

PERSONAL SCHEDULE

	Sunday	Monday	Tuesday	Wednesday	Thursday
08:00 – 09:30 (A)		Plenary (Pavilion East & Pavilion West)	Plenary (Pavilion East & Pavilion West)	Plenary (Pavilion East & Pavilion West)	Plenary (Pavilion East & Pavilion West)
09:30 – 10:00 Coffee Break					
10:00 – 11:30 (B)					
11:30 – 13:30 Lunch Break					
13:30 – 15:00 (C)					
15:00 – 15:30 Coffee Break					
15:30 – 17:00 (D)					PICMET '05 Planning Session (Pavilion East)
19:00 – 22:00	Ice Breaker (Hilton Pavilion)	Dinner in the Park Blocks (1 block west of the Hilton)	Awards Banquet (Hilton Pavilion)	IEEE — OR Chapter Meeting and Dessert Reception (Hilton Pavilion)	

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PLENARIES

PLENARY SESSION — 1

DATE: MONDAY, JULY 21, 2003

TIME: 08:00 – 09:30

ROOM: PAVILION ROOM — PLAZA LEVEL

Session Chair: Gunnar Hambræus, Swedish Royal Academy of Engineering Sciences

1. Welcoming Statement from the U.S. Senator, Gordon Smith, delivered by Ryan Windsheimer
2. “Past, Present and Future of PICMET” by Dundar F. Kocaoglu
3. Keynote Speech by Rosalie Zobel: “Towards a Knowledge-Based Economy: European Research and Policy Goals”



Rosalie A. Zobel was born in England. She received a bachelor's degree in physics from Nottingham University, UK, in 1964, and a PhD in radiation physics from London University in 1967.

She started her career in the Information Technology industry in ICL in 1967, and later held positions as a systems engineer in CERN (Centre Européen pour la Recherche Nucléaire), Geneva, Switzerland, the Atomic Energy Research Establishment, Harwell, UK, and the Max-Planck Institut für Plasmaphysik, Garching, Germany. At the latter she became operations manager of the first CRAY Supercomputer centre in continental Europe.

In 1981 she moved to the USA and took up a position in the AT&T Headquarters, Basking Ridge, USA. She held positions as senior marketing manager for open systems software both for the USA and international markets, and was responsible from 1983-1986 for the international UNIX business. In 1986 she became senior marketing manager for information technology products in AT&T Japan.

She returned to Europe in 1988 as Deputy Head of Unit of the European Community's ESPRIT Business Systems unit. In 1991 she launched the initiative in Open Microprocessor systems (OMI). From 1995 she was the head of unit “Business systems, multimedia and microprocessor applications”, and EU-coordinator of the G7 Pilot Project “Global Marketplace for SMEs.” From 1999-2002 she was Director of “New Methods of Work and Electronic Commerce.” From 2003 she is

Director of “Components, Subsystems and Applications” in the Information Society Directorate-General of the European Commission.

ABSTRACT: eEurope, a political agenda aiming to bring Europe's businesses, citizens and administrations online by 2005, and the European Research Area, a policy objective targeting the creation of a European single market for research, are two European Union policies that aim to address key challenges for Europe's citizens and businesses in the new millennium. The paper shows that R&D efforts under successive European framework programmes for research, particularly in the domain of Information Society Technologies, have underpinned these policy initiatives and that research and policy efforts together can offer a coherent approach to create the largest knowledge-based economy in the world.

PLENARY SESSION — 2

DATE: TUESDAY, JULY 22, 2003

TIME: 08:00 – 09:30

ROOM: PAVILION ROOM — PLAZA LEVEL

Session Chair: Joseph W. Cox, Distinguished Service Professor, Oregon University System

1. Daniel Bernstine, President of Portland State University
2. Keynote Speech by Thomas H. Lipscomb: “Intellectual Property: The Key to the Growth of Broadband”



Thomas H. Lipscomb is chairman of The Center for the Digital Future, a New York-based public policy nonprofit foundation. He is the founder, and until recently, CEO and Chairman of Internet Commerce Corporation, Inc. (ICC), a public company which uses proprietary technology to create advantaged systems for the secure distribution, marketing, control and auditing of valuable digital information. He holds five patents in digital technology and ICC has received three industry awards for its technology. ICC received coverage by *Forbes*, *Fortune*, *Business Week*, *Newsweek*, *Wired Advertising Age*, *Crain's*, *Publishers' Weekly*, *Success* and other publications.

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ICC was named one of *Fortune* magazine's "25 Cool Companies" in technology (along with companies such as Netscape and Cisco Systems) and *Newsweek* listed Lipscomb as one of the "50 most influential people to watch in cyberspace." He was also a founder and former CEO of another e-commerce company, Wave Systems, Inc.

Mr. Lipscomb is one of the few executives with high-level experience in both print publishing and the world of electronic media. He has been both a magazine publisher of consumer magazines such as *The Ladies Home Journal* and a CEO in book publishing, where he was responsible for top bestsellers by authors as diverse as Agatha Christie, Susan Isaacs, Craig Claiborne, Jack Anderson and William Safire. Books he has published have won literary awards such as the Pulitzer Prize and National Book Awards. His most recent publishing position was as President of Times Books — The New York Times book division.

Mr. Lipscomb has had numerous speaking engagements at colleges and universities such as Harvard, Stanford, Pennsylvania, Columbia, Cairo University, Fordham, Howard, Indiana, Cooper Union, New York University and the College of William and Mary. He has additionally spoken to organizations such as The Davos World Economic Forum's Industry Summit, The Council on Foreign Relations, The Ambassadors' Roundtable, The New York Conference on Digital Publishing, The SIGCAT Foundation, The Association of American Publishers, The Seybold Conference, and The National Center for Automated Information Retrieval.

He has appeared on public affairs shows such as NBC's Today Show, The ABC Evening News, BBC Channel 1 News and News Night, Extra (Germany), News Netherlands, and PBS NPR.

He is the author of articles in *The New York Times*, *The Wall Street Journal*, *The Washington Post*, *Harpers*, *The Nation* etc, as well as a regular commentator for Intellectualcapital.com. He has served in numerous non-profit positions including the boards of PEN, the George Polk Award in Journalism, The International Center for Economic Growth, The New York University Center for Copyright in New Media, The Museum Digital Licensing Collective, The Governor's Island Technology Center and the Gibraltar-American Council. He is a Fellow of The Digital Copyright Forum and a member of The Council on Foreign Relations and The New York Academy of Sciences.

PLENARY SESSION — 3

DATE: WEDNESDAY, JULY 23, 2003

TIME: 08:00 – 09:30

ROOM: PAVILION ROOM — PLAZA LEVEL

Session Chair: Robert D. Dryden, Dean of the College of Engineering and Computer Science, Portland State University

1. Vera Katz, Mayor of Portland
2. Keynote Speech by Youngrak Choi: "Sources of Corporate Growth-Experiences of Korean Enterprises"



Dr. Youngrak Choi is the president of STEPI (Science & Technology Policy Institute) in S. Korea. He is the President of the Korean Society for Technology Management & Economics, and a member of the Presidential Advisory Council for Science & Technology.

ABSTRACT: In the last decade, several Korean enterprises have rapidly risen to become world market leaders in their specialized fields such as DRAM, CDMA, TFT-LCD among others. How did they achieve such a tremendous growth? What made them reach to that level in such a short period? This paper explores these questions by examining the sources of corporate growth in major Korean enterprises, with particular emphasis on the key elements of technological capabilities.

Before discussing individual cases, recent research on firm's capability building, and dealing with internal and external sectors, is reviewed. Then the paper begins in earnest to discuss empirical findings of the key success factors of corporate growth as well as the sources of technological competitiveness of well-known Korean enterprises. The paper argues that technological capability of such enterprises comes from active in-house technological learning process as well as agile technology strategies and efficient technology management systems.

The paper concludes by articulating the importance of dynamic firm capability as a source of corporate growth. Theoretical implications are drawn from the analysis of individual cases of Korean enterprises, and the possibility of establishing a Korean innovation model is discussed.

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PLENARY SESSION — 4

DATE: THURSDAY, JULY 24, 2003

TIME: 08:00 – 09:30

ROOM: PAVILION ROOM — PLAZA LEVEL

Session Chair: John Harker, CEO, InFocus Systems, Inc.

1. Mary Kay Tetreault, Provost, Portland State University
2. Keynote Speech by John McDougall: “Mastering Innovation”
3. Keynote Speech by George K. Chacko; “Risk-taking by Countries and Corporations on Unproven Technology”



John McDougall is a fellow of the Canadian Academy of Engineers, Honorary Colonel of the 8 Field Engineer Regiment, honorary life member of APEGGA, and honorary member of the Mexican College of Civil Engineers. He has served as an advisor to federal and provincial governments on economic development, construction, trade, technology and human resources.

An active participant in professional and community affairs, Mr. McDougall is a member of the Management Board of the Alberta Science and Research Authority, Director of the Canadian Academy of Engineers, special representative to the Alberta Chamber of Resources and Director of St John Ambulance. He is also the past president of the Canadian Council of Professional Engineers, APEGGA and the Edmonton Chamber of Commerce. He is listed in *Who's Who in Canada*, *Who's Who in Canadian Engineering* and *Who's Who in America* and was named one of the 50 most influential Albertans in 1998.

He is married to Irene and has three grown sons — John, Jordan and Michael and one stepson — Kyle.

ABSTRACT: Innovation is the buzzword of the new millennium, associated with everything from the latest face creams and razors to advances in high technology. Unfortunately, too few have a common understanding of what truly constitutes innovation. And as long as the mystery around innovation persists, there will be those who take advantage of that lack of awareness for their own self-interests — as in any industry. John McDougall, president and CEO of the Alberta Research

Council Inc., challenges some of the more widely held assumptions surrounding innovation, and attempts to take the mystery out of what it takes to succeed in today's innovation game.

Dr. George K. Chacko, Professor Emeritus of Systems Management at the University of Southern California since 1994, and currently Professor of Management of Technology at Multimedia University, which is designed to become the brain trust for Malaysia's Multimedia Super Corridor, is author, editor and/or contributor of 56 books published in the U.S., Europe and the United Kingdom on topics ranging from Operations Research and



Management Science to Strategies of Survival of Hitech Corporations in the 20th Century. He brings to his Chairmanship (now Senior Advisorship) of the Centre of Excellence in Management of Technology at Multimedia University 29 years of experience in American industry and business, 15 years of executive experience and 14 years of consulting experience. He is Consultant Partner to the National Information Technology Council, Malaysia. A member of the International Editorial Board of the journal *Technological Forecasting and Social Change*, Professor Chacko's 17 biographical listings include *Who's Who In America*, *Who's Who In The World* and *Who's Who In Science and Engineering*.

ABSTRACT: Since the birth of the Internet circa 1994, 20th century industrial economy's stable market shares of the permanent oligopolies in American industries (automobiles, steel, aluminum, petroleum, chemicals) are bid to be supplanted by the unstable mind shares of temporary monopolies in hardware and software of the Internet/ Information/Knowledge Economy. To survive and succeed, the Chief 'Ntreprenuer Officer (CNO) must function in concert with the Chief Technology Officer (CTO) as two lungs of the human heart do, and invest significant resources of the country or corporation in the unborn technology vision of the CTO to create and cultivate both the micro and the macro economy. Chasing the unstable mind shares of the Internet Era, corporate/country CNOs have to constantly form, dissolve, and re-form alliances, depending on the demands of the market. Because of the short history (1994-2030) of the Internet, this plenary address discusses corporate CNOs both from the Internet Era and the pre-Internet Era, as well as de facto country CNOs such as Churchill, Roosevelt and Kennedy.

TUTORIALS

CREATING BUSINESS VALUE WITH TECHNOLOGY: METRICS AND OUTCOMES

MONDAY, JULY 21; 10:00 – 11:30; PAVILION EAST

Speaker: Eliezer Geisler, Stuart Graduate School of Business

How does technology contribute to the creation of business and commercial value to organizations? What do companies want from the investments in their technology, and what can technology deliver? How do we measure the outputs from technology and the contributions they make to the creation of business value? This tutorial introduces the metrics we use to measure business value, and the methods to apply these metrics in organizations. The focus is on discussion of what and how to measure, and what are the strengths and the weaknesses of the metrics and methods in the arsenal of today's organizations. It's not enough to know that we gain value with our investments in technology. The difficult task is to know how to measure these gains. Furthermore, the tutorial expands the various categories of business value that can be created with technology and how best to measure them.



Eliezer (Elie) Geisler is Professor and Associate Dean for Research at the Stuart Graduate School of Business, Illinois Institute of Technology. He holds a doctorate from the Kellogg School at Northwestern University. Dr. Geisler is the author of about 90 papers in the areas of technology and innovation management, the

evaluation of R&D, science and technology, and the management of medical technology. He is the author of 8 books, including: *The Metrics of Science and Technology* (2000), and *Creating Value with Science and Technology* (2001). Dr. Geisler was founder and editor of the Department of Information Technology for the *IEEE Transactions on Engineering Management*, and is associate editor of the *International Journal of Healthcare Technology and Management*. He consulted for major corporations and for many federal departments, such as Defense, Commerce, EPA, Energy, and NASA. Dr Geisler is Director of IIT's Center for the Management of Medical Technology (CMMT). He co-authored the book: *Management of Medical Technology: Theory, Practice and Cases* (Kluwer, 1998). Dr. Geisler co-chairs the annual Conference on the Hospital of the Future. His most recent book is: *Installing and Managing Workable Knowledge Management Systems* (Praeger, 2003, co-authored with Rubenstein).

CLOSING THE STRATEGIC PLAN / IMPLEMENTATION GAP: THE LOGITECH BENCHMARK

MONDAY, JULY 21; 10:00 – 11:30; PAVILION WEST

Speakers: Donald E. White, Cal Poly University, San Luis Obispo; John R. Patton, Cadence Management Corporation; Spencer Johnson, Logitech; Nolan Perry, Logitech

The authors have spent 3 years researching the critical links between the strategic plan and the implementation of projects identified in it. The paper will first review the most common differences in perspective between executives and professionals in project management. This will be followed by a brief review of the Strategic Management By Projects (SMBP) model, and the Critical Integrative Links (CILs) for closing the gap between the strategic vision and project implementation. The authors will also present research results to-date based on the SMBP model. Two-thirds of the paper and session will be devoted to reviewing the benchmark study of Logitech, a company that has successfully implemented the SMBP model. Logitech has achieved tight linkage through the CILs and other processes of the SMBP model. As a result, the benchmark company has attained a high-velocity, flexible, and focused strategic implementation process. This process has led to significant improvements in competitive advantage and business results. Both the general model for closing the strategic vision / implementation gap and the pragmatic Logitech benchmark will be presented. The benchmark case will enable participants to take away major lessons learned, do's and don'ts, and the critical success factors for applying the general SMBP model to their organizations.



Dr. Don White is Professor of Industrial and Manufacturing Engineering at Cal Poly University, San Luis Obispo, CA. His education includes both engineering (B.S.M.E. U.C. Berkeley, Ph.D. Case Western Reserve University) and business (M.B.A. Pepperdine University). Dr. White's has had 19 years industry experience (engineering and managerial) with: Pacific Telesis, ARCO, Exxon, Bell Labs, and Lawrence National Labs in diverse functional and cross-functional areas (e.g., strategic planning and implementation, project/product development and management, marketing/manufacturing/financial operations). At Cal Poly, his research interests have included: new product development, integrated change

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management, economic decision making, strategic management, and project management. Also, he was instrumental in establishing the interdisciplinary M.B.A./M.S. Engineering Management Program (EMP) and its Industry/University Partnership.



John Patton is President of CADENCE Management Corporation. John's leadership in the development and dissemination of state-of-the-art project management techniques has established him as one of the industry's leading "change masters." John's consulting experience includes assignments on numerous multi-million dollar new product development projects around the world. His career has encompassed every aspect of project management, from strategic planning to construction and product introductions. John's recent assignments include course delivery and consulting in Spanish to Latin American companies, new product launches in Europe and training in Japan.



Nolan Perry is Director of Project Management Services for Logitech. He has over 11 years experience at Logitech, and is responsible for many of their corporate-level new product development processes, tools, and metrics. He has a total of 23 years of project management experience in the high-tech industry. He has extensive professional

experience in strategic planning, new product development, operations management, and in individual and multi-project management. He and his co-presenter, Spencer Johnson, were the two people most involved in the design and improvement of Logitech's product development life cycle and supporting tools.



Spencer Johnson is currently Director of Product Marketing at Logitech and previously was Director of the Fast Cycle Time project during the initial three years of its development at Logitech. He has over 12 years experience with Logitech in different Business Units. In his 25+ years of industry experience, Spencer has held

various management and "hands-on" positions in engineering, quality, project management, business development and product marketing. He has extensive professional experience in strategic planning, new

product development, operations management, and in individual and multi-project management. He and his co-presenter, Nolan Perry, were the two people most involved in the design and improvement of Logitech's product development life cycle and supporting tools.

RESHAPING TECHNICAL ORGANIZATIONS AND THEIR PEOPLE FOR THE 21ST CENTURY

MONDAY, JULY 21; 10:00 – 11:30; COUNCIL SUITE

Speaker: James M. Ragusa, University of Central Florida

We are living in a changing and very dynamic world filled with economic uncertainties, fierce global competition, shrinking budgets, changing political systems, and global terrorism. With entry into the 21st century there has been a realization that we are evolving from an information age to one that requires that knowledge be developed and managed in technology workers. Required to support innovation and sustained development success will be organizations that are more proactive, agile, organic, and responsive to a full range of stakeholder needs. A challenge will be to integrate technologies of varying degrees of maturity with knowledge workers through the development of a complementary and supportive implementation strategy. This tutorial focuses on the drivers, needs, and directions of our contemporary global society from a technology management perspective. Identified are several new organizational environment considerations and strategies, and technology worker management systems, processes, and methods derived from several case studies and contemporary management, organizational, and behavioral research. Illustrated and discussed are transformation strategies, foundations, methods developed, and lessons learned as these organizations successfully refocused and moved from physical to virtual, distributed environments to improve

productivity, and shrink time-to-market times and costs while working with reduced resources.



Dr. James M. Ragusa is an Associate Professor in Industrial Engineering and Management Systems, College of Engineering at the University of Central Florida (UCF) in Orlando. Has

undergraduate and advanced degrees from the University of Illinois (Champaign-Urbana) and the Florida State University in engineering, business, and R&D management. Has

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authored numerous articles and several books related to technology and its management. Has served on both business and management faculties at UCF since 1973. Has worked for AT&T, served as a U.S. Air Force R&D Officer, and for twenty-three years held various technical and management positions for NASA at the Kennedy Space Center. Has extensive research experience with NASA, the U.S. Army and U.S. Navy, and has served as a consultant for various private sector organizations.

PLANNING AND IMPLEMENTING INTERNATIONAL TECHNOLOGY TRANSFER IN DEVELOPING COUNTRIES

MONDAY, JULY 21; 10:00 – 11:30; STUDIO SUITE

Speaker: Krishnamurthy Ramanathan, University of Western Sydney

The liberalization of many developing economies and greater emphasis on the protection of intellectual property, has led to firms in developing countries regarding international technology transfer (ITT) as an important vehicle for acquiring technology that would enhance their competitiveness in both local and global markets. In today's international business setting, depending on the attributes of the technology, its intended use, and the motivations of the transferee and transferor, a wide range of ITT modalities are available to transferees of technology. Unfortunately, many transferees in developing countries tend to regard ITT as a relatively predictable process whereby transferee organizations acquire, assimilate, and then improve foreign technology, often with government assistance. However, evidence exists to show that there are many areas of concern and adequate attention is often not paid to critical managerial issues, technical details, and internal organizational processes when planning and implementing ITT projects. This tutorial will present a systematic approach for planning and implementing ITT in a developing country setting.



K. Ramanathan is presently Senior Lecture and Coordinator of all the postgraduate programs in Operations Management, Quality Management, and Engineering Management at the

The approach will focus on the transferee (buyer) perspective and will be illustrated through the use of two brief case studies. Important guidelines will also be outlined that could facilitate the effective planning and implementation of ITT projects.

School of Management, University of Western Sydney, Australia. He has extensive technology management teaching and research experience in the Asia-Pacific region since 1986 and has been Expert on Technology Management at the Economic and Social Commission of Asia and the Pacific of the United Nations and Associate Professor at the Asian Institute of Technology, Bangkok, Thailand. He has published over 20 technical papers in prestigious international refereed journals such as *Technological Forecasting and Social Change*, *Technovation*, *International Journal of Technology Management*, and *Science and Public Policy*, and has undertaken consulting work in technology management for the United Nations, Asian Development Bank, European Commission DG XII, and the Ministries of Science and Technology of the Governments of Indonesia, the Philippines, Pakistan, Malaysia, and Thailand. He has been a Visiting Professor at the Helsinki School of Economics and Business Administration (Finland), the Institute of Industrial Policy Studies (Korea).

TECHNOLOGY ROADMAPPING: DEVELOPING A NEEDS-DRIVEN TECHNOLOGY STRATEGY

MONDAY, JULY 21; 13:30 – 15:00; EXECUTIVE SUITE

Speaker: Olin H. Bray, Sandia National Laboratories



Technology roadmapping, a needs-driven technology planning process, has gained acceptance in the US and internationally. This tutorial explains what a technology roadmap is, its benefits, when it is appropriate, the key concepts, the steps in developing a roadmap (at either the industry or corporate level), and the contents of a technology roadmap. It also identifies the lessons learned from customizing a generic technology roadmapping process for specific applications. Technology roadmapping helps decision-makers with strategic technology planning and selection decisions. These decisions drive the scope of the roadmap, which determines the critical system requirements. The technology roadmap provides a strategy and plan for satisfying those requirements. The core team develops the framework, without which the components of the roadmap cannot be coordinated and integrated. Technology areas provide a way to decompose the problem into manageable areas, each with its own technology drivers/metrics and alternatives. The tutorial concludes with lessons learned from

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customizing and applying the generic approach. Olin Bray, a Principal Member Technical Staff at Sandia National Laboratories and one of the developers of the generic roadmapping process, has customized it for many applications. He has presented roadmapping papers and is working on a roadmapping book.

CHALLENGES FOR TECHNOLOGY MANAGEMENT IN LESS INDUSTRIALISED ECONOMIES

MONDAY, JULY 21; 13:30 – 15:00; STUDIO SUITE

Speaker: Gordon Lister, University of Cape Town

Less industrialized economies (LIEs) need to dramatically increase productive skill and employment levels to encourage economic growth and reduce poverty levels. Skill scarcity must be overcome for products and services to be produced efficiently for competition in global markets. Labour creation requires increasing demand for, and output of, either current, or new, products or services and the use of labour-intensive economically competitive work methods, often within a legislative environment. To use indigenous skills and exploit niche markets, innovation and entrepreneurialism is required to originate marketable products and services. Domestic demand volumes for products and services in LIEs are normally low. Workers must often be multi-skilled; production and outputs must be flexible while minimizing costs and capital inputs. The technology management challenge in such environments is to apply the discipline appropriately, so that new opportunities for providing employment growth are identified and exploited without the need for large capital investment. It requires the continuous provision of appropriate education and training, often in difficult circumstances, and the encouragement of innovative and entrepreneurial activities. Education and skills training of new entrants must suitably prepare them for the economic and social environments in which they will work. To achieve this educators in “developing countries” must overcome a dearth of resources, and avoid discipline “fundamentals” that may not be appropriate to the local environment and students. This tutorial will discuss technology challenges in less industrialized economies. Examples from industry and education in Kenya and South Africa will be used to illustrate and suggest successful approaches in such environments.

UNDERSTANDING CULTURE, LANGUAGE, AND COMMUNICATION STYLES: A KEY TO BUSINESS SUCCESS IN GLOBAL MARKETS

MONDAY, JULY 21; 13:30 – 15:00; SENATE SUITE

Speaker: German Nunez, Oregon Health and Science University

That different cultures use different styles and forms of communication is a well known fact that has been noted by numerous social scientists. Edward T. Hall has postulated that communication styles range from low-context to high-context depending of how topics unrelated to the main object of the interaction are either brought in or filtered out of the communication. Geert Hofstede has studied how organizations operate in different cultures. He has determined that the operation styles vary depending on whether the host culture is individualist or collectivist.

While the communication style in most of the business in the USA can be characterized as low-context within very individualistic organization, the communication style of societies in many of the emerging markets such as Latin America, Africa, and China follow styles more closely identified with high-context, collectivist societies. Such cultural divergence in communications, can not only slow down partnerships, market development, and hinder business processes, but sometimes also create unnecessary misunderstandings that can result in business loss to competitors that are more sensitive to the nuances of the different cultures where they operate.

This workshop will present an overview of cultural communication styles and their impact on business development strategies in global markets. Topics will include, but will not be limited to: Brief concepts related to culture. The culturally dependent notion of time, money, profit, “the bottom line,” long term investment, short term investment, and other business concepts. Hierarchy structures and decision making styles germane to various cultures. (Who is doing business? Who will make the final decision?) Control. —Who is in charged? Identification of some of the business Do’s and Don’ts of various cultures, including attiring, communication and courtesies that are gender specific. Identify, where pertinent, social and political expectations that will impact business decisions. Help identify indicators of communication style to assist individuals to effectively interact with business associates in private, multinational, or government organizations. The use of local language in business interactions: Pro’s and Con’s. Cases. Discussion.

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German R. Nunez G., Ph.D. is Vice Provost for Diversity and Multicultural Affairs at Oregon Health Sciences University (OHSU) in Portland, Oregon. Born in Caracas, Venezuela, he has lived and worked in various countries in Europe and Latin America.

He is the author of more than 50 publications and in 1990, after several invention disclosures, he was awarded a United States patent for the design of a surgical table. His current academic interests include cultural anthropology and social anthropology.

Dr. Núñez is a former faculty at West Virginia University, Florida International University, and University of Colorado at Boulder where he held ranks of Assistant Professor, Associate Professor and Full Professor respectively in the fields of Industrial Engineering, and Neurosurgery; Industrial and Systems Engineering; and Aerospace Engineering Sciences.

During the early 1980's, Dr. Núñez served as Manager for Organization and Manpower for one of General Electric's most important international divisions. Known for his forensic work, he has also served as an international consultant to a wide array of law firms, businesses, industries and governments worldwide.

For the past eighteen years Dr. Núñez has dedicated most of his professional life to promoting and understanding the values of diversity in our society, and the importance of understanding the idiosyncrasy of individuals and social groups in order to effectively provide products and services that meet the needs of consumers.

INTELLECTUAL PROPERTY

MONDAY, JULY 21; 13:30 – 15:00; CABINET SUITE

Speaker: Julie L. Reed, Marger Johnson & McCollom

Intellectual property has become a critically important aspect of technology management. Technology managers need to convert an organization's intellectual capital into intellectual property, use of the intellectual property to further the organization's goals, and plan the intellectual property acquisition and leveraging process. This tutorial provides an overview of the basic forms of intellectual property in the United States, and gives examples of typical processes in US companies on how to capture intellectual capital in the form of intellectual property. Different approaches for both the offensive and defensive uses of intellectual property are covered, as well as the

need for and considerations in the strategic planning and management of intellectual property. The tutorial will also include a brief discussion of the differences between key types of intellectual property in the US and other countries and issues companies from outside the US may need to address when protecting intellectual property in the US.



Julie Reed is a Patent Attorney with Marger Johnson & McCollum. She received her B.S. in Electrical Engineering from Washington State University in 1988, MBA from the University of Dallas in 1994, and J.D. from Southern Methodist University in 1995. Before joining Marger Johnson & McCollum, she was the Patent Counsel for Sharp

Labs of America. Prior to that she worked as the Intellectual Property Strategy Manager for the Digital Imaging division of Texas Instruments. Her technical expertise includes electronics, digital image processing, micromechanical devices, Internet applications, and protocols and standards. Atty. Reed has patent experience in Taiwan, Japan, China, India and Europe. She is licensed to practice before the Texas State Bar, Washington State Bar, and the U.S. Patent and Trademark Office. She is also a member of the IP section of American Bar Association.

INVESTIGATING THE EFFECT OF KNOWLEDGE PRACTICES ON IT PROJECT SUCCESS

MONDAY, JULY 21; 13:30 – 15:00; BROADWAY-4

Speaker: Blaize Reich, Simon Fraser University

In this tutorial, I would be engaging the audience in a dialogue about a new applied research stream – one that combines elements from information technology, project management, and knowledge management. The research premise is described below.

In this research program, we propose that a re-framing of IT projects as knowledge creation and collaboration sites might suggest new ways to increase their success rate. Although traditional project management research and practice suggests that factors such as lack of executive commitment and user involvement are stumbling blocks to success; knowledge management literature would suggest that combining the knowledge bases of team members and managing the creation and utilization of new knowledge as the project progresses are much more difficult problems. If information systems projects are

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re-conceptualized using knowledge management concepts, an investigation of practices such as communities of practice, experimentation, shared problem solving, and dialogue may shed surface new ideas to improve their success rate.

The tutorial presentation would include existing research plus models that combine existing frameworks such as the knowledge life cycle, knowledge typologies (e.g. company-specific knowledge, process knowledge, cultural knowledge, software product knowledge), the project life cycle, and KMS typologies. Also to be presented would be a research agenda to investigate this topic.

It would be the express purpose of this tutorial to generate reflection and dialogue on the topic, models, and research agenda and to solicit feedback from the audience.



Dr. Blaize Horner Reich is a member of the Faculty of Business Administration, Simon Fraser University. Her courses focus on the identification, implementation, and management of information technology in organizations.

Dr. Reich's early research explored several facets of the strategic use of information technology. Her PhD thesis investigated the linkage between business and information technology objectives. She has completed research into local organizations' business process reengineering projects and the companies' hiring practices for entry-level information technology jobs.

With colleagues from UBC and Queen's, Dr. Reich completed research into the creation of information technology competence in business managers. She is also investigating IT personnel transitions with colleagues from Ohio and Utah and E-Commerce adoption in SMEs with colleagues from SFU.

Dr. Reich has extensive experience as a practitioner, manager, and consultant in the information technology field. She led early developments in data modelling and data administration. Her decade-long consulting practise focused on information technology planning and business strategy facilitation.

EARNED VALUE MANAGEMENT METHOD

TUESDAY, JULY 22; 15:30 – 17:00; PAVILION WEST

Speaker: Frank T. Anbari, The George Washington University

The Earned Value Analysis Management Method (often

referred to as EVM or EVA) integrates three critical elements of project management: scope, cost and time management. It requires the periodic monitoring of actual expenditures and physical scope accomplishments. EVM supports the periodic evaluation of project performance against the project's schedule and budget. It allows the calculation of cost and schedule variances, and performance indices, and allows forecasting of project cost and time at completion. This powerful method provides early indications of expected project results based on project performance and highlights the possible need for preventive and corrective action. Therefore, EVM allows the project manager and project team to adjust project strategy based on cost and schedule requirements, actual project performance and trends, as well as project objectives and the environment within which the project is being conducted. This tutorial/workshop presents the major aspects of EVM, using simplified terminology. It provides graphical tools, extensions, simplifications, and examples to enhance the effective application of this important method in project management. The tutorial/workshop provides for active audience participation to allow participants to gain usable skills in applying EVM to enhance the success of their projects.

VALUE-ADDED PICMET: MOT KNOWLEDGE MINING

TUESDAY, JULY 22; 15:30 – 17:00; BROADWAY-2

Speakers: Alan L. Porter, Georgia Institute of Technology; Robert J. Watts, TACOM

Conferences, such as PICMET, compile the knowledge of their field. However, that knowledge is horribly underutilized. In the past, attendees had no good way to capture this knowledge for ongoing personal use. Rarely did they share this knowledge effectively with their organizations. We can change this. The availability of conference CD's provides an information resource that can be mined to track developments in the field and to access desired items when needed. We illustrate for MOT by spotlighting trends over the 1997, 1999, 2001, and 2003 PICMET CD's. We demonstrate how you can use text mining software to see the "big MOT picture" in various perspectives, as well as to zoom in on particular topics. For those who wish to try out these knowledge exploitation approaches, we provide a VantagePoint Reader software with which you can mine the combined PICMET CD content. We discuss ideas on how you can disseminate PICMET knowledge to your colleagues via your intranet sites.

TUTORIALS



Alan L. Porter's major concentration is technology intelligence, forecasting and assessment. He has led development of "technology opportunities analysis" — mining electronic, bibliographic data sources to generate intelligence on emerging technologies. He received a B.S. in Chemical Engineering from Caltech

(1967) and a PhD in Engineering Psychology from UCLA (1972). Dr. Porter is Director of R&D for Search Technology, Inc., Norcross, GA, pursuing application of VantagePoint software to analyze emerging technologies and profile research domains. He is author or editor of 12 books, some 175 articles, and co-founded the International Association for Impact Assessment (IAIA) in 1980, serving as president (1995-96). He is also Professor Emeritus of Industrial & Systems Engineering, and of Public Policy at Georgia Tech, where he remains involved with the Technology Policy and Assessment Center.

Robert Watts currently works for the Tank-Automotive and Armaments Command (TACOM), Advanced Vehicle Technologies (AVT). As AVT team leader, Bob supports TARDEC science and technology strategic planning and marketing. He also manages and participates in the development of the competitive intelligence software system, Technology Opportunities Analysis of Scientific Information System (Tech OASIS). Tech OASIS automates the identification and visualization of relationships inherent in sets (i.e., hundreds or thousands) of literature abstracts. Prior to his NAC assignment, he served as Science Adviser to the Commanding Generals of both VII Corps and 7th Army Training Command (7ATC). He has a bachelor of science in aeronautical engineering from Ohio State University. He also has masters degrees in industrial engineering from Texas A&M and in management of technology from the National Technological University (NTU).

PROJECT STRATEGY: THE PATH TO ACHIEVING COMPETITIVE ADVANTAGE/VALUE

WEDNESDAY, JULY 23; 10:00 – 11:30; PAVILION WEST

Speaker: Michael Poli, Stevens Institute of Technology

Nike's "Just Do It!" is the prevailing attitude around projects. Schedule and budget dominate. When projects are more than just tactical or operational, enormous opportunities become available. Building market share,



extending product lines, increasing revenue, satisfying customers, and building for the future are more important success measures. It is through the project that the company implements its strategic intent. Project Strategy is essential to achieving better results and increasing the necessary value from the project. It is an overarching set of

guidelines to be used by the project in making decisions and taking action. Project Strategy is in alignment with the business, marketing and operational strategies. It helps focus on the desired strategic results. Various frameworks are available to aid management: Michael Porter's generic strategies and value chain concept; Wheelwright and Clark's project portfolio framework; Shenhar's UCP (Uncertainty, Complexity and Pace) model; Roger's Technology Adoption Life Cycle; and Shenhar's Success Dimensions. This presentation shows how to use these frameworks to define a Project Strategy that will help you achieve your corporate strategic intent.

NEW PRODUCT DEVELOPMENT USING ADAPTIVE PRODUCT MANAGEMENT

WEDNESDAY, JULY 23; 13:30 – 15:00; BROADWAY-1

Speaker: Vince Socci, On Target Technology Development

New product development engineers promote adaptive prototyping as a method to manage unpredictable engineering development. However, project managers reject the business challenges, risks and uncertainties of the adaptive development environment. Adaptive Product Management (APM) bridges the gap between unpredictable, adaptive technology development and predictive, practical product management techniques. The technical merits and management challenges of using adaptive development in today's customer-centric business environment are discussed. APM forces a product development paradigm shift from execution of known constraints to learning of unknown product potential. A "pull" development strategy creates a lean, value-add product development cycle. APM uses time-phased product demands to map development. APM implementation strategies, best practices and performance control warnings are outlined. Participants will learn how to effectively deploy APM in their organizations and new technology development applications.

TUTORIALS

STRATEGIC IMPLEMENTATION OF SIX SIGMA AND PROJECT MANAGEMENT

WEDNESDAY, JULY 23; 13:30 – 15:00; SENATE SUITE

Speaker: Frank T. Anbari, The George Washington University

Organizational strategy includes 1) improvement of current technologies, which can be pursued through Six Sigma initiatives, and 2) introduction of new technologies, which can be carried out as coordinated projects and programs. Successful implementation and growing organizational interest in the Six Sigma management method have been exploding in recent years. It is rapidly becoming a major force driving the strategy of numerous successful organizations. Involvement in Six Sigma projects is becoming an important career path requirement in many organizations. Understanding the main concepts of the Six Sigma method provides important opportunities in Six Sigma project leadership, coaching, mentoring, and training. This tutorial/workshop provides a clear understanding of the Six Sigma management method, the roles of various organizational participants in achieving the objectives of Six Sigma projects, and the integration of project management and Six Sigma strategies. It helps the participants identify and define appropriate Six Sigma projects, and the main elements of managing them successfully. It ensures participants understand the roles of Green Belts, Black Belts, Master Black Belts, Champions and other participants in managing Six Sigma projects. The tutorial/workshop provides for active audience participation to allow participants to fully capture the essence of Six Sigma project management.



Frank T. Anbari (anbarif@aol.com) (Ph.D. Project Management and Quality Enhancement, MBA, MS Engineering, PMP, PE, and ASQ Certified Six Sigma Black Belt) is a faculty member of the Project Management Program at the George Washington University. He taught in the graduate Programs at Drexel University, Penn State University,

and the University of Texas at Dallas. He developed and taught seminars in project management, quality management, information technology, and statistical process control for many private industry and public sector organizations. Dr. Anbari gained extensive industrial experience serving in project leadership positions at the National Railroad Passenger Corporation (Amtrak), Day and Zimmermann, and American Water Works Service Company. He served as

examiner (1993-1995) and alumni examiner (1999-2000) for the Malcolm Baldrige National Quality Award, as member of the ANSI/ASQ ISO Standards Committees (1996-1999), and as member of the Editorial Review Boards of Quality Management Journal (1993-1998) and Project Management Journal (2000-Present).

T-CAT — A TECHNOLOGY COMMERCIALIZATION ASSESSMENT TOOL

THURSDAY, JULY 24; 10:00 – 11:30; COUNCIL SUITE

Speakers: Simon Brightman, University of Ottawa, Canada; David Large, University of Ottawa, Canada

Managers of publicly funded labs routinely attempt to assess which of their technologies have genuine commercial potential, and then to assess which commercialization mechanism (e.g., license versus spinout) might be optimal. Many tools do exist to assist these assessments, but spotty commercialization results suggest that there is room for improvement. T-CAT© is a new spreadsheet-based software tool designed to improve the reliability of the commercial potential assessment, and, unlike other tools, the reliability of the commercialization mechanism assessment. It has been derived from a rigorous literature review, and several in-depth interviews with senior managers from leading North American labs. It features:

- Dual stage analysis: an initial AlphaScreen 20-factor assessment of commercial potential; and a subsequent BetaScreen 46-factor re-assessment, including a directional indication of the optimal commercialization mechanism.
- Assessment factors in five categories: Technology; Market; Technology Champion; Management; and Financials.
- User interfaces that are: quantitative, qualitative and/or graphical; interactive; easy to use; and customizable.

The disciplined use of T-CAT© may help managers of publicly funded labs to: standardize their assessment processes; identify the most critical determinants of commercialization success; and elevate the consistency and degree of commercialization success.

TECHNO — ECONOMICS: TECHNOLOGICAL EVOLUTION, THE LAWS OF TECHNO-ECONOMICS, AND ANALYTICAL CONCEPTS, TOOLS AND TECHNIQUES FOR STRATEGIC AND

TUTORIALS

OPERATIONAL MANAGEMENT OF TECHNO-BUSINESSES

THURSDAY, JULY 24; 13:30 – 15:00; FORUM SUITE

Speaker: Peter J. Rafferty, TECHEX Management

Techno-economics characterises the technological and economic phenomenology of technological evolution. It is a comprehensive, quantitative and qualitative discipline for analysing and integrating numerous technological, competitiveness, market and economic factors in a wide range of techno-business analysis and decision-making. Systematic characterisation of technological evolution demonstrates that, for all techno-businesses, explicit, generic, quantifiable relationships exist between the key factors of production (time, technology, productivity, capacity, capital, energy, labour, and raw materials or components), and their competitiveness, market presence and economic results. Techno-economics was formulated as a generic discipline as a result of the author's extensive experience in techno-economic analyses associated with managing numerous technology research and development programs, in commercialising innovative new technologies, in designing and launching new plants, and in trouble-shooting and turning around ageing plants, during a time of dynamic technological and market evolution in environmental techno-businesses. The discipline was also partly inspired by the works of Professor Robert Solow "Technology is the dominant engine of economic growth, with human capital investment in second place" and Professor Wickham Skinner "The roots of major industrial change lie in economics and technology." Tutorial handout based on the book "Techno-Economics" (360 pages, 15 chapters, 60 diagrams and exhibits, including Teach-Yourself-Techno-Economics Software; pre-publication copies available at the Conference).

Peter J. Rafferty, B.E. (Civil Engineering), M.App.Sc. (Environmental Science & Technology), M.Eng.Sc. (Nuclear Engineering), M.B.A (Technology Management). Mr. Rafferty has 30 years' experience in civil and environmental engineering, radioactive and hazardous waste management, technology management, and extensive experience in techno-financial analysis; he has lectured on techno-economics in the U.S. and Europe. He translated "Technological Excellence: Getting The Right Technologies, and Getting Them Right" (translated and adapted from the French by Jacques Morin). Mr. Rafferty currently lives in Australia

BUSINESS INTELLIGENCE FOR AGILE MANUFACTURING

THURSDAY, JULY 24; 15:30 – 17:00; BROADWAY-2

Speaker: Jack Elmore, Microsoft Corporation

Reducing cycle and manufacturing times, adapting quickly to market changes and ensuring competitive advantage is paramount for manufacturers, and business intelligence is what's going to help them to do just that — in a cost-effective manner. Business intelligence technology provides manufacturers with a unique view into the supply chain enabling them to gather, store, analyze, and access business decision-making data. In this presentation, the speaker will describe how companies can effectively apply technology to gain greater visibility into their business thereby successfully accelerating productivity and actual time to market. He will look at the upcoming release of Office 2003, its tools and benefits, and how it will help manufacturers increase efficiency and make informed decisions around supply chain management and inventory control. Attendees will learn:

- IT obstacles faced in the strategic application of business intelligence in manufacturing
- How to reduce dependence on the IT department for data reports
- Examples of how business intelligence is applied to improve corporate accountability, resource allocation, and customer service
- How to accelerate data analysis and reporting, fine tune enterprise resource planning, and reshape design processes according to market demands



Jack Elmore, a Microsoft Business Productivity Advisor, works with enterprise organizations in the Pacific Northwest and elsewhere to implement technology-driven productivity gains and solutions for pressing business problems. Mr. Elmore's areas of special practice include business intelligence applications in the areas of human resources, sales and marketing, financial services, telecommunications and manufacturing. Before assuming his current position, Mr. Elmore was Lead Project Manager for custom voice and computer telephony integration for Interactive Northwest and Senior Instructor in MS Word and Excel, Lotus 1-2-3, Quattro Pro, and Windows for New Horizons.... Recent speaking engagements include featured speaker at Office Deployment Conference 2000 and Institute of Management Accountants conference.

WORKSHOPS

Sunday, July 20, 2003

Morning Workshops (8:30 am – 12:30 pm)

WS-1: MANAGING R&D AND TECHNOLOGY-INTENSIVE PROJECTS

By Dr. Hans J. Thamhain, Bentley College, USA

This intensive, workshop-style seminar addresses the daunting challenges of stimulating innovation and dealing with risk, uncertainty, time and resource pressures. The seminar provides seasoned managers and project leaders in R&D and technology-intensive environments with a forum for discussing contemporary management concepts, tools and techniques suitable for these dynamic and often non-linear processes.

The emphasis is on best practices. Working interactively in small groups, participants will analyze complex project scenarios, discuss challenging problems, share experiences and work out potential solutions. Participants will also apply the latest techniques for planning, tracking and controlling technical projects, compressing the time-to-market cycles, managing innovation under cost and time constraints, establishing early warning systems, leading self-directed project teams, and dealing with interruptions, risks, conflict and commitment.



Hans J. Thamhain specializes in technology-based project management. Hans Thamhain is a Professor of Management, and Director of MOT and Project Management Programs at Bentley College, Boston. His industrial experience includes twenty years of management positions with high-technology companies: GTE/Verizon, General Electric and

ITT. Hans Thamhain has PhD, MBA, MSEE and BSEE degrees, and has written over seventy research papers and five professional reference books in project and technology management. Dr. Thamhain is the recipient of the Distinguished Contribution Award from the Project Management Institute in 1998 and the IEEE Engineering Manager of the Year 2000 Award. He is certified as New Product Development Professional, NPDP, and Project Management Professional, PMP. Additional Profile: Marquis Who's Who in America

WS-2: SCANNING NEW TECHNOLOGIES FOR STRATEGIC OPPORTUNITIES

By Rias J. van Wyk, University of Minnesota, USA

New technologies represent new opportunities — to improve products, enhance processes, refine decision support systems and create new industries. This seminar shows participants how to map and track new technological developments as a basis for reshaping corporate strategy. The seminar demonstrates the use of Technoscan®, a global map of technology trends.



Rias van Wyk holds the William R. Sweatt Chair in the Management of Technology at the University of Minnesota. Van Wyk has been called the leading authority on strategic technology analysis (STA). He has over twenty five years of experience in this field; providing professional support to technology executives, teaching executive and academic

programs and doing research. He has advised companies like American Medical Systems, Entegris, Keithley Instruments, Minnesota Technology Inc., Rosemount and Seagate. In addition to his consulting work he has twenty five years of board level experience. He has degrees from three universities including a Master's degree from Harvard focusing on science, technology and public policy. He is a Founding Member of the International Association for Management of Technology (IAMOT) and serves on its Executive Committee. He is a member of the National Association of Corporate Directors.

WS-3: CORPORATE VENTURE TEAMS

By Dr. David Wilemon, Syracuse University, USA

An excellent approach for managing emerging opportunities is a venture team. This seminar gives fresh perspectives and insights about successfully managing new ventures. Specifically, we will focus on how to: Manage the 'fuzzy front-end' of a new technology; organize venture teams within mature organizations; create & maintain organizational support; keep the venture team focused and motivated; manage venture complexity; overcome bureaucratic inertia; use discovery and learning-based planning; and examine why venture teams succeed and fail. Participants will also learn the critical success factors necessary for companies to be highly agile, imaginative, and successful in managing innovative new ventures.

WORKSHOPS



Dr. David Wilemon, is the Snyder Professor of Innovation Management & Entrepreneurship at Syracuse University. He is widely recognized for his pioneering work on corporate venture management, project management, & managing emerging markets & technologies. He has consulted with many companies including, 3M, GE, IBM, Apple,

Welch Allyn, Bechtel, Terma Elektronik, Schlumberger, ICI Pharmaceuticals, Upjohn, Anaren, Ohmeda, GTE, Corning, & AT&T. He has published in Journal of Marketing, Academy of Management Journal, Sloan Management Review, Transactions on Engineering Management, R&D Management, Columbia Journal of world Business, & Organizational Dynamics. He is a founding member of the Product Development & Management Association.

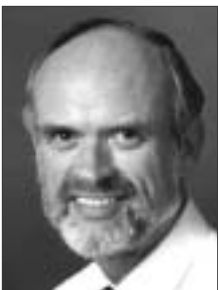
Sunday, July 20, 2003

Afternoon Workshops (1:30 pm – 5:30 pm)

WS-4 MANAGING RISK EFFECTIVELY IN PRODUCT DEVELOPMENT PROJECTS

By Preston G. Smith, New Product Dynamics

Product development projects often experience difficulties that could have been avoided. These problems usually surface late in the project, when they are most disruptive and most difficult and costly to resolve. We will learn how to manage such risks by working through a five-step process of identifying, assessing, prioritizing, planning for, and monitoring project risks and applying this process to a case-study project. You will apply a very useful model of a risk that gives you an X-ray view of the factors critical to resolving the risk, rather than just treating its symptoms. This workshop will provide you with a process and tools to implement an effective risk management program on your next project.



Preston Smith is best known for his work in shortening product development cycle times and the associated book, *Developing Products in Half the Time*. This workshop grew out of his more recent work in reducing the variation in cycle time, which has resulted in a recent book: *Proactive Risk Management*. Since 1986, Preston has been a management

consultant and trainer in product development methodologies. He holds a PhD in engineering and has

twenty years of engineering and management experience with companies including Bell Labs, IBM, and General Motors before becoming an independent consultant.

WS-5 FAST-START TECHNOLOGY ROADMAPPING

By Dr. Rob Phaal and Dr. D.R. Probert, University of Cambridge, England

Technology roadmapping is widely used in industry to link market and business drivers and goals to product and technology development. This workshop focuses on a practical approach for initiating roadmapping ('T-Plan'), the result of applied research at the University of Cambridge, based on more than 35 applications in a wide range of sectors and organisation types. The workshop will provide participants with an overview of the technology roadmapping approach, including theory and practice. A group-based activity will give participants a taste of how a roadmap is developed, and discussion will focus on the practical challenges of implementing the technique .



Robert Phaal joined the Centre for Technology Management at Cambridge University in 1997, and is currently engaged in a research programme to investigate strategic technology management issues in business. The particular focus of the research project is how to link technology resources to company objectives, in order to develop a set

of practical and well-founded tools to support technology strategy and planning initiatives in the firm. Outputs include a guide for supporting 'fast-start' technology roadmapping, supported by a tool catalogue. Robert has a background in mechanical engineering, consulting and contract research.



David Probert is currently the Head of the Centre for Technology Management. He had an industrial career with Marks and Spencer and Philips for 18 years before returning to Cambridge in 1991. His experience covers a wide range of industrial engineering and management disciplines in the UK and overseas. Following his research

in the area of make-or-buy, he recently published 'Developing a make or buy strategy for manufacturing business' with the Institute of Electrical Engineers.

WORKSHOPS

WS-6 KEY COMPONENTS FOR CREATIVITY IN VIRTUAL TEAMS

By Dr. Jill Nemiro, California State Polytechnic University, Pomona, USA

Virtual teams with an eye for creativity are helping businesses meet new market conditions. This workshop will offer a theoretical model and series of practical tools to assist in designing and implementing highly creative virtual teams. Specifically, we will focus on how to: design appropriate process and work design approaches, and communication protocols; develop strong task and interpersonal connection among team members; and establish a social climate necessary for creativity in virtual teams. Participants will be able to personalize the material presented to their own situations and create a set of strategies for improvement relevant to their own virtual teams.



Jill Nemiro is an Assistant Professor in the Behavioral Sciences Department at California State Polytechnic University, Pomona; and an adjunct professor in the Human Resources Design Masters Program at Claremont Graduate University. She has published numerous articles and book chapters on creativity and virtual teams, and has also won

awards for papers in those areas. Her most recent work is a book she co-edited entitled, *The Collaborative Work Systems Fieldbook: Strategies for Building Successful Teams* (Jossey-Bass). Before teaching, Jill worked on teams in the film industry for many years. Dr. Nemiro received her Ph.D. in Organizational Psychology from Claremont Graduate University.

WS-7 BUILDING AND TESTING A TECHNOLOGY BUSINESS STRATEGY USING SIMULATION MODELING

By Dr. John A. Bers, Vanderbilt University, USA

In this workshop, participants will learn to construct and test a technology business strategy using Excel and @RISK, a modeling add-in based on Monte Carlo simulation. This technique allows simultaneous consideration of multiple dimensions of uncertainty in the business and technical environment. Working in teams, participants will build three alternative strategies for a new product launch based on technology leadership, market leadership, and operational leadership. Using the modeling tool they will test each strategy's financial prospects under a wide range of uncertainty, and to

identify, measure, and optimize its critical success factors. Prerequisites: familiarity with Excel spreadsheets and access to a laptop computer. NO mathematical knowledge is required. The modeling software is downloadable at no cost.



Dr. John A. Bers is Associate Professor of the Practice of the Management of Technology at Vanderbilt University's School of Engineering. His interests focus on how technology and industrial companies identify actual and hidden assets and realize their business value in current and emerging markets.

John's career in strategic marketing and business development spans thirty years and several high-technology industries. Before joining the faculty at Vanderbilt, John managed strategic analysis and business development at Northern Telecom Inc., and strategic and technical planning for the Gas Research Institute, the research and development arm of the U.S. natural gas industry. He has also been in private practice as a technology marketing consultant.

John's formal education includes a B.Sc. from Yale University in physical chemistry, an MBA from the University of Chicago, an interdisciplinary doctorate from Harvard in planning and business strategy, and a Ph.D. in Management of Technology from Vanderbilt University. He has been an active member of several national and regional professional societies and has made numerous presentations on strategic business development and repositioning to national and regional audiences.

John also recently developed and taught one of the nation's first pure Internet graduate level courses in the marketing of advanced technology products and services. Other university teaching assignments have included courses in the dynamics of technological change, technology policy, business policy, principles of marketing, industrial marketing, electronic commerce, and management of technology. He currently serves on the faculty of National Technological University, the nation's leading provider of advanced technical education and training from a distance. His NTU students voted him as a 2002 Outstanding Instructor.