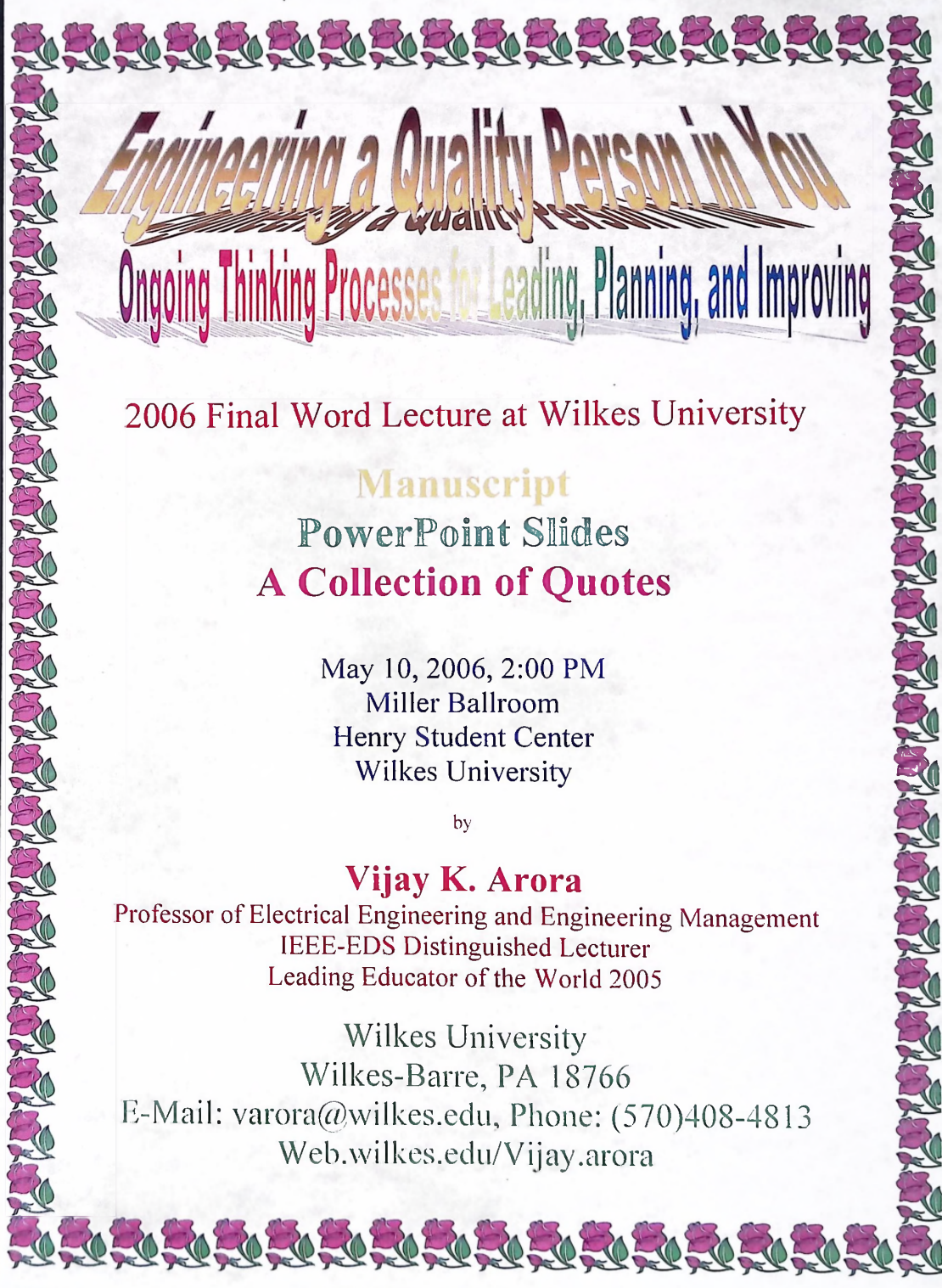




Engineering a Quality Person in You

Ongoing Thinking Processes for Leading, Planning, and Improving

2006 Final Word Lecture at Wilkes University

Manuscript
PowerPoint Slides
A Collection of Quotes

May 10, 2006, 2:00 PM
Miller Ballroom
Henry Student Center
Wilkes University

by

Vijay K. Arora

Professor of Electrical Engineering and Engineering Management
IEEE-EDS Distinguished Lecturer
Leading Educator of the World 2005

Wilkes University
Wilkes-Barre, PA 18766
E-Mail: varora@wilkes.edu, Phone: (570)408-4813
Web.wilkes.edu/Vijay.arora

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Wilkes University
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Final Word

Its Premise and Context

The premise of the Final Word Lecture is that the lecturer has only six months to live and would like to sum up a career of teaching, scholarship and service for colleagues, students, and friends. While Professor Arora is, in fact, healthy, the hypothesized death adds urgency and focus to the lecture. The idea is borrowed from the University of Michigan's Last Lecture.

Biographical Sketch

Professor Arora's life journey originated from the fields of Punjab in the British India. All his primary and secondary education was completed in Kurukshetra (Haryana, India), the land where Krishna is stated to have delivered his Final Word (Vedanta or end of the books of knowledge) in most revered *Bhagwadgita*. He obtained his M. Sc. and B. Sc. (Honours) degrees from Kurukshetra University. After a short instinct of teaching at the Regional College of Engineering, Professor Arora took a quantum leap from the East to the West by undertaking his Ph. D. work at the University of Colorado, Boulder. When circumstances demanded, he took another quantum leap to the deserts of the Kingdom of Saudi Arabia. He was among the first batch of expatriates charged with creating the curriculum in the colleges of medicine, dentistry, science, engineering, and graduate studies at the University of Riyadh. During 1981-1982, he was on a sabbatical leave at the University of Illinois, Urbana. He returned to the U. S. A in 1985 as a Professor of Electrical Engineering at Wilkes University in 1985 and made Mountain Top his permanent home. After receiving tenure at Wilkes University, Professor Arora was in Japan in 1990-91, shuttling between Tokyo and Wilkes-Barre as a foreign expert on the Quantum Wave Project of the Japan Research and Development Corporation. In 1991-93, He decided to venture into a lifestyle at the confluence of the East and the West by joining the National University of Singapore as a Visiting Professor and Consultant. He returned to Singapore's Nanyang Technological University at the turn of the millennium. Professor Arora was honored as the Sir Gledden Visiting Fellow at the University of Western Australia during 2000-2001.

Professor Arora has numerous honors and accolades to his credit, including being listed in a number of biographical references. His works on scientific, education, and management matters are published in prestigious journals. He has been invited to give public lectures in universities, research institutes and professional conferences around the world. He chaired ASEE Mid-Atlantic Conference on Re-Engineering Academia held at Wilkes University in November 1996 and NanoSingapore2006 in January 2006. As he finishes this Final Word, he is on his way to Belgrade on May 12 to deliver his keynote address on The Failure of Ohm's Law at the International Conference on Microelectronics, May 14-16, 2006. This will follow the distinguished lecture tour of Russia culminating into a public lecture on Quantum Nano-Engineering at the Technical University of Vienna on May 30th, 2006.

1. Introduction

It is indeed a pleasure to be honored to give a public lecture in my own natural habitat after giving public lectures in alien and not-so-alien lands. By presenting this lecture, I am assuming, even though hypothetical, that I have only 6 months to live and must impart a lifetime of accumulated wisdom in a micro-century (roughly 50 minutes). The idea of a Final Word has been prevalent in ancient civilization of India, the land of my birth, where a dying old person will give his blessings and valued advice to the younger generation. In the epic *Ramayana*, Rama wins over a very wise demon king, Ravana, who was defeated in a war for kidnapping Rama's wife Sita. While Ravana was on the deathbed, Rama sent his brother Laxman to get the final words of wisdom from Ravana, a learned scholar, so his wisdom could be utilized effectively in ruling the kingdom that Rama was soon to take over. That episode tells us that a quality person, as Rama is revered, will always welcome a contrarian point of view in search of fullness (holistic thinking).

A quality organization comprises quality people who value quality principles and renew themselves as the conditions change inside and outside their workplace and workspace. The stakeholders in a quality organization have alert minds ready to take initiatives and make things happen even if odds are against them. In fact, they anticipate and are able to manage uncertainty and unforeseen circumstances. Engineering is a process not a discipline as it is normally perceived. Scientists study the world as it exists (a process of analysis) while engineers synthesize ideas to dream up or innovate a process, procedure, design, or product to transform the world around them.¹ Engineering is derived from the word *engine* that drives the multitude of compartments behind it. *Engine* itself derives from Latin word *ingeniotorem* meaning ingenious. In that scenario a Chief Executive Officer (CEO) of an organization may be described as an engineer driving the organization to its destination (goal) in a grand journey.¹ How? Not by miracles, but by following common sense and using his ingenuity. There is a lot of common nonsense going on in every organization.² An effective and efficient CEO will cultivate teamwork and cooperation in search of win-win thinking paradigms leading the organization of the people by the people and for the people to unprecedented heights. For this enlightened CEO, the success is not derived from a few people in the board room but by the quality people at all levels, no matter what their status and role.

It is befitting that I start this presentation with a little history of my life's journey from a village in the now-extinct British Empire of India to the freedom-loving United States of America.

2. My Life's Journey

I was born in British India in Multan, now a part of Pakistan. The British came to India disguised as traders in the form of the East India Company. Britain saw an opportunity to rule a nation that was fragmented due to the animosity of its regional rulers. In the process of providing cover to the faithful, they created a policy of *divide and rule* which resulted in mistrust among many segments of society. That policy was clearly visible when the inevitable division of India was being enforced. This continues to be a way of life even after four decades of embracing freedom.

Modern India evolved when on August 15, 1947 the British decided to quit India due to the coordinated non-violence movement of Mahatama Gandhi. Mahatama (translated as noble soul)

led Indians to boycott all British products and disobey unethical practices. At the same time, there were also violent struggles by other revolutionaries like Bhagat Singh and Subhash Chandra Bose. A new state, Pakistan, on Islamic principles, was carved out of what was then known as British India which continues to be revered as Mother India. The modern Indian fragment opted to remain secular. Ironically, the number of Muslims living in India outnumber those in Islamic Pakistan. In 1971, what was then East Pakistan became an independent state of Bangladesh. The issue this time was not the religion but the language and culture of the people of East Pakistan. At the time of the 1947 partition, the treasury was equally divided between the two fragments in spite of the fact that India had more inhabitants and Islamic Pakistan had more land per 100,000 of population. Kashmir continues to be a disputed divided state because its Hindu ruler opted to side with India while its population remains predominantly Islamic. As the Indian declaration of independence was being made, we Hindus were told to leave all our possessions and take cover for our life as Hindu-Muslim riots broke out, driving most Hindus out of Pakistan. My birth state, Punjab (five waters), named after five rivers that made it the bread basket of India, like Bengal in the West, was divided into two pieces, its eastern part went to India and western part to West Pakistan. Overnight, in the name of freedom, I, along with my family and friends, became a refugee in my own land. My father decided to make his future and that of his family by becoming a vendor selling fruits that developed into a business enterprise. My father lived a noble life contributing to the community and always running his business on ethical principles, infusing quality and service at all levels. He taught us that one cannot be a happy and satisfied person unless the community in which one lives in is in a happy and satisfied mode. Community service or *Kar Sewa* (service with your own hands) continues to be a hallmark of Punjab, whose inhabitants fiercely fought battles with invaders crossing into India through Afghanistan.

An important lesson to learn here is that a state exploiting religious principles for political purposes will find it difficult to provide a quality life to its citizens. During the British rule, many members of the Muslim league, headed by Mohammad Jinnah, the founder of Pakistan, were defeated by a secular Congress, its Muslim candidates capturing many more seats than the Muslim League could capture. This humiliation was, perhaps, the drive behind Jinnah to demand a separate state of Pakistan. The bloodshed that followed cannot be described in words.

Recently, in February 2006, secular India was the major focus of attention at the World Economic Forum in Davos, Switzerland, where participants crowded the Cabana bar dining on chicken tikka and nan, gulping down Kingfisher beer, and dancing to the tunes of Bollywood music. Bollywood is a name given to Bombay filmdom (the Indian equivalent of Hollywood). This shift of perception occurred because many from the Indian diaspora returned to India with practices that made them successful businesspeople in the Silicon Valley. This was the birth of a Silicon Valley in India (Bangalore with Hyderabad to follow). The Indian Silicon Valley is now a popular destination for American firms like Intel, IBM, Microsoft, etc. The United States was an excellent vantage point for the Indian diaspora to form a vision to unleash the vast untapped intellectual capital buried in their spiritual upbringings. The migration of business from America to India, outsourcing as we now know it, is creating new paradigms, e. g., medical tourism, education tourism, cyber-research. Technology is playing a predominant role. As Americans close their shops at the end of the day, Japan (the land of the rising sun) along with China and India, wakes up. The design work that Americans left before retiring for the day is picked up by

Asians and then Europeans so the product or process development is now not only global but also round-the-clock activity. Even the United Nations recognized that India should not consider its diaspora as a brain drain, but utilize it as a brain bank. Liberal reforms of the Indian Government are creating a paradigm of mutual cooperation with America and the world in all aspects of global economy. President Bush is eager to conclude the nuclear deal with India through the U.S. Congress. He is also putting aside a budget for Americans to learn Hindi, Persian, Arabic, and Chinese languages.

I never appreciated the routine and repetitive learning that Britain-based education in India provided. Even today, this mode of education is prevalent in Asia and many other countries of the world. I decided to look elsewhere to satisfy my intellectual curiosity. That brought me to America to pursue my graduate studies at the University of Colorado, where I thoroughly enjoyed the company of my educators, mentors, graduate students, international personalities, and others. One thing that amazed me deeply was the honesty, ethics, and moral values held by the people around me. Also, I learned how to solve problems on contemporary issues, not yet found in the textbook. During my stay at the University of Colorado, I came to realize the value of trustworthiness in transforming an organization, teamwork in completing a task, and above all the value of a supportive environment for ideas to flourish. That was a wonderful start of my American journey, indeed a journey throughout the planet we call Earth.

When I thought I found a world of my dreams where I could pursue my intellectual curiosity, reality struck on completion of my Ph. D. in 1973. Many of you may remember those dreadful years of recession. If a person were to land any kind of job, that person would hide his intellectual background, especially the Ph. D. At the same time, propelled by the newly discovered "black gold," Arabs were looking for American degree holders to start universities from scratch. I ended up in Riyadh, the capital of Saudi Arabia, to initiate curricular development at the University of Riyadh (re-named King Saud University) Medical School, operated by the University of London. On arrival in Riyadh, I felt as if I were thrown back in the history of mankind some 5000 years ago. Not only were the facilities primitive, so were their thinking processes. We expatriates shared a lot of adventures while living through those primitive situations. Within a short span, the country flourished with modern facilities based on Western styles. The expatriates made that change possible. That experience directed me to a new reality: The intellectual capital, brainpower, technical know-how, human imagination and moral values of the people supersede capital as a paradigm critical to success. One positive aspect of my Saudi experience was that, as an expatriate faculty, I was eligible to receive travel tickets for all family members to return to the United States every summer. By exchanging those tickets for around-the-world excursions, I was able to sense the history, values, and customs of various groups of people that broadened my thinking and appreciation of other cultures.

In 1985, I returned to the United States and made Wilkes University my base from which to launch my international adventures. The year 1990-91 saw me in Japan as a foreign expert on a team dedicated to a multidisciplinary Quantum Wave Project of the Exploratory Research for the Advanced Technology (ERATO) Program of the Japan Research and Development Corporation. I was amazed to find that what Indian scriptures talk, Japanese practice. This transfer of knowledge occurred because of spiritual values contained in the Vedas (books of knowledge). It spread to all oriental countries through the proliferation of Buddhism which taught compassion

and non-violence. It was there that I had a chance to experience the quality processes as advocated by Deming,³ an MIT professor. To a Japanese mind, if he or she does not put a fair amount of effort and pay attention to the details in developing a product or providing service, he or she is a sinner in the eyes of God. They do believe in the existence of God. That is why on January 1 most of the Japanese are in temples praying for success in the year to follow while at the same time thanking God for whatever they got in the past year. For them, a guest like me is treated as if sent to their country by God. If you ever happen to be in Japan at the year end in December, you will be invited to a multitude of functions to say farewell to the year just passed. I could appreciate Japan's success by noticing quality in all aspects and at all levels.

After the Japanese experience I went on a sabbatical adventure to the National University of Singapore, a country that rose from the land of pirates to be the most modern cosmopolitan city-state that I have ever lived in. The planning and maintenance infrastructure of Singaporeans so impressed me that I decided to revisit them at the turn of the millennium, albeit at a different university—Nanyang Technological University. Both universities have facilities that I judge to be the best in the world. Following the advice of its visiting faculty, they created a student population comprising 25% foreign students with plans to integrate them into the Singapore economy. At about the same time, I was also a visiting professor under the Sir Gledden Fellow Program of the University of Western Australia. I gave public lectures on how engineers can add value to the society they live in. Most recently, I visited Universiti Teknologi Malaysia to advise them on the engineering curriculum. The desirable attributes of the curriculum are based on the guidelines of the Board of Engineers Malaysia which aspires to be a member of the Washington Accord. Executed in 1989, the Washington Accord is an agreement among the engineering quality assurance organizations of several nations that recognizes the substantial equivalency of programs accredited by those organizations, and recommends that the graduates of accredited programs in any of the signatory countries be recognized by the other countries as having met the academic requirements for entry into the practice of engineering. In June 2003, signatory countries of the Washington Accord met in Rotorua, New Zealand and conferred provisional membership status to Germany, Malaysia, and Singapore—specifically, to the organizations that have responsibility for the quality assurance of professional engineering undergraduate degree programs at academic institutions in those nations. Japan was admitted to this elite club although India did not succeed in its bid for admission, primarily because of lack of quality standards for admission into their engineering programs.

There are a number of outcomes that arise from my life's journey. The most notable ones are delineated below.

3. Why Plan for Success?

When we think of success and wealth, what comes to our minds is our material comforts and their abundance. While such comforts are an integral part of success and wealth, they are meaningless without a consideration of spiritual happiness included in our value systems and *modus operandi*. Having \$20 million or \$1 billion isn't really success if our life is bedeviled by emotional problems or unhappy relationships with our colleagues, family members, or whosever comes into our circle of influence (loosely called customers). A positive correlation between a happy mind and a healthy body has been shown in a number of studies. True success means material and financial wealth coupled with an enjoyment of one's life's journey, a

continued expansion of happiness, and a progressive realization of worthy goals. Motivation towards achieving our goals is the key factor in our success. This motivation came to my life from Indian values. During my travel around the world, I have encountered motivation at various levels. When we are motivated, we are energized. Motivation was a driver behind my migration to the U. S. A. and again in accepting an expatriate position to Saudi Arabia against the advice of many well-wishers. Although I was exposed to many cultural values during my travels, the Saudi culture did not allow me to pass on my insights to them. Coming back to America I found a fertile ground for the reception of my ideas.

Adopted by this great country, I find that America is indeed a land of opportunities and allows each one of us to flourish to one's full potential, regardless of nationality, religion, or ethnicity. With my growth in worldwide organizations, it is evident that the American dream is not so much a dream as it is my reality. Born in rural India at the time when the British were ruling that country, I can very well appreciate the value of freedom that we are endowed with. We are indeed fortunate to live in a free country where comforts and amenities are almost heavenly and we tend to indulge in this freedom without the least restraint. We do not realize that this freedom is essentially built upon intelligent self-restraints and discipline. For instance, the traffic lights on our roads do constrain our freedom but this is a necessary restraint for the orderly flow of traffic. When planning for success and managing quality, we need to understand constraints.^{1,2} Human wants are insatiable and resources limited. If we anticipate the constraints of limited resources, we can create a quality future for ourselves and those in our circle of influence.

Even if resources are plenty, as I found from my Saudi experience in the late 70's, the integration of diverse talents is a must if we are to make progress. That is where the Theory of Constraints² and the engineering process of optimization come in. Decision-making is a very important part of planning. An engineer will generate alternatives. Choices can be made by non-analytic means (adequate for less important decisions having limited impact) or analytic means (decisions involving significant resources). Decisions can be made under conditions of certainty (perfect information), uncertainty (imperfect information), or risk (outcomes are random but probabilities of outcomes can be reasonably estimated). When planning, the people bring to the table some very brilliant ideas, as we might have heard from several of our colleagues. However, their perception by the intended "audience" is not assessed.

While reviewing the planning process at Singapore and Australian universities, I noticed that they identify the limited market of their expected clientele. That is why they expanded their circle of influence. Universities in those countries targeted Indian and Chinese markets to sell their programs with enormous success. Not only do they have good strategic, tactical and operational plans, but they also have very good maintenance plans. As an example, all Singapore cars must be replaced every 10 years, taxis 7 years, and airplanes 5 years. Similarly, in universities, all faculty computers are replaced every three years, while transferring old computers to labs and auctioning those coming out of the labs. All computers are checked for virus or malfunction by the helpdesk on a weekly basis. When one compares this mindset and the progress with neighboring Malaysia, one immediately identifies the need for planning at all levels to derive synergy from all sources.

4. Total Quality Management

Quality is in the eyes of the beholder. Consider, for instance, a glass only half-filled with milk. A pessimist looks at the empty upper half and complains that it is not full. An optimist looks at the filled lower half and enjoys its fullness. In a lighter tone, quoted by Bill Cosby in the 2004 commencement at Wilkes University, the glass is half full or half empty depending on whether you are pouring or drinking. An engineer is a pragmatist. She looks at the resource needed to make the glass and looks at its design and declares that the glass is twice as large as it should be. She responds to capacity management within the constraints of available resources.

While the price one pays for a service or product may be a discriminating factor, *quality* is often the major factor. Poor quality can be very expensive for the producing organization and the “customer.” Although few of us talk of quality in an organization, most people accept what is being done as a way of life. The quality of a product or service is the degree to which the product or service meets specifications. In academic circles, it is not enough to assess quality on the basis of *what they want*, it is more important to assess quality based on *what they need*. Here ‘they’ are our customers. It may be students, parents, industry, business, alumni, or whatever comes in our circle of influence. There lies the urgency of defining desirable attributes of our *customers*. While having extensive discussions within our organization, we focus more on *what they want* or *what we want* and less on *what they or we need*.

Total quality management (TQM) refers to quality assurance that encompasses the entire organization, from intake to outgo and includes following through the process to test for reliability and identify failure of products and services. TQM emphasizes a commitment by the management in having a drive towards excellence in all aspects of the products and services that are important to the intended customer—now and more so in the future. Future needs of the customer may not be identified *by* the customer but rather *for* the customer. A customer does not necessarily know what he/she wants until he/she has seen the product or service. From there, she may refine the attributes she desires in a product or service.

Deming³ encouraged top-level management to get involved in the process of creating an environment that supports the total quality and continuous improvement. When his message was not accepted in the United States, he took it to Japan at the conclusion of World War II when Japan was trying to build up after the war. There he helped turn Japan into an industrial giant to be reckoned with. His theories focus heavily on management involvement, continuous improvement, statistical analysis for quality control, goal setting, and communication for achieving success. During my stay in Japan, I came to realize the value of the ideas proposed by Deming. The 14-point plan proposed by Deming translates to finding innovative solutions to problems we face. Many of you will argue that it is all common sense, but as Mark Twain said common sense is not that common. The Plan-Do-Check-Act (PDCA) cycle is a systematic engineering approach to project management. While using this cycle, I encourage you to study the problem and plan a solution (Plan stage). Good plans lead to well-thought-out solutions that can be tried (Do stage). The outcomes are gathered and checked against benchmarks (Check stage). Finally, when the root cause of the problem is identified and the problems are solved, the changes are made permanent (Act stage).

5. Teamwork and Communication

Working in teams and communicating on a continuing basis allow us to improve not only the standard of *living*, but also the standard of *life* for all our colleagues and other peers who are not yet within our circle of influence. A standard of *life* means feeling the subtle body in a person (including one's "self"). In Indian scriptures, there is a book entitled *Tatavabodha* (meaning essence of knowledge). It is written as a dialogue between a teacher and a pupil. In fact, all Indian scriptures are dialogues between a teacher and a taught, as demonstrated by the dialogues between Krishna as a teacher and Arjuna as a student in the most revered *Bhagvad Gita*. The fundamental topic is on discriminating power between *nitya* (the timeless or ever-present permanent) and *anitya* (the transients or time-bound). This scripture notes three levels of our existence: gross, subtle, and causal body. Each one of us is recognized by one's gross body, made of five original elements: earth, air, water, space, and fire (temperature). The standard of *living* relates to the comforts available to that gross body. It is endowed with six folds of modification: it exists, is born, grows, undergoes modifications, decays, and dies. It has five sensors of perception: the ear, the skin, the eye, the tongue, and the nose. Utilizing these sensors, we can tap the subtle body in each one of us. That enhances our communication channels and, hence, improves the standard of *life*. The causal body is that which is of the form indefinable and without any beginning. It is the cause of the two bodies (gross and subtle) culminating into our passion, emotions, and motivation. It is that superpower from which all religions originate. It is timeless *Atma* (loosely defined soul) and it forms a common thread among all living beings and drives us all. In that context, we are all engineered entities. Within each one of us is a kernel of being that does not change (timeless)—a spark of divinity—and this is where infinite potential resides. All human beings have the ability to create anything they want. After all, we all started out as a speck of DNA and from that we have grown into beings with the ability to create space ships, write poems, play the piano, and make babies.

I see a clear similarity between the 7 habits of highly effective people as described by Steve Covey⁴ and what I have learned during my transition from India to America, in fact to the World. Let me first invoke the Hindu trinity (3 forms of a single Superpower) in making/sustaining/renewing an organization. Every organization has Brahma—the Creator, Vishnu—the Preserver and Shiva—the Destroyer (of ignorance!). Once an organization is created, Vishnu takes over. The people look to Vishnu in providing sustenance. Within a few years of creation, most organizations lose sight of their mission and essential role, as they are only interested in sustenance, not innovations. They become focused on efficiencies or doing things right rather than on effectiveness or doing the right things. In any organization, it is Shiva who is to be protected in order to enhance effectiveness and destroy obsolescence so that the renewal is a natural process. In a quotation, I believe it is by Bernard Shaw, it is stated: "A reasonable man adapts himself to the world; an unreasonable man wants the world to adapt to himself; all success depends on the unreasonable man." While considering renewal for our organization, we should be on the lookout for that Shiva, "the unreasonable man," who may effect change and promote innovations in an organization to avoid stagnation. In making a case of renewal, Covey strongly advises to move from dependence to independence (private victory) and on to inter-dependence (public victory). It is inter-dependence that is highly valued in a world where information travels at the speed of light. This inter-dependence can truly teach us the value of teamwork in a multicultural and multilingual world. The first three habits advocated by Covey lead to private victories that awaken Brahma in you. These habits are: Be proactive,

begin with the end in mind (purpose of your being), and put first things first (time management). The next three habits invoke public victories. These are: Think win-win (create a happy environment for all in your circle of influence), first understand and then be understood (enhance listening skills), and synergize (make 1 and 1 equal to 11 not 2). These habits will invoke Vishnu in you as people will find you indispensable for finding solutions to their problems. The seventh habit of renewal stands by itself and takes the form of Shiva who destroys obsolescence in favor of innovations and renewal. As Shiva, you should always question current practices and be on lookout of what can be improved.

6. Ethics, Mission, Vision, and Values

Embedded in the work place is a belief that individuals working for an organization have somehow lost the will to act ethically. Contrary to that belief, I believe that individuals come to work with the intention of doing the best job possible, but are stymied and discouraged at all levels, sometimes by their own peers for personal interests. A strong correlation between the quality of an organization and ethical and moral values held by the management has been shown in the literature. Mahatma Gandhi, the leader credited with the independence of India, had a mission to liberate Indian people from the rulers who were inhibiting their growth by labeling them slaves. A restaurant in England displayed a sign during colonial time: "Dogs and Indians are not allowed." Gandhi achieved his greatness by practicing ethical principles and staying close to the people, representing their greatness of spirit and moral values. As a law professional, traveling in the first-class compartment in South Africa, he was thrown out of the train by a white supremacist who believed that colored people have no right to travel in first class. Yet, he fought peacefully for human rights, just like Martin Luther King in the United States, and is now touted as the Father of the Nation in a free India.

The mission of an organization is based on shared values and vision. Every nation, community, or organization faces contradictions between the rhetoric contained in the mission and its actions. The leaders say we value democracy, but they reward autocracy. They say we value openness, but they behave in ways that value closeness, hidden agendas, and politicking. They say we value capitalism, but they reward feudalism. They say they value people, but they protect rewards for the privileged class. An effective mission statement should deal with four needs: economic, social (relational), psychological (emotional), and contributory. The strategic path leads from the mission statement and reflects its vision and values and also reflects the ecological realities and trends to avoid obsolete practices and attitudes. When there is an alignment with vision, values, mission, and *constitution* of an organization, only then does valuing people become its top line, as much as staying solvent, the bottom line. To stay solvent, an organization must develop strategies in three areas: finance, marketing, and operations.

Shifting paradigms require one to address the contemporary ethical issues as these arise and develop associated strategies to eliminate discrimination in one's organization. That is where our vision and values come together in support of the mission of our very existence. I learned that creating a group of *they* versus *us* will only create more problems, as President Bush found out. The Dilbert Principle by Scott Adams³ states it differently for the workplace: "Incompetent workers are promoted directly to management without ever passing through the competency stage." In my mind, this is *Bhumiputra Syndrome*. Bhumiputra (son of land) comprises *bhumi* for land and *putra(i)* for son(daughter) in Sanskrit. Bhumiputras claim an entitlement or demand

a preferred treatment because of a class (color, creed, religion, status, etc.). Bhumiputra Syndrome's presence in the professional world stems from the presence of bhumiputras who are unable to keep pace with changing technology and the world, but are shuffled to management positions to minimize damage. An engineering process will conclude just the opposite: It creates the maximum damage since the idiocy of incompetent managers permeates down to the worker level and hence affects the whole organization. Such administrators, pretending to be leaders, are neither able to make competent decisions for implementing innovations or delegating authority, nor are they capable of assuming responsibility of their actions. Professionals working in such an organization become street-smart for personal benefits. Enron and other big companies that went bankrupt recently are examples of such degradation and corruption. Hence, high ethical standards should be emphasized.

To form a clear vision of the future, I recommend that the VCR paradigm⁶ be applied as developed at Carnegie-Mellon University. V stands for Values and Virtues, C stands for Consequences and Contingencies, and R stands for Rights and Responsibilities. The VCR paradigm allows one to evaluate an action before execution, according to the law of *dharma* (a Sanskrit word meaning devotion to duties with high ethical standards). It gives an individual a platform on which to assess the values and virtues of the community one lives in. He or she is prepared for the possible consequences of his or her actions and the VCR paradigm gives him or her ammunition to develop associated contingency plans. Furthermore, the VCR paradigm states that right of the leadership role should be given to those who are prepared to take the responsibility of their actions. In training professionals on work ethics, the emphasis should be on finding ways to build strong character in professionals or the organization they serve or will serve with the intent to build trust and enhance trustworthiness among all the stakeholders. After all, an efficient and reliable economic and political system is always based on a moral foundation. This principles-based leadership approach not only enhances our effectiveness, but also creates a healthy society that will judge professionals by their contributions to humanity.

7. The Thinking Mind—The Incredible Information Processor

In spite of the vast number of innovations in information technology, the human brain remains an incredible information processor and a remarkable knowledge manager. The present millennium will see enhanced integration of the artificial and the natural at many levels and in varied forms in order to design, maintain and improve quality. We can manage knowledge better if we know diversity of thinking processes in addition to cultural diversity. Multiple objectives are fulfilled while studying and understanding the mind, the information processing capability of the human brain. The way the top leadership (organization's brain) manages and processes knowledge, information trickles down to the worker level (heart of an organization) and then into the work place (other parts of an organization). Certainly, the thinking mind can be an important element for administrative setup and in planning strategies for an organization. Actually, a model like this can become an effective advising tool in matching talents of students to the disciplines or careers they are considering. The goal of academic advising is to create models for students to find a field of study that matches their career success and personal fulfillment goals.

In the *Bhagavad Gita*, Krishna explains: "The Supreme Lord is situated in everyone's heart, O Arjuna, and is directing the wanderings of all living entities, who are seated as on a machine, made of the material energy." This ancient philosophy teaches that the individual and the

universe coincide. The work proceeds through intellectual knowledge of the playing field (jnana yoga), emotional devotion to the ideal (bhakti yoga), and right action that includes both feeling and knowledge (karma yoga). Individual purification comes with right action. With ongoing purification we approach wisdom. The *Bhagavad Gita* is a message addressed to each and every individual to help him or her to solve the vexing problem of overcoming the present and progressing towards a bright future. Within its eighteen chapters is revealed a human drama. This is the experience of everyone in this world, the drama of the ascent of man from a state of utter dejection, sorrow and total breakdown and hopelessness to a state of perfect understanding, clarity, renewed strength and triumph. In any organization, people either produce, manage, or lead. However, a true leader has to perform all these roles. Whole-brain thinking is a must for *envisioning* the future while designing a strategic plan. Ned Hermann divides the brain into 4 quadrants: two on the left (quadrant A and B) and two on the right (quadrant C and D), as shown in Figure 1.⁷

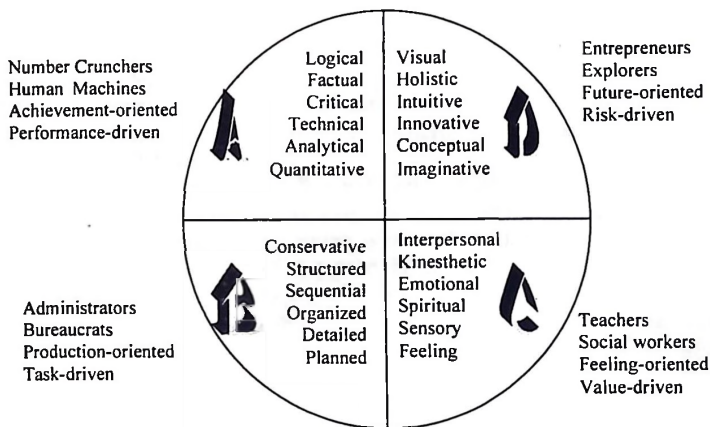


FIGURE 1. Ned Hermann's four-quadrant model of the brain with predominance indicated.

The left half works more with logic, words, structures, and analysis. In contrast, the right half works more with emotions, pictures, whole entities, relationship among parts, and synthesis. The left half is sequential and time-bound (masculine); the right is holistic and time-less (feminine). Harvard's President, Lawrence Summers, was alluding to this difference that became a topic of controversy that forced him to resign. In Asian philosophy, these two aspects form the yin-yang (feminine-masculine) combination. In Indian mythology, Brahma-the Creator derives his power from Sarswati, the goddess of knowledge; Vishnu from Laxmi, the goddess of wealth; Shiva from Parvati, the goddess of strength. Similarly, the left half of the brain derives its synergy from the right half. A number of yoga and meditation techniques are available to relax the left half so the right half has an opportunity to show its strength. Most of us, engineers and scientists, are trained to be *Quadrant A* thinkers who think in terms of numbers and words. A process to move us from *Quadrant A* to *D* can be generated to make one an entrepreneur—idea generator. At an individual level, one can obtain mastery in any of these quadrants by continued applications of relevant activities. However, an organization exists when the whole brain is

thinking and planning. Leadership in a knowledge organization deals with direction (production capability) while management deals with speed (production). An ideal operational paradigm will be: Lead from the right and manage from the left. A courageous leader will climb the tallest tree in a jungle (unknown territory) and cry: "wrong jungle!" even though he is advised to be quiet as his team cruises through the wrong jungle and progress is being reported in terms of mileage covered.

8. Where Do We Go From Here?

I have given you an overview of planning for success following the engineering process. Each one of you can develop a programmed approach while solving problems in your natural habitat, may it be at Wilkes University or somewhere else in the free world. I encourage you to go home with these resolutions and use them to enhance your success in the inter-connected world:

1. **Define the Purpose of Our Existence.** While leading, planning and innovating, each one of us will consider himself or herself as a contributing member of a larger enterprise. Our success is driven by how we talk, look, write, listen, create ideas, solve problems, motivate, persuade, lead, organize, handle anger and sleaze, and deal with power figures and outside organizations. In this capacity, we will be connoisseurs of talents, more curators than creators. Add motivation and determination to achieve a goal and we will progress toward that goal.
2. **Resonate with the Enterprise.** We will get out of our cubicle by communicating effectively with people who may or may not think and operate similarly to the way we do. We must realize that human nature is such that silence is deafening and curiosity overwhelming. The silence of a person is an indication that he or she is shaken psychologically and emotionally for a variety of reasons. With enough enthusiasm, we can ignite the curiosity in a silent colleague who is identified as not participating. It is like creating a resonance condition by matching the "frequency" of the driver with the driven.
3. **Discover the Future by Forming, Norming, and Storming Teams.** We should keep on reminding ourselves as to what is important in engineering our future. Not only will we produce quality ability attributes among our "customers," but also create a quality educational organization by relating to our colleagues and by forming effective and efficient teams. As members of a team, we will remain intimate allies of our colleagues and peers at large. We may not have the loudest voices but we will have the most attentive ears. The ingredients are a combination of our competence, commitment, caring, fairness, candor, and generosity.
4. **Utilize the Power of the Thinking Mind.** We will harness the tremendous information processing capability of 3-pound 3-quart-sized internal computer—the brain, estimated to have about 17 billions bites of storage and astounding speed of the mind. We should use this powerful knowledge-managing resource for creative activities that will advance both our personal and organizational goals.

Indeed, it's time to heed the deed and proceed with speed to succeed! Agreed? Let us start this journey here and now. In the privacy of your office/home, please fill the questionnaire in the Appendix. Please send me an e-mail at vijay.arora@wilkes.edu to get the key to interpret your score.

9. Acknowledgments

It is my privilege and pleasure to thank all my *customers* with whom I have interacted in the past, interacting now in the present, and all those who will appear in my circle of influence for remaining years of my life (six months or extended six months as these may be). I am appreciative of the company of all my worldwide friends, students, and colleagues, too numerous to name.

My parents, Hari Chand and Chander Bhagan Arora, have been wonderful source of aspiration and inspiration. I wish they were here with me today. My brothers, Leela Krishan Arora, Arjun Dev Arora, and Satya Pal Arora, and my sister, Raj Arora-Malik, all have shared wonderful adventures throughout my life journey with each one finding his or her own strength to form a family and professional life.

It is said that behind every successful man there is a woman who has courage to say that he is wrong. I have three of them. The first woman behind my life is my most adorable wife Rashmi Indu-Bala Arora who stood by me in the deserts of the Kingdom of Saudi Arabia, rains of Singapore, snowy mountains of Colorado, and alike, always looking at the bright light that every morning sun will bring to our life together. Reshu, as I call her, always found time to revere the cool rays of the moon on a beach, and sandy and snowy mountains and hills, and of course through the windows of our little home that she made a shrine of love and affection. The other two women also came out of her womb. I adore our two lovely daughters Vineeta (Finny, as F replaces V in the Arabic language. She was born in Saudi Arabia) and Namita (Namu) who have shared the world adventures with me and made my life meaningful.

My colleague and long-time friend Dr. Brian Redmond is a living example of life-long learning: "Training ends with school, but education ends with life." He ignited in me thought processes by being a guest lecturer in my Professionalism and Ethics classes as well as giving final shape to this lecture. I am grateful to him in finding time for editing this manuscript as well as for creating an effective dialogue similar to what occurred between Krishna and Arjuna in the *Bhagavadgita*. Brian, I value your company in our microcosm. It is also a good time for me to recollect and acknowledge the wonderful guidance I received from my first mentor and a boss at Wilkes University, Professor Umid R. Nejib. He was one of the Final Word lecturer and left for his heavenly abode after creating and sustaining a wonderful world of engineering at Wilkes University. May God bless his soul.

When life took a roller coaster ride after the perestroika of 1998, Gina Morrison and Josephine Paganiban provided tremendous support. I salute both of them in making me recognize a quality person in that subtle body in me that was looking for a purposeful life. It is because of their support this Final Word became a reality. I also thank Avanthi Mantrala for her assistance during the extremely busy 2005-2006 academic year. The creative and efficient printing services of Bridget Ferdinand are indeed praiseworthy. As professors, we always do things at the last moment and wish it was done yesterday. Bridget has always been very patient in meeting our timely demands. I am very appreciative of her understanding and support.

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APPENDIX

Discovering a Quality Person in Your Subtle Body

The mastery of the art of engineering a fully-functioning quality person in you comes from the mastery of the self—leadership of the self. The process of becoming a leader is the process of being an integrated human being. This exercise is designed for you to identify your “self”, that subtle body in you that uses five sensors to relate to the subtle body of others in your circle of influence.

A. Personal Leadership

1. I treat other people fairly and with respect.

Rarely			Sometimes				Always		
1	2	3	4	5	6	7	8	9	10

2. I actively listen to other people and don't interrupt to give my point of view.

Rarely			Sometimes				Always		
1	2	3	4	5	6	7	8	9	10

3. I take on responsibility for my actions and don't rely on others to plan my future.

Rarely			Sometimes				Always		
1	2	3	4	5	6	7	8	9	10

4. I volunteer my services to help others in need.

Rarely			Sometimes				Always		
1	2	3	4	5	6	7	8	9	10

5. I maintain a healthy, positive outlook on life.

Rarely			Sometimes				Always		
1	2	3	4	5	6	7	8	9	10

6. I understand my values and apply them in my daily living.

Rarely			Sometimes				Always		
1	2	3	4	5	6	7	8	9	10

7. My long- and short-term goals are tied to my values to ensure that what I am doing in my life is important to me.

Rarely			Sometimes				Always		
1	2	3	4	5	6	7	8	9	10

8. My daily activities are in harmony with my values.

Rarely			Sometimes				Always		
1	2	3	4	5	6	7	8	9	10

9. I enjoy the people and things in my environment.

Rarely			Sometimes				Always		
1	2	3	4	5	6	7	8	9	10

10. I practice good customer service with all the people whom I come into contact.

Rarely			Sometimes				Always		
1	2	3	4	5	6	7	8	9	10

Total A _____/100

B. Planning

1. Every day I take time to plan my daily activities around what is important to me.
2. I try to align my long- and short-term goals with my values to ensure that my daily activities are in harmony with my goals.
3. During my daily planning time, I prioritize both important and routine activities that I need to accomplish.
4. Each day I plan to accomplish only those activities for which I have allocated enough time.
5. I strive for continuous learning and have plans to further my education in areas that interest me.
6. I strive to work up to the standards set by the most accomplished people in areas that interest me.
7. I try to exceed the expectations of all the *customers* with whom I come into contact in my activities.
8. When I plan my activities, I have knowledge of my environment and take any changing elements into consideration.
9. I have a good sense of how my personal values, strengths, and weaknesses align with what I am doing.
10. I have thought-out, realistic goals with achievable targets for my major activities.

Rarely			Sometimes				Always		
1	2	3	4	5	6	7	8	9	10

Rarely			Sometimes				Always		
1	2	3	4	5	6	7	8	9	10

Rarely			Sometimes				Always		
1	2	3	4	5	6	7	8	9	10

Rarely			Sometimes				Always		
1	2	3	4	5	6	7	8	9	10

Rarely			Sometimes				Always		
1	2	3	4	5	6	7	8	9	10

Rarely			Sometimes				Always		
1	2	3	4	5	6	7	8	9	10

Rarely			Sometimes				Always		
1	2	3	4	5	6	7	8	9	10

Rarely			Sometimes				Always		
1	2	3	4	5	6	7	8	9	10

Rarely			Sometimes				Always		
1	2	3	4	5	6	7	8	9	10

Rarely			Sometimes				Always		
1	2	3	4	5	6	7	8	9	10

Total B _____/100

C. Improvement

1. I can document three major processes that I use in accomplishing my personal goals.

Rarely			Sometimes				Always		
1	2	3	4	5	6	7	8	9	10

2. I constantly strive to improve my skills, knowledge, and sense of purpose in my life's work.

Rarely			Sometimes				Always		
1	2	3	4	5	6	7	8	9	10

3. I constantly strive to measure whether I am meeting my personal goals.

Rarely			Sometimes				Always		
1	2	3	4	5	6	7	8	9	10

4. I constantly strive to eliminate activities that have no value in my life and focus only on activities that enrich my life.

Rarely			Sometimes				Always		
1	2	3	4	5	6	7	8	9	10

5. I admit my mistakes, acknowledge the reasons, and then move on with the goal to not make the same mistakes again.

Rarely			Sometimes				Always		
1	2	3	4	5	6	7	8	9	10

6. I celebrate my success and improvements.

Rarely			Sometimes				Always		
1	2	3	4	5	6	7	8	9	10

7. I measure my success by achieving my goals on time.

Rarely			Sometimes				Always		
1	2	3	4	5	6	7	8	9	10

8. I constantly strive to improve in areas that are important to me and learn to accept my weaknesses in areas that don't interest me.

Rarely			Sometimes				Always		
1	2	3	4	5	6	7	8	9	10

9. I am a role model for continuous improvement in everything I do.

Rarely			Sometimes				Always		
1	2	3	4	5	6	7	8	9	10

10. I am open to changes in my life that will enable me to learn new things.

Rarely			Sometimes				Always		
1	2	3	4	5	6	7	8	9	10

Total C _____/100

Interpreting Your Scores

Please report all the scores here. Please add them to get the grand total.

Total A _____

Total B _____

Total C _____

Grand Total (A+B+C): _____

If you want to assess your effectiveness, as an individual, in making contributions to Wilkes, send me e-mail at vijay.arora@wilkes.edu. I will return you the key with which you can compare yourself.

Questionnaire is adapted from *Quality Progress*, September 1993, American Society for Quality Control

Engineering a Quality Person in You

Ongoing Thinking Processes for Leading, Planning, and Improving

2006 Final Word Lecture at Wilkes University

May 10, 2006, 2:00 PM
Miller Ballroom
Henry Student Center
Wilkes University

Vijay K. Arora

Professor of Electrical Engineering and Engineering Management
IEEE-EDS Distinguished Lecturer
Leading Educator of the World 2005

PowerPoint Presentation

Wilkes University
Wilkes-Barre, PA 18766
E-Mail: Vijay.Arora@wilkes.edu, Phone: (570)408-4813
Web.wilkes.edu/vijay.arora

Engineering a Quality Person in You

Vijay K. Arora
Professor of Electrical Engineering and
Engineering Management
Wilkes University

Final Word Lecture May 10, 2006



Enlightened Final Word

Good judgment comes from experience

And where does experience come from?

Experience comes from bad judgment.



Mark Twain

Edison's Final Word as He Invents the Light Bulb

Edison was asked:

How does it feel to have failed so
many times in his efforts to make a
light bulb?



Edison replied:

I have successfully found thousand
of ways how not to make a light bulb!

Lincoln's Final Word After Embracing Failures

AGE	ACTIVITY
22	Failed in Business.
23	Lost a legislative race.
25	Again failed in business.
26	His sweetheart dies.
27	Had a nervous breakdown.
34	Lost congressional race.
37	Lost congressional race again.
39	Lost congressional race again.
46	Lost senatorial race.
47	Failed to become Vice-President.
49	Lost senatorial race again.
52	Elected President of the most powerful democracy.

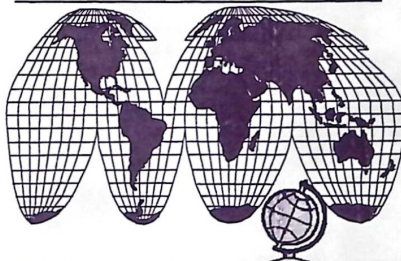


Government of the People, by the people, and for the people

Why Engineering?

- Scientists study the word as it exists — It is a process of analysis
- Engineers create the world that never existed — It is a process of synthesis in pursuit of human needs, wants, goals as an organization embraces CHANGE
- A CEO is a behavioral engineer — enhances the quality of people in an organization considering it an organic station
- It is an engine of growth — Ingenious quality people breeding quality throughout the lifetime of a process or product

My Life's Journey

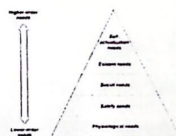


Origin of My Life Journey



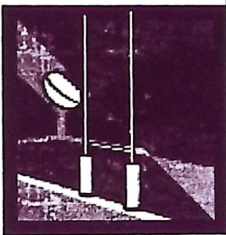
Paradigm Shift During My Life Journey—20th Century

- Agricultural economy
- Predominance of physical needs over higher-level needs
- Precedence of character ethics before personality ethics
- Extensive research before considering publication

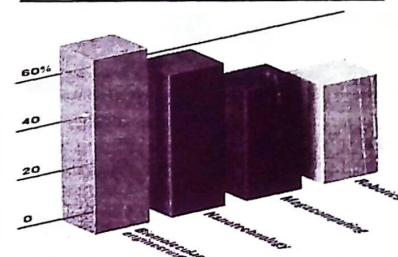


Paradigm Shift During My Life Journey—21st Century

- Innovations, inventions, and goal achievements
- Protection of intellectual property
- Predominance of personality ethics
- Raising venture capital and starting your own IPO in goal fulfillment no matter what effects on community or environment



Emerging Technologies



Engineering as a Process and Product for Success

- **Traditional Engineering:** Physics, chemistry, and mathematics at its core
- **Traditional Liberal Arts:** Astronomy, arithmetic, geometry, music (quadrivium); and logic, rhetoric, and grammar (trivium)
- **Biology and Business:** In the process of utilizing engineering paradigms
- **Engineering as a Process and Product:** The new liberal art
- **Ability Attribute Outcomes:** Washington Accord

Engineering as Process for Bio-Applications

- Pharmaceutical engineering and drug delivery
- Photodynamic therapy
- Molecular motor-NEMS
- Neuro-electronic interfaces
- Protein engineering
- Nanoluminescent tags and sensors
- DNA coding and repairs
- Brain atlas

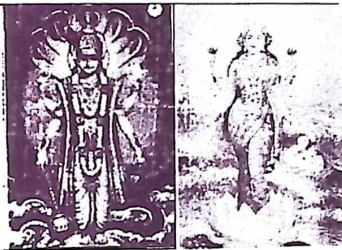
Engineering as a process for Business Development

- **Nano-engineering bigger economic force:** larger than software, cosmetics, drugs, or automobile, a potential \$1 trillion market
- **Engine of Growth:** both in private and public sector
- **Fierce competition:** each nation aspiring to capture a big chunk of pie
- **Leadership in the Global Economy:** quality personnel at all levels and in all segments of the global community

Awakening a Knowledge Person in You



Sustaining with Wealth



Renewal with Strength



Seven Habits of Highly Effective People—Covey

- Be proactive
- Begin with the end in mind
- Put first things first



Brahama:
The Creator
Private
Victories

- Think win-win
- Seek first to understand and then be understood
- Synergize



Vishnu:
The Nurturer
Public
Victories

- Renewal



Shiva:
The Renewer

Invoking Renewal

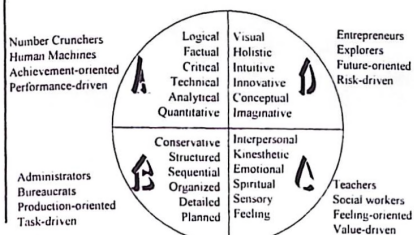
The reasonable man adapts himself to the world

The unreasonable one persists in trying to adapt world to himself

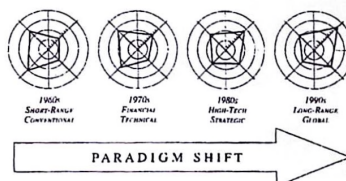
All progress depends on the unreasonable man

George Bernard Shaw

Organizational Brain—The Incredible Knowledge Manager



Paradigm Shift



What Are We Made of?

- Gross Body (*Sthul Shira*)
External Factors or Looks: Cells and Bones
- Subtle Body (*Sukhsam Shira*)
Internal Factors: Moods and Ideas
- Causal Body (*Karan-Shira*)
Organic Factors: Passion and Values

Remembered Beliefs and Expectancy

- On the part of a person in you
- On the part of God or His representative or a caregiver (e.g. family or societal setup)
- On generation by a relationship between the person and the caregiver

Culture

- The totality of socially transmitted behavior patterns, arts, beliefs, institution, and all other products of human work and thought
- To cultivate
- Perceptions taking form of reality

High-Context Culture

- Domain: Much of the Middle East, Asia, Africa, and South America
- Relational, collectivist, intuitive, and contemplative
- Emphasis for group harmony and consensus to individual achievement
- Communication more indirect and more formal
- Importance of context, the speaker's tone of voice, facial expression, gestures, posture—and even the person's family history and status
- Dominance of intuition or feelings over reason

Low-Context Culture

- Domain: North America and much of Western Europe
- Logical, linear, individualistic, and action-oriented
- Emphasis on logic, facts, and directness
- Facts rather than intuition utilized in solving a problem or decision-making
- Straightforward communication, concise and efficient in telling what action is expected
- Negotiations based on explicit contracts

Cubical Experience

An Employee to the CEO:

"I am not promoted in spite of my 15 years of experience."

CEO's Reply:

"Not so. You have had one year of experience repeated 15 times."

Identifying and Managing Constraints

- Any resource that prevents a person or organization from increasing throughput
- Three types of constraints: Resources, markets, and policies
- Constraint Management:
 - ❖ What to change?—Pinpoint the core problems!
 - ❖ To what to change to?—Construct simple practical solutions!
 - ❖ How to cause the change?—Induce the appropriate people to invent such solutions!

Holistic Thinking in a Team

Two stonecutters were asked: What were they doing?

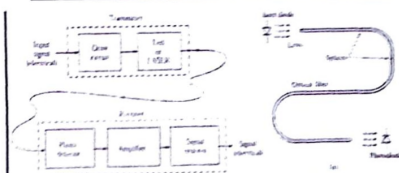
The first said: I am cutting this stone into blocks.

The second replied: I am on a team that is building a cathedral.

Communication

- Data transfer process that carries the meaning that is understood on receiving
- Requires a credible source, encoder, channel, decoder, and an intelligent receiver
- High signal-to-noise ratio
- Noise = \$\$\$\$\$
- Filtering from the signal important
- Re-enhancement of bits or pulses in spatial and temporal domain so knowledge is not lost or distorted (optical fiber analogy)

Fiber Optic System



Cross-Cultural Communication

If women speak and hear a language of connection and intimacy while men speak and hear a language of status and independence, then communication between men and women can be like a cross-cultural communication.

D. Tannen

A Real Story—October 1995

Naval Communication off the coast of New Foundland

Americans: Please divert your course 15 degrees to the North to avoid a collision.

Canadians: Recommend you divert YOUR course 15 degrees to the South to avoid a collision.

Americans: This is the Captain of a US Navy ship. I say again, divert YOUR course.

Canadians: No. I say again, you divert YOUR course.

Americans: THIS IS THE AIRCRAFT CARRIER USS LINCOLN, THE SECOND LARGEST SHIP IN THE UNITED STATES' ATLANTIC FLEET. WE ARE ACCOMPANIED BY THREE DESTROYERS, THREE CRUISERS AND NUMEROUS SUPPORT VESSELS. I DEMAND THAT YOU CHANGE YOUR COURSE 15 DEGREES NORTH, THAT'S ONE FIVE DEGREES NORTH, OR COUNTER-MEASURES WILL BE UNDERTAKEN TO ENSURE THE SAFETY OF THIS SHIP.

Canadians: We are a lighthouse. Your call.

Universal Communication

- The Five Most Important Words
I am proud of you
- The Four Most Important Words
What is your opinion?
- The Three Most Important Words
If you please
- The Two Most Important Words
Thank you
- The Least Important Word
I

Experiential Learning

Tell me, and I forget

Teach me, and I may remember

Involve me and I learn

Ben Franklin

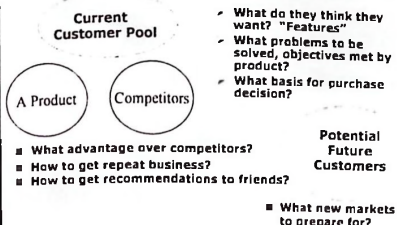
Asian Stereotypes

- Asian Dream List—5 C's
 - Car, Condo, Credit Card, Cash, and Career.
 - Bonus: spouse (working!), Children.
- Asian Scares List—5 K's
 - Kiasu: Afraid of losing (fear of losing out to the other guy).
 - Kiasi: Scared of death (cowardly).
 - Kiabor: Afraid of wife.
 - Kiaboh: Afraid of having nothing.
 - Kiachenghu: Afraid of government.

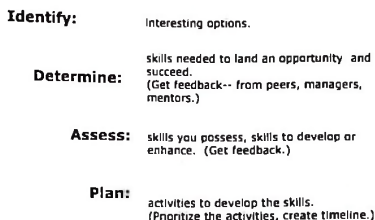
Innovation Climate

- Open-ended problem solving
- Creative environment
- Culture that encourages risk-taking, ambition, and celebrates success
- Culture that embraces those who fail and helps under-privileged

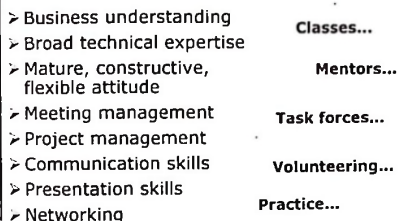
Standard Marketing Questions



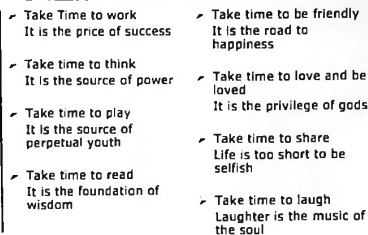
Develop a Strategy to Lead, Plan, and Improve



Your Options for Developing the Skills:



Time Management

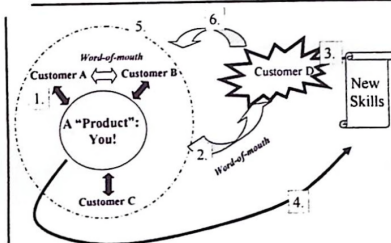


Continually Marketing Yourself and Developing Your Future

- Perform well. *Without that, nothing else matters.*
- Be known as someone who truly cares.
- Volunteer, to demonstrate worth, gain trust.
- Determine desired future customers, work with them.
- Understand available jobs down the road.
- Position yourself for higher-level responsibility.
- Look for jumpstarts for your experience.
- Be patient, make contacts, nurture relationships.
- Ask for the job you find or dream up.

PRO-ACTIVE IS THE KEY WORD....

Your Personal Marketing and Development Plan



My Final Word

- Define the purpose of our existence
- Resonate with the enterprise
- Discover the future by forming effective teams
- Utilize the power of the thinking mind
- Assess yourself
- Identify strengths, weaknesses, opportunities, and threats (SWOT)

Conclusion



**"The only place where
Success
comes before
Work
is in the dictionary..."**



The rewards will follow!

Engineering a Quality Person in You

Ongoing Thinking Processes for Leading, Planning, and Improving

2006 Final Word Lecture at Wilkes University

May 10, 2006, 2:00 PM
Miller Ballroom
Henry Student Center
Wilkes University

Vijay K. Arora
Professor of Electrical Engineering and Engineering Management
IEEE-EDS Distinguished Lecturer
Leading Educator of the World 2005

A Collection of Quotes

Wilkes University
Wilkes-Barre, PA 18766
E-Mail: Vijay.Arora@wilkes.edu, Phone: (570)408-4813
Web.wilkes.edu/vijay.arora

Collection of Quotes

Vijay K. Arora

Life-Long Education

**Training ends with school,
but education ends with life**

George Bernard Shaw

Experiential Education

**Give a man a fish and you
feed him for a day**

**Teach a man to fish and
you feed him for a lifetime**

Education is Life

**Education is a social
process....Education is
growth....Education is,
not a preparation for life;
education is life itself**

John Dewey

Honors and Awards

**It is better to deserve
an honor and not get
it, than to get it and
not deserve it**

Mark Twain

Persistence

**Some people walk
in rain, others just
get wet**

Roger Miller

Unconstrained Thinking

**The earth has a limit,
the mountain, the sea**

**The deep thoughts of
scholars are without
the boundary**

Panchtantra

Invoking Renewal

**The reasonable man adapts himself
to the world**

**The unreasonable one persists in
trying to adapt world to himself**

**All progress depends on the
unreasonable man**

George Bernard Shaw

Change Management

**The great thing is not
so much where we
stand as in what
directions are we
moving**

Oliver Mendell Holmes

Planning the Future

**Giving up doesn't mean
you are weak; sometimes
it means you are strong
enough to let it go**

Richard Wilbur

Rising to Greatness

**There are no great
people in this world,
only great challenges
which ordinary people
rise to meet**

William Frederick Halsey

Name and Fame

**Be more concerned with
your character than your
reputation. Your character
is what you are, your
reputation is merely what
other think you are**

John Wooden

Karma Theory

I long to accomplish a great and noble task, but it is my chief duty to accomplish small tasks as if they were great and noble.

Helen Keller

Vision

Michelangelo was asked: "How do you make a beautiful statue from a piece of marble which is shapeless?"

Michelangelo said "I have a vision in my mind. Whatever part of the marble which is not forming part of the vision, I remove."

Leadership

The manager persists in doing things right

The leader does the right thing at the outset to avoid recurrent problems

Liberated Mind

Those who give up liberty for the sake of security deserve neither liberty nor security

Benjamin Franklin

Defining Success

In ambition, as in love, the successful can afford to be indulgent toward their rivals. The prize our own, it is graceful to recognize the merit that vainly aspired to it.

Christian Nestell Bovee

Self-Contentment

Success is getting what you want

Happiness is liking what you get

Internal Happiness

Money, power and possessions play no part in any of the following:

A craftsman or artist whistling over a job well done

A child building sand castles

A mother bathing her baby

A doctor who has finished a difficult operation and saved a life

Passion and Values

We're constantly striving for success, fame and comfort when all we really need to be happy is someone or some thing to be enthusiastic about

Love is Communication

A soul mate is the one you could sit on a porch with, never saying a word, and walk away feeling like that was the best conversation you ever had

Virginia Woolf

Love is Power

Love is giving someone the ability to destroy you, but trusting them not to

Anonymous

Ten Trigger Words and Actions

No. of Letters	Nature of the Word	Word	Action
1	The most damaging	I	Avoid it
2	The most satisfying	WE	Use it
3	The most poisonous	EGO	Kill it
4	The most acceptable	LOVE	Value it
5	The most pleasing	SMILE	Keep it
6	The fastest spreading	RUMOUR	Ignore it
7	The most enviable	SUCCESS	Achieve it
8	The most nefarious	JEALOUSY	Distance it
9	The most powerful	KNOWLEDGE	Acquire it
10	The most essential	CONFIDENCE	Develop it

Is it Real Life or Dilbert?

A software engineer, recently refused a promotion, is receiving his performance review.

He asks the boss why he got passed over.

"You're not a team player," says the boss

"What do you mean I'm not a team player?" asks the stunned employee

The Answer: "You didn't smile in the company photo."

Newsweek, August 12, 1996

Dilbert Principle by Scott Adams

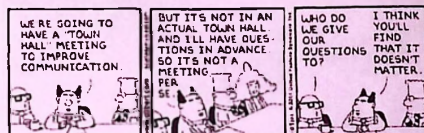
The most ineffective workers are systematically moved to the place where they can do the least damage: management

Of course, this creates maximum damage, as their idiocy permeates corporate life.

It seems as if we have turned nature's rules upside down.

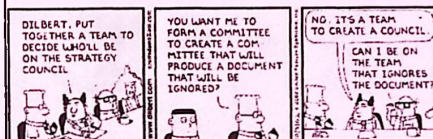
We systematically identify and promote people who have the least skills.

Communication



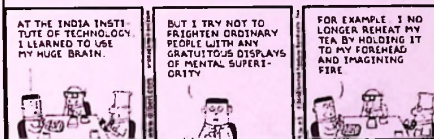
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Strategic Planning and Teamwork



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Brain Power



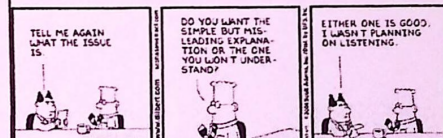
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Budget Cuts



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Listening



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Venture Capitalist



