cycles and added stressful phases for the immigrant community, it is a wonder that any of us manage to make the necessary professional and social adjustment. Yet, the fact remains that we are the most "successful" immigrant/ethnic group in the U.S. today. I believe that this is due to the strengths that we bring and develop.

I would like to engage you in a discussion of these strengths and a way of building on them to assure that we continue to make the necessary professional and social adjustments in our adopted country. It is illustrative to look at other more mature immigrant communities and consider the adjustment difficulties that they have faced. I have read occasional articles on two such communities, one in the UK and another in Canada. In both these communities the problems of maladjustment manifest themselves in very high teenage suicide rates (compared to the host community average) and very high divorce and wife abuse rates (compared to the home community). A conscious attention to coping and adjustment processes is necessary if we are to avoid the same trap.

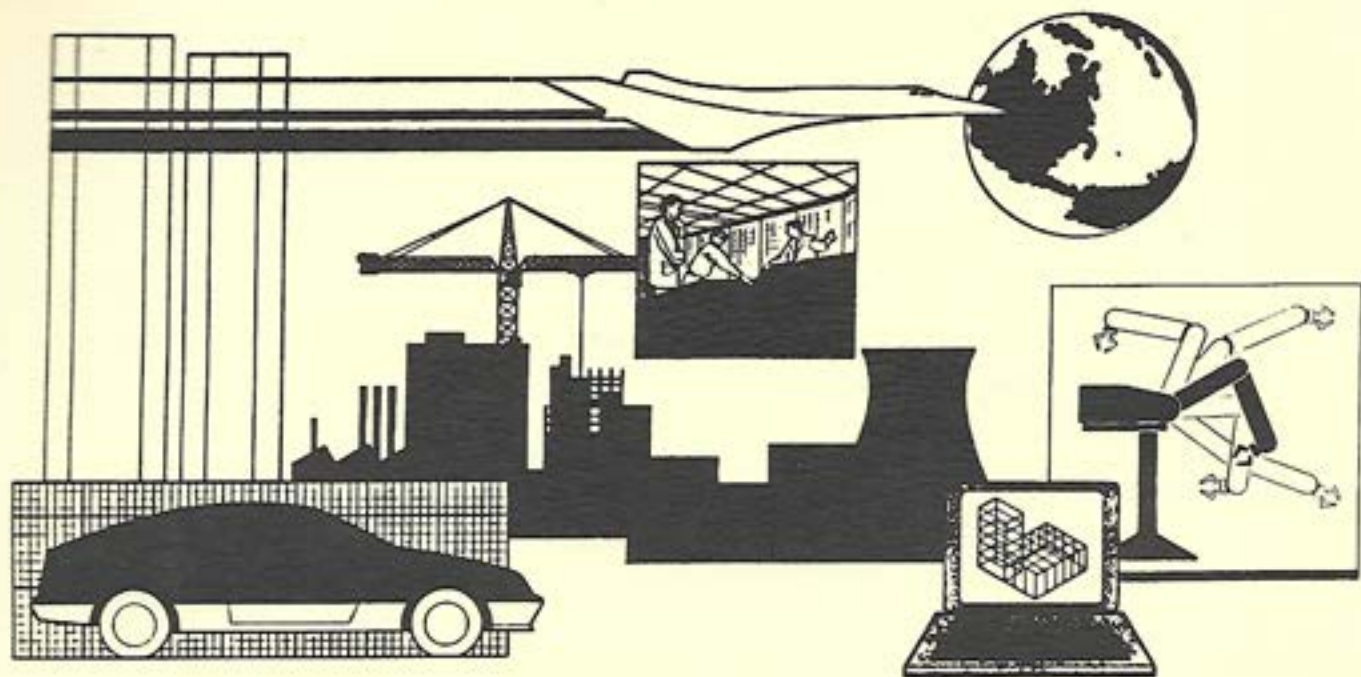
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of California, Berkley. Since 1971, he has held several positions at the Cummins Engine Co. which include Director of Performance & Combustion Technology and Executive Engineer of Hi HP Projects. Currently, he is the Executive Director of Design and Analysis. Dr. Shahed is a recipient of several awards from S.A.E. He is the Chairperson of Central States Section, a member of Industrial Advisory Committee of Michigan Technological University, and a member of the S.A.E. and A.S.M.E.



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SESSION B: MANAGING YOUR GROWTH

CHAIRMAN : ASHOK THAKKAR

After graduation and a few years of practical engineering experience, some of us look for new challenges. Towards that goal, we need to develop a growth plan for improvement in our careers and at the same time we need to nourish our personal development as individuals in the community we live in.

We must also keep pace with the fast moving world of technology to remain competitive and effective in our jobs. Also, we need to develop managerial skills to move up in the corporate ladder. A lot many crisis in our professional and personal lives may be resolved with less efforts with the right contacts. Financial planning is important to safeguard against inflation, layoffs and other emergencies. Futhermore, one also has to cope up with the job-related stresses and contribute effectively to the society. Today, we have an opportunity to hear and discuss these real-life situations in this session.



Ashok Thakkar

Ashok Thakkar obtained the B.E. degree in Mechanical Engineering from Sardar Patel University and the M. S. degree in Manufacturing Engineering from University of Detroit. He worked as an Industrial Engineer at Holly Automotives and as a senior

manufacturing engineer at Rockwell International. Currently, he is a manufacturing engineer at Chrysler Motors Corporation. He is actively involved in the social activities of the Indian Community of Detroit.

B-1: PROFESSIONAL DEVELOPMENT

KEEPING UP WITH CHANGING TECHNOLOGY

DR. EDWARD LUMSDAINE

In the 300 years spanning from the invention of the steam engine to the achievement of sustained nuclear reactions, technology mainly dealt with the mechanical processes involved in energy conversion. Today, technology advances are centered around processing information and dealing with events often microscopic in size - that occur inside a structure (such as a computer) or inside a biological unit (such as a gene). Sudden disaster like Chernoble or the "Challenger" explosion make us keenly aware that our customary ways of handling technology have become inadequate. But we must be even more alert to the effect of less obvious, but more pronounced changes and developments, such as the spread of personal computers and the growth of global economic competition. Such comparatively rapid changes can leave us with a feeling of pessimism, of inadequacy to be able to react properly. So what can we do to keep up with (or even get ahead of) changing technology?

We have a number of responses that we can make to meet and manage change well. My talk will discuss some of the things we can do to prepare for and cope with changing technology.

1. We Need a Change in Attitude: We have to work on our attitudes about change. We have to look at change (and especially a pronounced change) as an opportunity for improvement and progress. We must realize that change means life; an organism or organization that is not changing is probably dead or nearly so. Therefore, we must expect changes; and these changes will not only be changes in technology, we also will need to make changes in our attitude about how we work. We are known as a nation of individualists. This attitude may no longer be best for coping with change. Cooperation and teamwork (organization, perhaps on a global scale) may be more appropriate responses.

2. We Need to Study Trends: We must broaden our perspective; we must consider what is going on out there in the world. We need to observe trends. How will these trends affect us? As we become aware of trends in society, in the market place, and in technological development, we can watch for new opportunities and prepare new products to meet different needs or to solve new problems. This also means doing some reading in areas outside our own field, learning different languages, spending some time observing things outside our own department at work, or getting involved in cultural concerns and activities, demographics, politics, and the arts.

3. We Need to Practice Higher Levels of Thinking and Creativity: Throughout our education, we have mostly been taught the lowest level of thinking: the acquisition of data and information which is nothing more than the mere accumulation of knowledge. We must increase our skills in comprehension, in analysis, and in synthesis of this knowledge, and finally we need to exercise judgment - which includes an examination of the underlying assumptions, values, and interconnections. We must practice how to think creatively. The habit of imagination will last and be of benefit long after specific knowledge is forgotten or out of date.

4. We Need to Innovate: Creativity is most useful when it leads to innovation. Innovation is achieved only when a creative idea is developed into an invention which is then implemented. We must understand the role of innovation in maintaining the well-being of our industries, the wealth in this country, and our lifestyle. Successful innovation exploits change; the skill can be learned.

5. We Need Continuing Education: Engineering knowledge doubles every fifteen years or so, thus lifelong education is mandatory for engineers who want to keep up with changing technology. We cannot afford to be too specialized. Through continuing education, we can maintain our knowledge of basic mathematical and engineering principles, and we can acquire interdisciplinary knowledge. This can mean self-study; it can mean enrolling in advanced degree programs like those we are developing at the University of Michigan - Dearborn.

Public and private organizations are offering a multitude of useful seminars and short courses. We must make use of these opportunities. We also need to develop our communications skills; these are among the skills most valued by industry.

6. We Need to Solve Real Problems: We need to look for areas where technology can be applied to solve serious, international problems. As scientists, we have the reputation of being conformists to some degree - we are not generally used to thinking about the consequences of the work that we are doing. How is the product or process we are working on affecting our biosphere, population growth, food, health care, other resources? Will it contribute to the growing mountain of waste? Will the materials be recyclable? Will our product or process help to minimize or cure air, water or noise pollution? Does what we do have social value - will it help to reduce crime or unemployment? Who are we really working for? What are the needs that we can meet? How can we add value to what we are doing? We must develop a mind that looks to the future as well as the past.



Dr. Edward Lumsdaine

Institute and the Director of Energy, Environment and Resources Center at the University of Tennessee. Currently, he is the Dean of the School of Engineering at the University of Michigan - Dearborn. He has been instrumental in establishing the CAD/CAM/ROBOTICS laboratory on the campus. His international work includes teaching at Universities in Egypt, Qatar, and Taiwan.

Edward Lumsdaine received the B.S., M.S. and Sc.D. degrees in Mechanical Engineering from New Mexico State University. After working for Boeing as a design research engineer, he taught at South Dakota State University and University of Tennessee. He was the Director of the New Mexico Solar Energy

B-1: PROFESSIONAL DEVELOPMENT

DEVELOPING MANAGERIAL SKILLS

MOHINDRAPAL S. GILL

In the business environment today the demand is for leaders as compared to managers who basically implement the existing rules, operating procedures and policies. So, I would like to modify the discussion today to "developing leadership skills". Leadership skills are not inherited, but developed, and the more important of those skills could be categorized as follows:

- * Integrity, Honesty, Trust
- * Decision Making and Problem Solving
- * Knowledge
- * Communication
- * Creativity, Initiative, Motivation
- * Teamwork and Association with People

Developing these skills begins in childhood and is a continuous process. The initial phase of education and family environment establishes the foundation on which we build for the future:

- * Education: Primary, Secondary and College
- * Family Environment: Discipline, Confidence, Competitiveness and Decision Making

The knowledge that we have gained prepares us to enter into the competitive world of business and it is during this period that a person gains the experience and opportunity to achieve the goal that he has established for himself. Let us review this phase and call it the education and experience phase, however, before we do that, we must set ourself a goal. What do you want to be and how are we going to define success in our own terms. Leaders focus on strengths and set goals worthy of themselves. You may borrow someone else's traits or mannerisms, but always be yourself. Leaders don't try to be someone else." Next, we need to evaluate ourselves and determine our strengths and weaknesses. People of Indian origin can definitely identify these. Let's mention some in each category:

Strengths

- | | |
|--|------------------|
| * Excellent Education, Skills, Knowledge | * Good Listeners |
| * Hard working | * Good Followers |
| * Family Commitment | * Honest |
| * Flexible to Change | * Passive |
| * Identify and Reputation | * Warm Persons |

Weaknesses

- * Communication/Speak Effectively
- * Appearance
- * Not Willing to Take Risks
- * Self-Confidence/Getting Results
- * Initiative to take Responsibility and Leadership
- * Learning American Culture and Customs

The actions that a person has been taking or should be taking to improve his leadership skills can be summarized as follows:

- * Education and Experience. Invest in Yourself
 - Advanced degree
 - Leadership and Team Building Seminars
 - Effective Speaking
 - Additional Work Assignments/Committees and Task Forces
 - Volunteer for Temporary Supervisory Assignments
 - Project Professionalism, Confidence and a Positive Attitude
 - Turn Negatives into Positives
 - Learn from Your Failures
- * Social attitudes are crucial to your achievements. You become a part of the American system and support it:
 - Leisure time participation - sports
 - Community activities - PTA, Scouts
 - Become a Team Player
 - Find a Mentor

In conclusion, it is "you" who is responsible for determining what your goal is and then taking the necessary actions to achieve the goal. Let me leave you with a quotation:

"If you compare yourself with others, you may become vain or bitter, for always there will be greater and lesser persons than yourself, but enjoy achievements as well as your plans. Keep interested in your career, however, humble, it is a real possession in the changing fortunes of time."



Mohindrapal S. Gill

Mohindrapal Gill received the B.Sc. degree in Science from University of Punjab, B.S. degree in Mechanical Engineering from Oklahoma State University, and M.S. degree in Industrial Engineering from Wayne State University. He joined Ford Motor Co. as a Project Construction Engineer in 1964. Since then he has held various positions which

include Manufacturing Manager and Executive Engineer in Plastics, Paint & Vinyl Division. Currently, he is the General Manufacturing Manager of the Plastic Products Division.

B-1: PROFESSIONAL DEVELOPMENT

NETWORKING: HOW IT CAN HELP YOU!

DAVID W. McCOMB

Networking, the development of new personal relationships built around shared interests, is a political process -- a means of generating informal power. It is personal need-specific, rather than institutional in nature. The driving forces are trust, excitement, personal integrity, and sharing.

Some uses of networking include:

- * Remedying organizational problems
- * Transforming opinion toward different value systems
- * Inter-institutional coalition building
- * Strengthening associations and societies
- * Morale and consensus building

If you are a competent engineer who has developed management skills, you likely are secure in your present career. Career growth, however, may also require developing personal relationships that will open new doors, and exhibiting skills in the areas such as those just listed.

The immediate objective of networking, in this context, is to cause people to appreciate your individual capabilities (it is not whom you know, but who knows you) -- those who can advance your career must want to do so. First, of course, they must visualize you assuming expanded responsibilities, or discover competencies they didn't know you possessed. But it's up to you to sell yourself.

How can you do this? The process is like any other selling process, with heavy emphasis on the first steps.

The introduction is key. You want to have in mind a purpose that you believe will make sense to them. You want to find -- and match -- their sense of humor.

The most sensitive way to learn about their interests is through non-directed questioning. Know when to stop -- if you can't speak to an interest, back off! Otherwise, be results-oriented -- conclude with an action plan, respect their short attention span, and follow up!

As a foreigner, of course, you face some special challenges in this regard. Your American colleagues may not know much about your cultural background, and their curiosity may not overcome their reluctance to inquire. So you want to prevent any discomfort, especially with your appearance or your name: "Call me Paul." Remember me? I'm the guy with the funny hat."

Networking is a perpetual process. Just as the time to plan your next career change is when you are most stable, so the time to begin networking is now. Not only are eye contact and a smile always in fashion, but in management, its hard to become a peer without behaving like one.



DAVID W. McCOMB

David W. McComb graduated from M.I.T. in Mechanical Engineering. He held line and staff positions in industry for ten years. Then, he joined Arthur D. Little, Inc. as a senior consultant where he currently leads company's quality management practice. He also is a seven time national sailing champion.

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B-2: PERSONAL DEVELOPMENT

FINANCIAL PLANNING

GIAN JANVEJA

FINANCIAL PLANNING

Many people are in great need of personal financial planning, more now than ever. Most have certain financial goals they want to meet, but such objectives are not always specifically defined.

Financial planning is a method through which we can achieve certain financial objectives with financial resources we have in our hands. It is a systematic arrangement worked out at the present to accomplish our goals of the future.

CHARACTERISTICS OF FINANCIAL PLANNING

- Need Oriented
- Comprehensive
- Consultative
- Analytic
- Synergistic
- Cyclical

OBJECTIVES OF FINANCIAL PLANNING

- Protection against personal risks
- Capital accumulation
- Provision for retirement (Income)
- Reduction of the Tax Burden
- Planning for Heirs/Estate Planning

STEPS IN PLANNING PROCESS

- Gathering information and preparation of financial statements
- Identification of objectives
- Analysis of present position and consideration of alternatives
- Development and implementation of the tax plan
- Periodic review and revision

SETTING YOUR OBJECTIVES

As a general principle it is desirable to formulate and then to state your objective as explicitly as possible.

HOW TO ACHIEVE

1. Through using Insurance, effectively
 - Term/Whole Life Insurance, Property Insurance and Liability Insurance
2. Accumulating capital by various investments tools
 - Maximizing current income
 - Averaging current income with moderate capital growth
 - Long Term capital growth

- Aggressive capital growth
- Tax deferred/Sheltered investments

Which can be achieved by:

- Buying common stocks
 - Mutual funds
 - Real Estate
 - Fixed income securities
3. Planning for Retirement
 - Pension and Profit Sharing Plans
 - Contribution to IRA
 - Keogh Funding
 - Stock Purchase Plan
 4. Income Tax Planning
 - Capital Gains
 - Receipts of non-taxing income
 - Planning sales of securities of tax losses
 - Making charitable contributions
 - Gift to minors
 - Outright gift of income producing property
 5. Estate Planning
 6. Planning for death taxes
 7. Planning for business interests



Gian Janveja

Gian Janveja received the B.E. degree in Textile Engineering from Punjab University, and the M.B.A. degree from Delhi School of Economics. He was a Technical Sales Officer for J.K. Synthetics, Ltd. He also was a Regional Sales Manager for Haryana State for Modi Tyres Ltd. until migrating to the U.S. in 1977. Then he joined Merrill Lynch, Pierce, Fenner and Smith where he has held several positions.

Currently, he is a Vice President of Merrill Lynch. Mr. Janveja has been very active in Indian Community activities; at present, he is serving as a treasurer of the Bhartiya Temple, Michigan.

B-2: PERSONAL DEVELOPMENT

STRESS MANAGEMENT

DR. PAUL SIVANANDHAM

In this very brief presentation, the concept and stress management would be introduced. Stress is a fact of day to day existence. Stress can be either beneficial or deleterious. Any demand placed upon us is a form of stress. How we respond to these demands is what determines whether stress is beneficial and growth enhancing or harmful to one's physical and emotional well being. While stress has been blamed for any number of modern ailments such as heart disease, high blood pressure, emotional illnesses etc., without stress there would be no growth and development. The challenge of stress can be a powerful influence in one's life enhancing creativity and adaptation to a changing environment.

In any program of stress management, it is important to understand what is and is not stress. It is useful to take an inventory of the things or situations in one's life that may be considered stressful. Having identified the common stressors in one's life, the next logical step is to assess one's individual response to those stressors. This varies from individual to individual. These responses could be physical, emotional or behavioural. The options for managing any particular stressor may be managing the situation or managing one's response to that particular stressor. The same techniques that are useful in solving technical problems can be used to solve some of the situations that cause stress. Often the situation cannot be changed and the only option left is one where one has to manage the feelings associated with that particular situation.

Active pursuit of good health by avoiding smoking, drugs, excessive alcohol intake and engaging regular exercise can greatly enhance one's resistance to stress and its harmful effects.

Finally, the qualities of a psychologically hardy individuals who is able to successfully handle stress and appears to be relatively protected from its harmful effects, would be described.

Handouts would be provided for participants to assess privately their individual stressors and their stress response.



Paul Sivanandham

Paul Sivanandham obtained the M.B.B.S. degree from Madras Medical College and completed internship towards the M.D. degree at St. John Hospital and residency and fellowship requirements in Internal Medicine at Henry Ford Hospital. Dr. Sivanandham is board certified in Internal Medicine and Endocrinology and Metabolism. Currently, he is a Chief Physician in Ford Motor Company.

Paul Sivanandham obtained the M.B.B.S. degree from Madras Medical College and completed internship towards the M.D. degree at St. John Hospital and residency and fellowship requirements

SESSION B-2: PERSONAL DEVELOPMENT

CONTRIBUTIONS TO COMMUNITY: DO WE NEED JUSTIFICATION ?

DR. D. SUDHAKAR RAO

In the annals of human civilization it has been said that successive generations acquire more knowledge and intelligence and less wisdom and virtue. In a defined life span, we have limited time but fortunately unlimited resources with which we can influence the next person, the generation or even the whole civilization. The key word here is "INFLUENCE". To belong now where or to be incapable of committing oneself is to be isolated; it is not ease but a personal burden.

We generally are very good about taking care of people close to us and there is absolutely nothing wrong with it because it is our responsibility. We have made commitment to that effect in the years past. On the other hand, we tend to be (again in general) indifferent to people beyond our self-defined confines. It appears as though we are looking for some justification when one is not needed in reality. It is our obligation to the community in which we live.

Most of us have been fortunate enough to be blessed with good education, venerable career with potential for advancement, an esteem in the society and not the least..riches. We enjoy all of these and many more attributes accorded to us and we share our riches with people close to us. However, we seem to have considerable difficulty in sharing with those that are not as fortunate. The reasons for this diabolically opposite stance by individuals is not quite clear. The answer may lie in the fact that we are generally "product oriented" (not necessarily materialistic!) and expect something in return that is tangible. A colloquial corollary would be: "what is in it for me"! Community service is not one of those tangible assets. But it is a virtue that will enrich your life with certainty. It will enhance your personal growth since you are the most important ingredient of the community. It gives you the satisfaction

that you have been part of that influence and the fulfillment that you were able to provide it. No one asks, they would no....it is somewhat demeaning....but it is our duty and obligation to the community in which we live and leave our children to grow.

"Our present state is conditioned by our past and what we do now will determine our (as well as our children's) future". It is not enough to be a person, you want to be a personality. It is not enough to be an individual, you want to be an individual with character and virtue. It is not simply enough to be human, you want to be humane. "For humanism man is the highest type of individual in existence and the service of man is the highest religion". After all, as this life lingers on and finally leaves, only the legacy that we leave behind will be left in this world...and I am sure that everyone of us have that deep longing.



Sudhakar Rao received the M.B.B.S. degree in Medicine in India and the M.D. degree in United States. He was a Visiting Instructor at Wayne State University and a Clinical Assistant Professor of Medicine at the University of Michigan. Currently, he is a Staff Physician at the Bone & Mineral Research

Laboratory. He is a member of numerous societies in medical science and has been a guest speaker at several conferences in U.S. and India. He has published over fifty technical papers in refereed journals and text books. He is a certified member of the American Board of Internal Medicine and a Fellow of the American College of Physicians.

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SESSION C: INDUSTRIAL CLIMATE

CHAIRMAN: MANOHAR MOTWANI

As many of our engineers have had extensive experience in the industry, they are either looking at changing to a new growing field or going into their own business. In both cases one has to do a lot of research and data collection before taking a big step. These sessions have been divided into two; first one relates to the industrial climate in the U.S. and the second one will cover the same as it applies to India.

Dr. Chandrupatla, professor at GMI, will start the session by describing the state of technology in the industry in the U.S. Dr. Delbert Gray, Director of Minority Business - the State of Michigan, will talk about how the State can help the minority businesses and what are the recommended areas of business in Michigan are. Mr. David Chaffin, Business Development Specialist with SBA, will describe how SBA can help in undertaking new small business ventures.

Mr. Hamrum will enlighten us on the technological progress in the Indian industry. Dr. N. Ramakrishnan, a businessman from Indiana, will demonstrate how technology transfer between U.S. and India can be used to set up a business. Finally, Mr. R. Sunderrajan of the Indian Investment Center, will give us examples of business opportunities available in India.



Manohar Motwani

specializing in Computer-Aided-Engineering. Currently, he is a staff Research Engineer at CPC division of General Motors Corporation.

Manohar Motwani received the B.S., M.S. and M.B.A. degrees from Wayne State University. He has worked for Chrysler Corporation and Ford Motor Company

C-1: INDUSTRIAL CLIMATE IN USA

TRENDS IN INDUSTRY - A GLOBAL VIEW

DR. TIRUPATHI CHANDRUPATLA

INTRODUCTION

The main objective of an industrial unit is to make profit. This must be achieved by turning out a quality product at the lowest price. The age old industrial monopoly does not exist any more. The name of the game is "competition". The present situation can be summed up as "compete or perish". With the improvements that have taken place in the areas of transportation and communication in the recent past, the world has become a small place to live in. The competition today is global in nature. This global war is further capped by ever varying exchange rates and highly unpredictable oil prices.

THE TREND

The world industry is responding to the above by enforcing some or all of the following steps:

- * Reducing waste
- * Computer integrated manufacturing
- * Efficient production processes and techniques
- * Improved quality
- * Increased flexibility
- * Long range planning
- * Continuous improvement
- * Technology transfer
- * Training

The way, in which the industry in a nation responds to this competition, depends on the national tradition. We now take a closer look at the industrial trends in various parts of the world.

UNITED STATES

The oil crunch of the early eighties has been an eye opener for the United States. The Japanese flooded the market with small cars of good fit and finish, for which the demand grew suddenly. The consumer started demanding quality and started comparing the American product with that made in Japan. This Japanese competition, in my view, has been a blessing in disguise, since the U.S. industry responded with increased stress on quality.

McClenahan(1) quotes the following analysis of the Boston University's School of Management, giving the competitive priorities assigned by the world's major manufacturers.

North America	Western Europe	Japan	Criteria
2	2	6	1. After sales service
5	5	7	2. Consistent quality
3	3	2	3. Dependable deliveries
6	4	3	4. Fast deliveries
4	6	8	5. High performance products
7	7	5	6. Low prices
1	1	4	7. Rapid design changes
8	8	1	8. Rapid volume changes

As seen above, there is more stress on quality in the U.S. I still observe lack of long-range planning in some areas. Typically an old machine may be equipped with modern feeding and monitoring devices, leading to questionable improvement in quality.

WESTERN EUROPE

A visit to a German factory will show what a well ordered work place means. The German worker takes pride in his work and creates an atmosphere in which things are done "just right" - *Grundlichkeit* (2). German products have a reputation for quality around the world. Another characteristic of the German industry is the employment of large numbers of technical personnel, ranging between 30 to 50 percent of the work force. Management is generally in the hands of those who rose through the ranks holding advanced engineering degrees. U.K. is revamping its industry with export to the U.S. as its main objective. Jacobson (3) compares the UK industry with industry in other nations. Sweden is exporting automation technology to the U.S.

JAPAN

Japan is a country with few natural resources. They rely on the import of raw materials and hence must export the finished goods to balance the trade. The awareness of this has led to turning out quality products meeting customer demands. In achieving this, they have turned toward employing the simple steps stated earlier. Ideas of constant improvement, expanding skills, process improvement, just-in-time (JIT) techniques, orderliness, quality consciousness, zero defects, the team approach, lifetime employment and training (2-6) are some of the elementary concepts that we are relearning from the Japanese. By their meticulous approach, the Japanese have achieved high productivity per man per annum and a low power consumption per unit produced (3).

OTHER COUNTRIES IN ASIA

India, Korea and Taiwan have a tremendous labor cost advantage. Favorable government regulations in Korea and Taiwan have led to large number of foreign companies shifting their production to these countries. In India, the capital goods are manufactured by public sector undertakings and are virtually protected monopolies.

In Korea and Taiwan, the capital goods are in the private sector (7). The tendency of alliances and collaborations that we see in the U.S. (8) is more prevalent in these Asian countries.

CONCLUSION

In short, there is "back to basics" atmosphere in the industry world wide. We are trying to relearn and implement the very principles which have been the basis of industrial success. Long range planning is essential for overcoming global competition.

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C-1: INDUSTRIAL CLIMATE IN USA

MINORITY BUSINESS OPPORTUNITIES

E. DELBERT GRAY

Minority-owned businesses are increasingly becoming a dynamic force in the marketplace. Successful minority-owned businesses are learning centers and serve as models for ambitious minority entrepreneurs. Recent generations of minority professionals have increased their management experience and technical knowledge through employment at major corporations.

Recognizing this abundance of skill and talent, steps have been taken in Michigan to assist minority entrepreneurs in moving into the economic mainstream. Today, new strategies and initiatives are in place to help minority business owners achieve their full potential. This contributes to Michigan's economic growth.



Dr. Delbert Gray

Dr. Delbert Gray received the B.A. degree in Industrial Education and Administration from the Tennessee State University, Masters degree in Guidance & Personnel Service and Ph. D. degree in Administration and Urban Psychology from Michigan State

University. He has held several seminars for major corporations. He has taught and consulted in the areas of Education, Employment, Entrepreneurialship in Business Development at Harvard University, University of Michigan and Michigan State University. Currently, he is the Director of Minority Business Enterprises for the State of Michigan, Dept. of Commerce.

C-1: INDUSTRIAL CLIMATE IN USA

ROLE OF SMALL BUSINESS ADMINISTRATION

DAVID R. CHAFFIN

I. SBA

- A) Independent Federal Agency, Est. 1954 - Assist, Counsel, Advocate for Small Business
- B) Mission: To put people in business, help them stay in business

II. OFFICE OF ADVOCACY

- A) Created in 1976 to protect, strengthen, represent, the nation's small businesses
- B) Focal point for small business views on policies that affect them
- C) Inform Small Business Community of issues
- D) Serve as voice for small business within Federal Government
- E) Recent Successes

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- C) Procurement Automated Source System
- D) Certified of Competency

IV. FINANCING

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- B) Certified Development Companies
- C) Size Standards
- D) Guaranteed Loan Program
- E) Direct Loans
- F) Other Loan Programs

V. BUSINESS DEVELOPMENT

- A) Service Corps of Retired Executives (SCORE)
- B) Small Business Development Centers
- C) Small Business Institute
- D) Management, Marketing & Technical Publications



David R. Chaffin


David R. Chaffin graduated with a degree in Criminal Justice from Michigan State University in 1975. He worked as an auditor for the Internal Revenue Service until 1979. Then he joined the Small Business Administration where he is currently the Business Development Officer. Mr.


Chaffin, his wife Debra, and their two children reside in Center Line, Michigan.


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C-2: INDUSTRIAL CLIMATE IN INDIA

TECHNOLOGICAL EVOLUTION IN INDIA

WILFRED W. HAMRUM

Year 2001 is not fourteen years away, but just around the corner!! For the first time in India the situation seems to forecast clearly, not only from the Government but mainly from the populace. Never has a country and its people taken stock of itself as now - signs are appearing all over - especially in the consumer goods area - the customer is not content with whatever is shoved down his throat but demanding Quality & Excellence in Products & Services and whenever & wherever the customer is treated as a KING - evolution is happening.

Quality, reliability and excellence are penetrating both in Government/Private sectors more choice to the consumer is at hand due to the liberalization policy with maximum emphasis on the "state of the art technology" infusion.

Since independence, India has claimed herself as having the "POTENTIAL" but only recently are we seeing the current flowing through a realization of taking research to applied industry, great change is underway.

India had an excuse for missing the industrial revolution as she was under colonial rule, but nobody is going to spare her if the electronic revolution is missed.

A new and applied educational policy is being framed which will spread education to the grass roots, utilizing computers & audio visual tools.

A great emphasis on seeking foreign investment is prevalent. The transfer of technology and the equipment including advanced management system is fully encouraged. A 4.5% growth must be doubled if India is to emerge as an economic power and this can be achieved if the Indians are firm in their convictions including pride & dignity in the work and the workers.

A whole new set of man & management techniques is emerging. The government is encouraging more joint ventures with non-resident based entities & encouraging NRI filtration in foreign companies participation in India.

The pillar of strength is completed with the technological sophistication of NRI especially in North America. They are wooed to set up shop in India. The products that are being encouraged there have tremendous potential in India with tremendous pool of well educated engineers and managers. Wide spread use of computer technology will transfer out of the country into a vibrant, prosperous society. The Government is doing its best in terms of incentives and eliminating red tape.



Wilfred W. Hamrum

Wilfred Hamrum, a migrant from Bombay, India worked for several years with the Institute of Cultural Affairs/Ecumenical Institute in various capacities ranging from Project Conception to Political & Economic Risk Analysis. He specializes in Technology Transfer, Barter & Counter Trade, Finance & Leasing, and in assisting Non-Resident Indians

desirous of establishing business ventures. Mr. Hamrum has been extremely successful in ventures involving several U.S. multinational companies, and has organized several high level trade delegations for various U.S. societies. He has set up the first non-resident Technology Park in Wardha, Maharashtra. Currently, he is the Chairman & Chief Executive Officer of World Enterprises, Inc. (USA) and Indus Technologies Pvt. Ltd., (India). Mr. Hamrum is also the President of the INDO-US Council and is on the board of directors of several multinational organizations.

C-2: INDUSTRIAL CLIMATE IN INDIA

TRANSFER OF TECHNOLOGY

DR. N. RAMAKRISHNAN

GENERAL

Over the last few years there has been growing interest in business involving transfer of technology between the U.S.A and India. Many of the earlier attempts to develop such business were unsuccessful due to conflicting objectives and a lack of understanding of the differences in business cultures between the two countries. To transfer technology successfully we must understand and deal with these differences.

Those who have lived and worked in both the Indian and U.S. industrial environments can understand and handle these differences best. The members of the American Society of Engineers from India have a distinct advantage in this respect over those who have been exposed only to either the U.S. or Indian environment. By taking up projects involving transfer of technology, they can contribute significantly to India's development and simultaneously fulfill their own career enhancement objectives in a most satisfying manner.

DIFFERENCES IN PERSPECTIVE

From an overall Indian perspective licensing agreements or joint ventures are viewed as a source of design and manufacturing technology both for meeting internal growth needs and to increase hard currency earning potential. To attain the latter objective, there is considerable emphasis on exporting the venture's products.

On the other hand, the U.S. companies who enter into such agreements do so with a view to increase sales to the large potential market in India. They normally do not want to import back to the U.S.A. for the fear of setting up competition to their own operations.

MARKET FORCES vs. STATE CONTROLS

In the U.S.A., free market forces dominate the economy. In India we have a mixed economy, which is a combination of public sector undertakings and private companies. The public sector is enormous and constitutes the major portion of industrial activity. Hence the technological requirements are influenced largely by centralized

decision making in government.

Again, planning for future growth and allocation of resources is done by the government through the Planning Commission. The government rather than the market decides on type of industrial growth and level of investment.

ORGANIZATIONAL OBJECTIVES

There are differences between the objectives of the different Government of India departments which could have a bearing on the type and range of technology transfer. One branch of the government could be in the process of implementing a modernization program to meet domestic needs. Another department could be interested in acquiring technology in the same field solely to boost exports. The domestic requirements and those for export could be quite different.

CHOICE OF RELEVANT TECHNOLOGY

A vital aspect of the entire technology transfer topic is the relevance of the choice of technology. The most important aspect is the applicability of the particular item within the total system of which it is to be a part. The technology or the particular item it is translated into cannot be introduced effectively into an environment if the required infrastructure and related ancillary technology is not developed to suit. Examples from actual experience highlight this aspect.

"LEAPFROGGING" STAGES OF MODERNIZATION

Certain types of industry practice though developed quite some time ago may not have been introduced in India as they did not then fit into the overall system. The need for these categories of technology may now be relevant in the overall context and it would be very feasible to adopt the technology within the category without going through the evolutionary sequence of such technology. This is clearly illustrated by the current technological needs of modernization in the goods transportation field.

IMPLEMENTATION

The implementation of the technology transfer can be by means of licensing the technology and or by means of a joint venture with equity participation. Frequently one has to assist with the market development effort. The market growth in the initial stages may not be as rapid as one may expect.

Choice of the right Indian partner is very important and cannot be

over emphasized. It is best for both partners if the technology transfer agreements are transferred in a phased manner over a period of time. It minimizes the risk for both parties and improves the prospects for a smooth transition of the technology transfer process.

CENTRALIZED NATURE OF DECISION MAKING

A major factor affecting the time required for implementation is the very highly centralized nature of decision making in Indian organizations. In contrast with comparable situations in American organizations, final decisions tend to be made at a very high level. This does not mean that the subjects are not dealt with at lower levels. Particularly in government organizations, both technical and commercial considerations are examined in considerable detail at various lower and intermediate levels but the ultimate approval is made by top management. It is very necessary to communicate effectively at these various levels as otherwise we could get a negative recommendation which could become a major stumbling block in the final approval process.

CONCLUSION

With an in depth understanding of the differences in business cultures and by careful selection of the relevant technology we can effectively reduce the difficulties and minimize the time requirements of the technology transfer process.



N. Ramakrishnan

N. Ramakrishnan received the B.S. degree in Physics from Madras University, the B.S.M.E. degree from Institution of Mechanical Engineers, London, and the M.B.A. degree from University of Chicago. Before migrating to the U.S., he held several responsible positions in the Indian Railway Service including

Deputy Chief Engineer of Chittaranjan Locomotive Works and Director of Planning at the Integral Coach Factory. He also held senior management positions in the U.S. which include General Manager Rail Car Assembly for the North American car operation before starting his own consultancy services company in the field of Technology Transfer to developing countries, the ILEX Corporation of which he is the President. He has also managed several international programs.

C-2: INDUSTRIAL CLIMATE IN INDIA

BUSINESS OPPORTUNITIES

R. SOUNDHIRA RAJAN

Among the developing countries which have attained independence during the post war period, India stands out in many respects. It is perhaps the only country in the world which has successfully experimented with economic planning under a democratic set up. Before Independence, the Indian economy was essentially a colonial economy with raw materials like jute, rubber, tea, coffee, etc., being the only industries of significance. Most of the manufactured goods were imported.

During the last four decades, the post independence era, India has a vibrant record of achievements in agriculture, industry, infrastructure, science and technology. In the field of agriculture, the country has not only achieved self sufficiency but also has a massive food grain reserves, inspite of more than doubling of population. In the industrial sector, the country has made considerable progress by establishing steel mills, fertilizer plants, oil refineries, petrochemical complexes, power generation and transmission equipment, automobile and truck units, locomotives and railway wagon plants, sugar factories and textile mills.

AMBITIOUS GROWTH PLANS

These achievements in agricultural as well as industrial sectors have been made possible by adoption of modern technology. Prospects for industrial growth in the coming year are quite promising. The Government of India has embarked upon ambitious growth plans which call for massive mobilization of resources, both internal and external.

The Non-Resident Indians (popularly known as NRI's) command sizeable resources in terms of finance, scientific talent and technical knowhow. They can play a prominent role in the economic and industrial development of the country by bringing their foreign exchange, technical skills and entrepreneurship combined with their knowledge of and contacts with international organizations.

DEFINITIONS OF NRI

A Non-Resident Indian is a person satisfying any one of the following criteria:

- * Indian citizen staying abroad for employment and/or business.
- * Person of Indian origin who has acquired foreign citizenship.
- * Overseas companies with minimum of 60 percent ownership by NRI's.
- * A foreign-born wife of a Non-Resident Indian.

For purposes of Indian Income tax, an overseas Indian is treated as a resident in India if he has lived in the country for more than six months during the preceding year and hence, income earned by him within the country becomes liable to income tax.

NRI INVESTMENT POLICY AND SCHEMES

Non-Resident Indians can invest up to 100 percent on non-repatriation basis in any partnership/proprietorship firm or limited companies (except those dealing in real estate business and agricultural/plantation activities). They can also place funds with Indian companies as deposits as per the rules and regulations prescribed for acceptance of such deposits.

Non-Resident Indian/persons of Indian origin and overseas corporate bodies, predominantly owned by NRI's, can make portfolio investment in equity shares/convertible debentures quoted on Indian stock exchanges, with full benefits of repatriation of capital invested and income earned thereon, up to 1 percent of the paid-up equity capital/ each series of convertible debentures individually and up to 5 percent of the total paid-up equity capital/each series of convertible debentures collectively.

Besides, they can make investment on repatriation basis in new issues of equity shares/convertible debentures of any new or existing company (other than a FERA - Foreign Exchange Regulation Act - Company) engaged in industrial/manufacturing activities or a hospital/diagnostic center project or a hotel project of 3 to 5 star category or in shipping industry up to 40 percent of new capital issues. The investment in new issues of new or existing companies can be up to 74 percent if it is made in industries listed in Appendix 1 (Priority Industries), export-oriented industries, hospital and hotel projects of 3 to 5 star categories.

A) Industrial Investment Facilities:

Non-Repatriable: Up to 100 percent in any partnership/proprietorship/joint stock companies except those dealing in real estate business or deriving income from agricultural/plantation activities.

Repatriable:

(i) 40 percent Scheme: In issues of new or existing companies raising capital through prospectus, up to a ceiling of four million rupees only if by private placement in a public limited company.

(ii) 74 percent Scheme:

- * Appendix I Priority Industries
- * Export-Oriented Industries
- * Hotels - 3 to 5 stars
- * Hospitals/Diagnostic Centers

B) Portfolio Investment in Shares/Debentures through Stock Exchanges:

Up to 1 percent of the equity capital of the company by individual NRI/companies, subject to an overall ceiling of 5 percent of the equity.

C) Deposits with Public Limited Companies:

For three years with full repatriation rights.

D) Deposits with Banks:

(i) Non-Resident External Account (NRE).

(ii) Foreign Currency Non-Resident Account (FCNR), either in U.S. Dollars or in British Pounds.

E) Investment in Government Securities of Unit Trust of India:

Facilities available both on repatriation and non-repatriation basis.

Interest on National Savings Certificates is 1 percent higher than offered locally.

SPECIAL TAX CONCESSIONS

1. NRI's are exempted from income tax of:

- * Interest income from NRE and FCNR accounts
- * Dividend income from units of UTI
- * Interest income from National Savings Certificates and other specified Government securities

2. Income of NRI's derived from shares (in forms of dividends), debentures and deposits with public limited companies are taxed at a concessional rate of 20 percent.

3. NRI's are eligible for a concessional rate of income tax of 20 percent on long term capital gains derived from the transfer of foreign exchange assets.

4. NRI's are eligible for wealth tax exemption for 7 years on assets brought by them, including NRE and FCNR balances at the time of their return to India for permanent settlement. Total exemption from wealth tax is also available on investments made in initial issues of private sector companies, National Savings Certificates and balances held in NRE and FCNR accounts.

5. No gift tax is applicable if such gifts are made of NRE/FCNR accounts or out of remittances from abroad.

FURTHER LIBERALIZATION FOR INVESTMENT

Government of India has recently announced certain relaxations/modifications in investment policies for NRI's. There are:

1. NRI's importing equipment under special scheme provided in the Import Policy 1985-88 are required to return to India for permanent settlement within a stipulated period. This period has recently been extended to two years.

2. NRI investment has been permitted in shipping industry up to 40 percent.

3. NRI's are permitted to invest even up to 100 percent of equity in sick units on repatriation basis.

4. NRI equity has been permitted up to 74 percent in setting up diagnostic centers.

5. NRI's can now submit applications for import of raw materials, components, consumables and spares (covering first year's requirement) along with the application for import of capital goods.

6. The benefit under Returning Indians Foreign Exchange Entitlement Scheme (RIFFE) has been increased from 25 percent to 50 percent of the amount brought into India by NRI's.

7. Government has constituted a Consultative Committee on NRI Investment Matter to consider suggestions from various NRI members/associations towards streamlining the procedures for NRI investment and suggestions for changes in existing NRI policy framework, etc.

TRENDS IN NRI INVESTMENT

The following table shows the latest figures as on September 30, 1986, with regard to NRI investment in various areas:

1. Bank deposits	in Rupees million
NRE Accounts	38,477.30
FCNR Accounts	29,441.40
2. Direct Investment:	
Repatriable:	
40 percent Scheme	5,384.20
74 percent Scheme	509.60
Non-repatriable	1,086.80

3. Portfolio Investment:

Repatriable	565.70
Non-repatriable	7.80

NOTE: 1 U.S. dollar equals to about 13 Indian Rupees.

IIC ASSISTING NRI INVESTORS

Indian Investment Center is an autonomous non-profit service organization set up by the Government of India under the Ministry of Finance, for promotion of foreign private investment in India.

It was established in 1961 and has 6 overseas offices located at New York, London, Frankfurt, Tokyo, Abu Dhabi and Singapore, with its head office at New Delhi.

IIC has been designated as a focal point for providing assistance to NRI investors. It provides authentic information to foreign as well as Non-Resident Indian investors on various aspects of Government of India's foreign investment policies, procedures and investment opportunities. It assists NRI's in identification of projects and filling up of various applications for industrial approvals and provides information on various facilities and incentives offered by the Government at Central as well as State levels.

For further information and guidance on the subject, NRI's may contact the New York Office of IIC located at 445 Park Avenue, New York, N.Y. 10022, U.S.A. (Phone: 212-753-3600).

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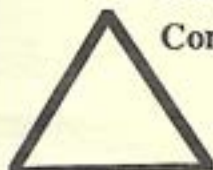
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