

Intergenerational Workforce (Impact of Aging and Multi- Generational Workforce)

Ed Perkins & Trudy Hu
IEEE-USA Career & Workforce Policy
Committee

Jan 9, 2007 – AIAA Career Workshop



Career Management in the Intergenerational Workforce

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Topics

- **Employment Paradigms**
- **Intergenerational Factors**
- **Boomer Retirement Impacts**
- **Resources**

Employment Paradigms

The Corporate Engineer

- Engineers planned on a **lifelong career** with a single company; had an understandable **career ladder**; received ample **health and other benefits** and a **retirement plan**; **companies invested in their employees' success**

The Learning Engineer: New Technologies

- **New technologies hit industry with more frequency.** Engineers had to participate in some form of **continuing education to maintain employment.** Engineers had to become “learning professionals.”

The Contract Engineer: Creative Unemployment

- Corporate **downsizings** led many unemployed engineers to work as consultants — or refer to themselves as such. Sometimes these engineers secured **temporary employment contracts.**

See Vern Johnson: <http://www.todaysengineer.org/2003/Apr/variety.asp>

Employment Paradigms

The Skilled or Global Engineer: Contract Engineer Extended

- **Rapid deployment of new technologies and corporate globalization is on the rise. The contract engineer has evolved into the skilled or global engineer. Employers are hiring skills rather than people.** This suggests companies prefer hiring contract engineers, rather than full-time employees.
- **Era of “Just in Time” Employees – Execution**
- **Access to Local (Global) Markets**

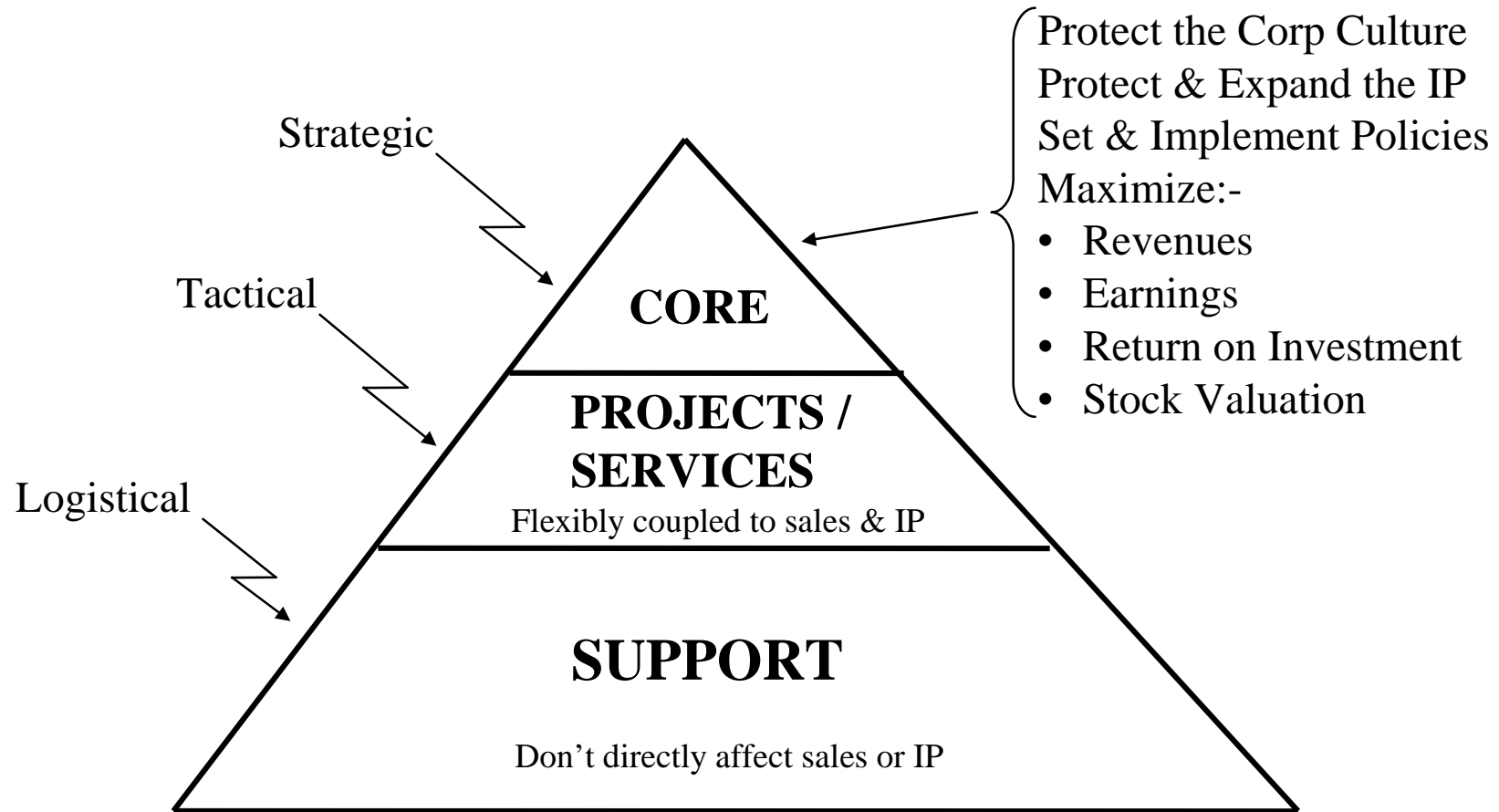
Employment Paradigms

- Job Market Shifted in Several Ways
 - Career Path *Your* Problem, Not Company's
 - Project Workers, “Just in Time” Employees
 - Focus on Cost Reductions
 - WWW & 24-hour Development
 - Productivity - Reducing Headcounts
 - Outsourcing / Offshoring

Global Competition For Jobs

*Fate Of US Workers No Longer Figures Into
Corporate Decisions*

Engineering No Longer a “Core” Function



Slide courtesy Henry Gregor

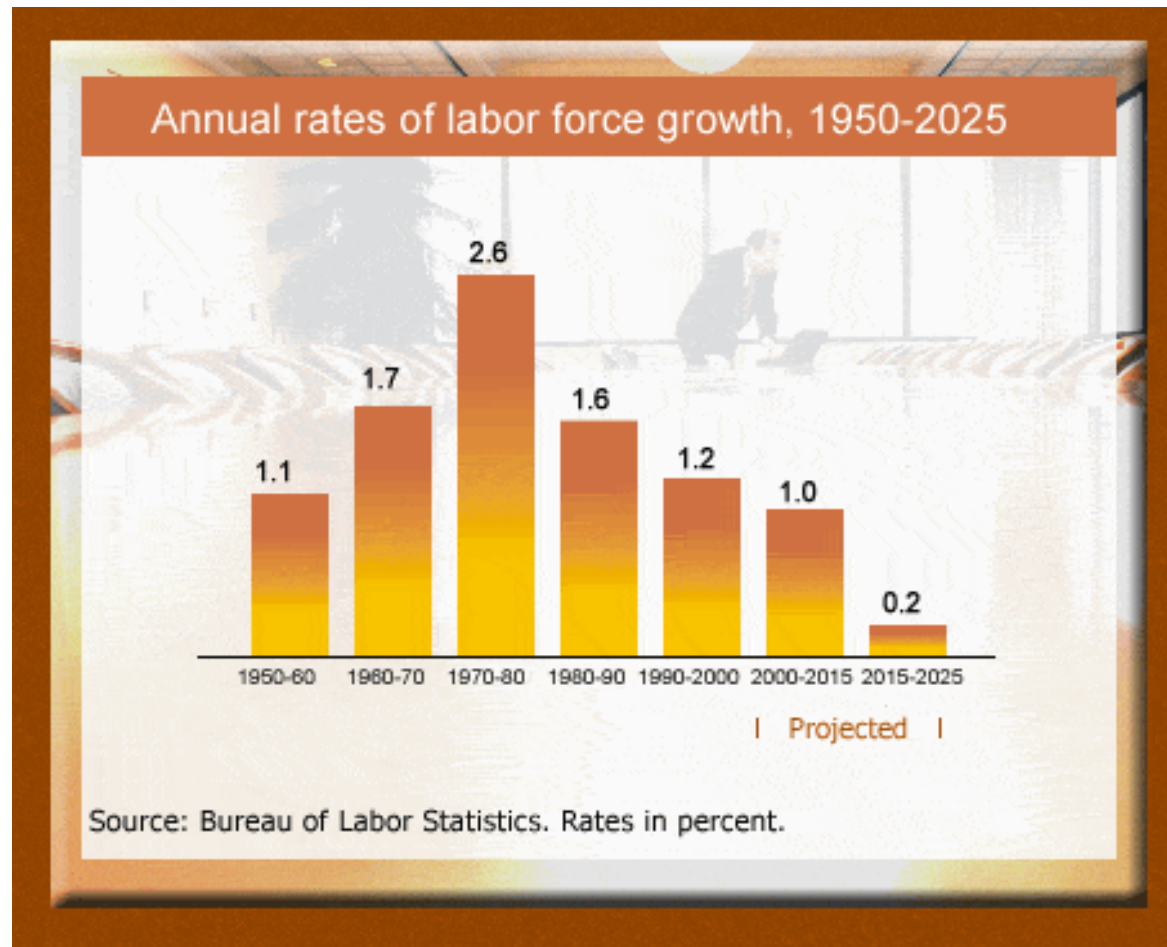
Intergenerational Factors

- Major employee groups in the workplace:
 - **pre-Boomers (60+)**
 - **Boomers (40-60)**
 - **Gen X (26-40)**
 - **Gen Y (Millennials) (6-26)**
- Younger worker groups more diverse in terms of ethnicity
- Factors creating the current situation:
 - **the large number of Baby Boomers**
 - **increased longevity**
 - **low fertility/birth rates**
- Nearly all countries face these demographic changes

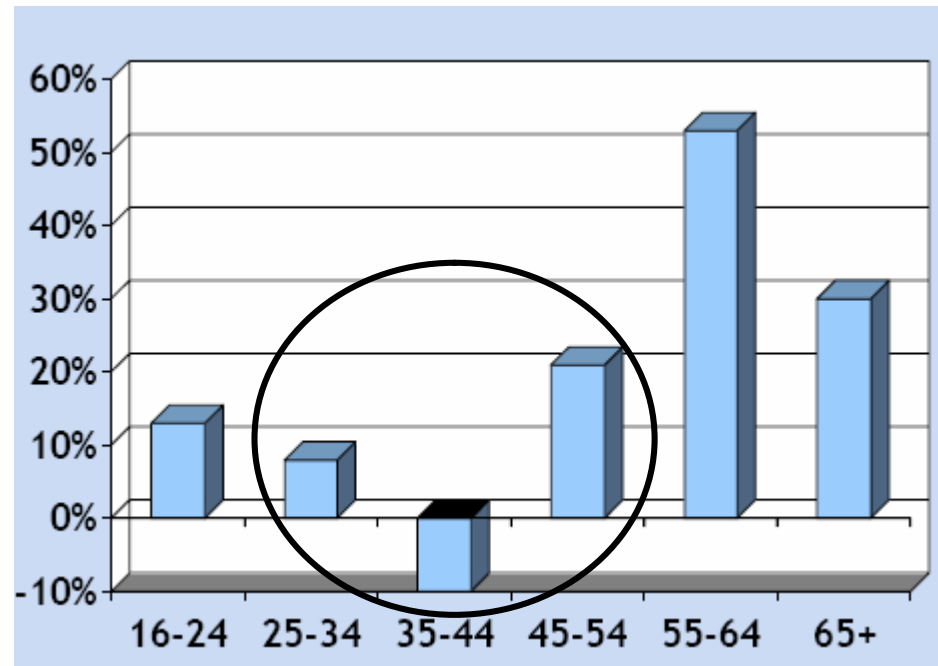
Four Generations

- In past, companies could put generations into three packages:
 - The older generation would retire; concerned with pensions
 - The middle generation was the bulk of the workforce, focused on compensation, earning potential and benefits
 - The younger generation would support the future; was in need of education and training
- Currently (2006), nothing fits in a neat package, due to changing workforce demographics
- ***Boomer population dominating the workplace; slated to retire within next ten years***
- According to AARP, by 2025 workers age 55 and older will be more than 20 percent (1 out of 5) of the total workforce

US Labor Force Growth 1950-2025



Age Distribution of US Workforce 2000-2010



Carleen MacKay - Spherion

Boomer Retirements

- **Expected Boomer retirements will impact the following entities:**
 - **Companies**
 - **Communities**
 - **Society**
 - **Government**
 - **Workers (Engineers and Scientists) (those remaining as well as those retiring)**

Boomer Retirement Impacts

- **Companies will risk:**
 - **Lack of qualified workers**
 - **Loss of institutional knowledge**
 - **Need for succession planning**
 - **Work not getting done**
 - **Systems failing as a result**

Boomer Retirement Impacts

- **Private sector industries in terms of imminent skills shortages include**
 - oil, gas, energy and healthcare
 - aerospace and defense
- **Public sector, Federal, state and local government agencies are particularly hard-pressed**
- **Academia – many professors are nearing retirement age – where will the new faculty come from?**

Boomer Retirement Impacts

- **Communities, Society, and Government will face issues:**
 - **Loss of competitiveness**
 - **Loss of high value jobs**
 - **Loss of income**
 - **Loss of economic innovation**
 - **Loss of military innovation**
 - **Loss of viable communities (from non-Competitiveness and lack of innovation)**
 - **“The sky is falling” (Political fear)**

Boomer Retirement Impacts

- **Remaining engineers and scientists will face:**
 - Increased stress (more work)
 - Reinventing lost knowledge
 - Feeling lost (lack of mentors)
 - Increased risk (loss or injury)
- **Retiring engineers and scientists will face:**
 - Loss of value (no work)
 - Loss of face (no job)
 - Loss of energy (no goals)
 - Loss of mental acuity (no challenge)
 - Loss of income (reliance on retirement savings)
 - Loss of job and professional identity

Boomer Retirement Impacts

- **Midcareer workers (35-54 - includes most Boomers and older Gen X) face:**
 - people are bottlenecked – limited upward mobility
 - work/life balance issues
 - lack of retirement savings
 - skills obsolescence coupled with increasing workload (limited time for retraining)
 - disillusionment with employer
 - burnout
 - career disappointment

Skills Shortage?

- Will there be a **SKILLS** shortage before there is a shortage of workers?
- Many employers are complaining that they cannot find workers to meet specific skill needs – this has been dismissed as the result of management's unwillingness to hire anyone who appears to need any on-the-job training.
- The demand for labor is based on several factors: economic conditions, productivity, outsourcing/offshoring of jobs, and immigration.
- The supply of workers is based on education (skills) and workforce participation (how many people are available/desire to work).

Is this a REAL Problem?

- **2010 viewed as “turning point”**
 - **worker shortage and a “skills drought”, following the Boomer exodus?**
 - **obsolete U.S. cultural attitudes about education, careers, and lifelong learning?**
 - **addition of the India, China and ex Soviet bloc workers into the world economy trump any worker shortage?**
 - **are all “lost” jobs really needed?**

Company HR Responses

- **Top human capital concerns for large employers:**
 - Availability of Talent: 38%
 - Talent Management: 29.1%
 - Retention of Key Employees: 20.9%
 - Maintaining Intellectual Capital: 17.4%
- **Their view of the aging workforce issue was:**
 - An issue to be dealt with: 42.4%
 - An opportunity to be leveraged: 24.7%
 - Little or no impact: 32.9%
- **Those viewing aging of workforce as an issue:**
 - Will lead to workforce shortage: 52.9%
 - Will lead to excess of older workers: 8.8%
 - Barriers to dealing with this issue were listed as:
 - >Legal statutes: 11%
 - >Costs: 10%
 - >Cultural concerns: 8%
- **Only 50% of 40% (e.g. 1 out of 5 large companies) felt there would be any workforce shortage.**

Public Policy Recommendations

- US is facing a future competitiveness issue that must be addressed *now*
- Training for K-12 kids in math and science is needed to avoid “technological illiteracy”
- Burnishing image of engineers to encourage interest in the profession
- Detailed study/research on intergenerational issues
- Amend pension rules to prohibit reductions in pension benefits if an employee’s pay drops
- Support flexible retirement
- Eliminate early distribution penalty if > 30 years of service and allow distributions from 401(k) plans < 59
- Allow Medigap insurance coverage for 55-65
- Liberalize nondiscrimination tests for flexible retirement plans

Resources

- Henry Gregor, www.4-dconsulting.com/links.html
- Today's Engineer Career Archives
<http://www.todaysengineer.org/archive/career.asp>
- IEEE Career Alert (What's New @ IEEE)
- Engineering Careers come in Four Varieties, Vern Johnson
<http://www.todaysengineer.org/2003/Apr/variety.asp>
- Successful Career Makeover for Engineers..., Trudy Hu
<http://www.todaysengineer.org/2005/oct/makeover.asp>
- Engineers as Commodities, George McClure
<http://www.todaysengineer.org/2005/Oct/commodities.asp>
- IEEE-USA Career Navigator <http://www.ieeeusa.org/careers/>
- *The Age of Unreason*, Charles Handy, 1989, Boston: Harvard Business School Press

Resources

- ***Workforce Crisis: How to Beat the Coming Shortage of Skills and Talent***; Dychtwald, Erickson, and Morison, Harvard Business School Press, April 2006
- ***The 2010 Meltdown: Solving the Impending Jobs Crisis***; Edward E. Gordon, Praeger, 2005
- AARP, Boomers Policy & Research, <http://www.aarp.org/research/reference/boomers/>
- ***“Labor Market Imbalances: Shortages, or Surpluses, or Fish Stories?”***; Richard B. Freeman, Boston Federal Reserve Economic Conference - “Global Imbalances – As Giants Evolve”, Chatham, Massachusetts, June 14-16, 2006
- ICDC 06 slides @ www.ieee-or.org/pace

Extra - Career Survival Slides

- **New Career Paradigm**
- **Requirements for Success**
- **How to Adapt**
- **Creative Job Search**

What Is The New Career Paradigm?

Old Career Paradigm: Linear Model

New Career Paradigm: Circular Model

1. Amorphous (No Shape, No Roadmap)
2. Nebulous (No Substance)
3. Ambiguous (No Clarity)
4. Uncertain (No Warranty)
5. Irrational, Chaotic, Unpredictable (No Logic, No Control)
6. Risky (No Guaranty)

Source: Dr. Trudy Hu, Career Makeover

Requirements for Success

- **All Engineers Need to be Independent Learners**
- **Career Planning is Key – 1, 3, 5, 10 years**
 - Careers follow an arc of challenge, response, adapt, overcome, succeed, repeat, and twilight
 - A successful career must focus on what a person does best and is interested in
 - A career plan includes goals, external influences, personal talents, metrics, sources of information, and how to achieve your goals
 - An significant external influence is the values and culture of your employer

Requirements for Success

- **Need to be Independent Learners**
- **Career Planning is Key – 1, 3, 5, 10 years**
- **Relocation – go where the jobs are**
- **Execution Focus & Value Added**
- **May need Career Transition (Career Shift)**
- **“Branding” (what is yours?)**
- **Business models**
 - **“You are a business”**
- **Need to think like a business person not an employee**

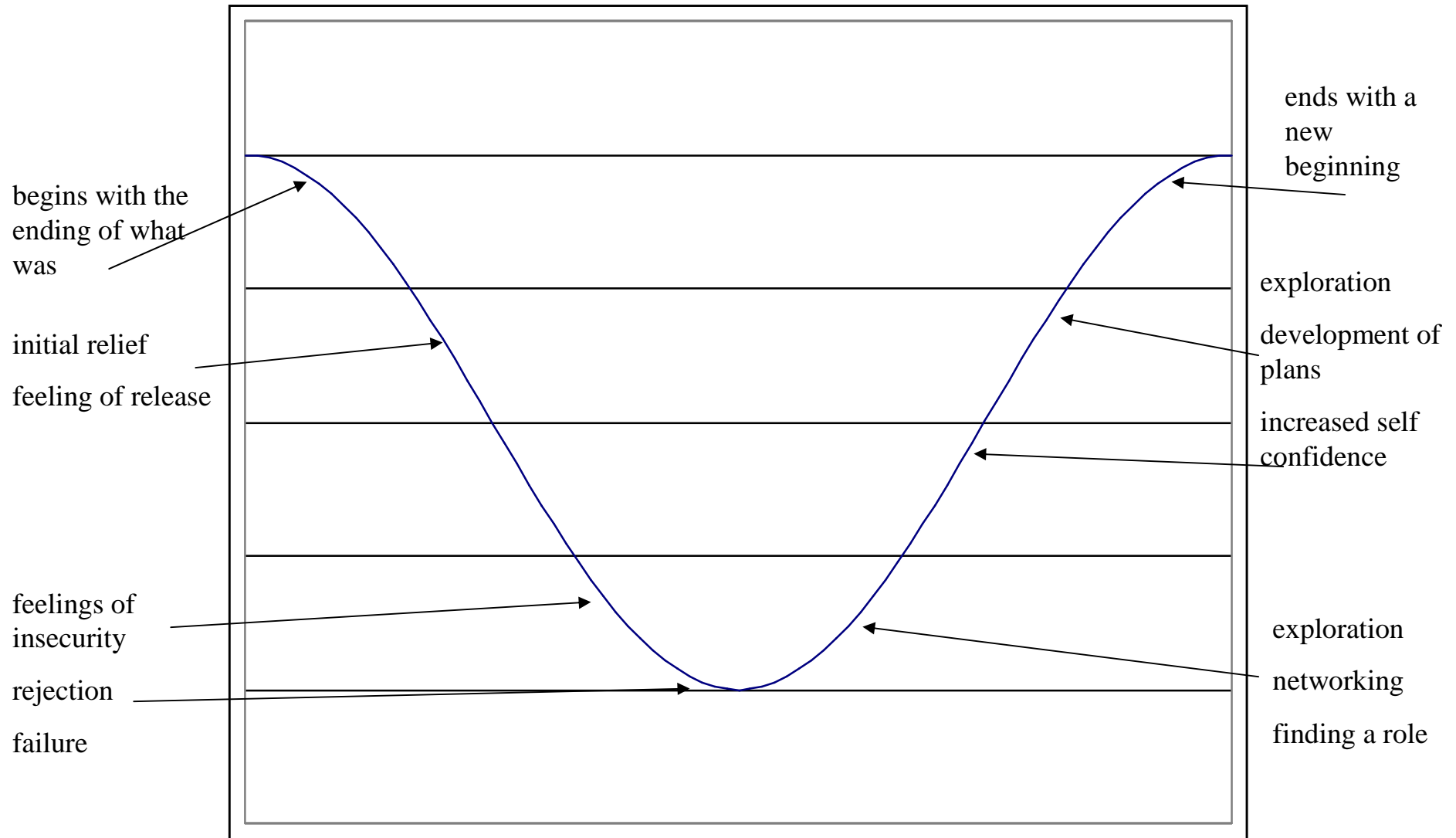
How You Can Adapt

Career Transitions

- **Careers are not Linear Extrapolations**
- **Factors Causal to Career Shift**
 - **Time Since Graduation**
 - **Industrial Changes**
 - **Technological Changes**
 - **Age and Currency of Skills**

Material Courtesy H. Gregor 4-dconsulting.com

Transition Timeline



How You Can Adapt

Business Models

- **How and why you want to make money**
- **You have a Business Model, even if unaware**
 - **Have a Job to pay the bills?**
 - **Maintain Employability in your field?**
 - **Do your Life Work?**
 - **Make the World better?**
 - **Win the Nobel Prize?**
- **Know your motivation and goals**

How You Can Adapt

Jobs (And Businesses) are all about Value!

- **Businesses add Value to make Profits**
- **EEs must add value to Keep/Get a Job**
- **You must have a Value Proposition (how you will create desired results)**
- **It Must Jump off the 1st Page of your Resume**

How You Can Adapt

“[those] who survive and thrive are those who figure out what kind of work can only be done here and then pursue that kind of work”

**Nick Corcodilos,
AskTheHeadhunter.com**

Creative Job Search

- **Work vs Job (What do You Want)**
- **You are a Business Mindset**
- **Elevator Pitch**
- **Informational Interviewing**
- **Gap Analysis (IEEE-USA eBook)**
- **Continuing Ed Options**
- **Networking (Find Someone Who Has What You Want)**

Career Survival

- **Your Career is a Business so Run it Like One!**
 - Invest in yourself and your career
 - What are your services, features or benefits?
 - What is your P&L?
 - What is your market?
 - Who are your customers?
- **You are your Business's product!**
 - Learn to Sell It!

Intergenerational Workforce: Multigenerational Development

By Dr. Trudy Hu

Licensed psychologist

IEEE-USA Career & Workforce Policy
Committee

Jan 9, 2007 – AIAA Career Workshop



An aerial photograph of a sandy beach with two people walking near the water's edge. The text is overlaid on the image.

Agenda

Introduction

Importance of Intergenerational Workforce

Challenges of Intergenerational Workforce Research

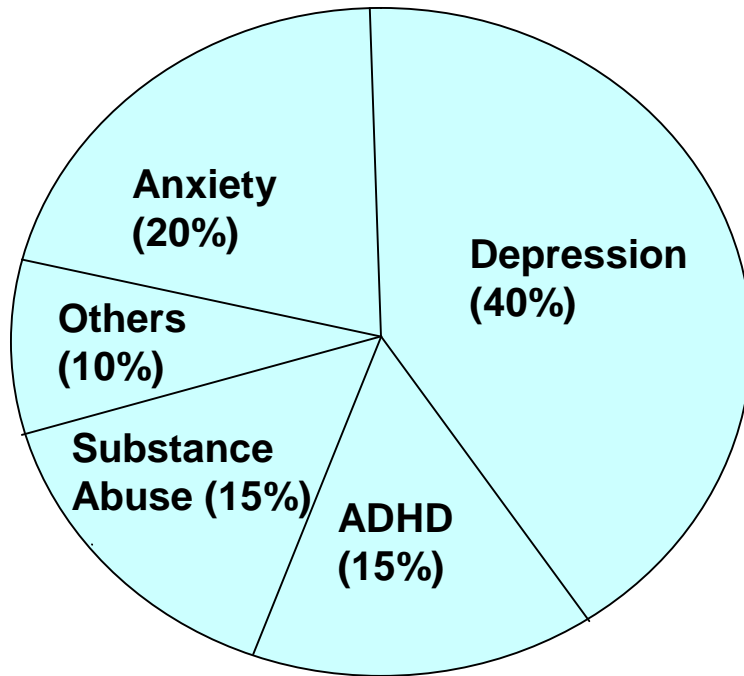
Life-Stage Developmental Theory

Group Discussion

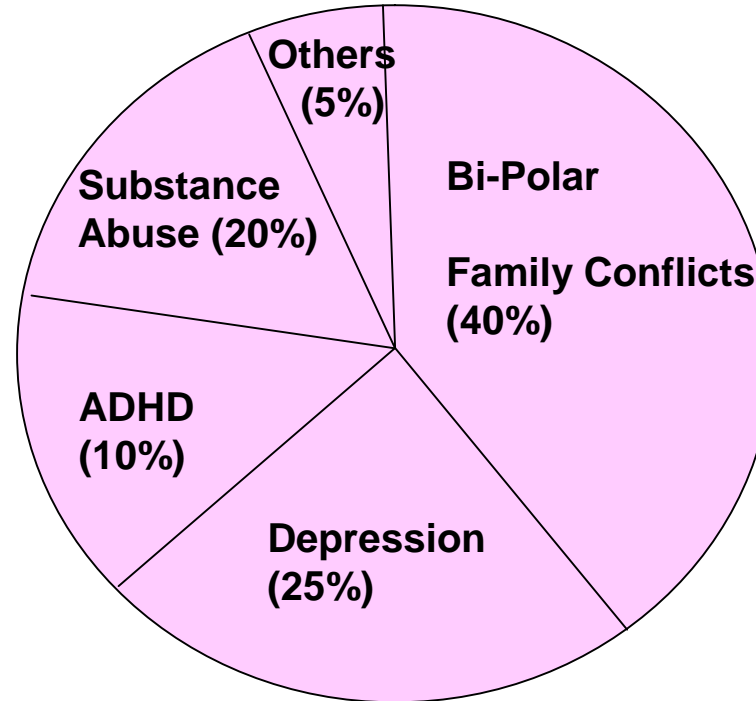
Self-Assessment

Policies for Future Workforce

Clinical Diagnosis in the 90s



Recent Clinical Trend



Importance of Intergenerational Workforce

- Understanding **social, cultural, and value** influence upon the workforce
- Encourage **policy maker, society leaders** to understand the impact of these invisible factors upon tangible issues, such as **productivity, economy, wealth, prosperity** of a community
- Provide industry executives some **insights and guidance** in **recruiting employees** and enhancing **workforce competitiveness** in the global economy
- Helping companies identify different strategies in **corporate culture** and **shaping employees** into corporate value

Reference Source: Dr. Peir Chu

Importance of Intergenerational Workforce

- 1. Individual Level:** Personal Career, Career Planning, Life Long Career
- 2. Life-Stage Development:** different age cohort, collective generational cultures
- 3. Business and Corporation Level:** Identify business goals and values, Understand the changing values, needs, and trends of workforce, Recruitment strategies, Productivity, Competitiveness in global market

Business is like a person. If a business does not grow in a healthy way, it becomes stagnated.

- 4. National and Global Level:** Evaluate current parental, educational, social and economical policies, Provide a global directions for future education, economy policies.

An aerial night photograph of a large waterfall, likely Niagara Falls, with city lights visible in the foreground. The water is illuminated with a blue and purple glow. The text is overlaid on the image in a yellow, bold font.

Current Intergenerational Workforce Reality

1 out of 4 US total population is a senior citizen

1 out of 3 US total population is 50+ years old

1 out of 5 US total population has a disability

1 out of 5 US total population is Hispanic

More Female Managers and Skilled Workers

The Most Diverse Workforce Emerges

Global Economy & Global Competition

Let's Do the Numbers

- **Financial stress:** Average saving for a retiree is **\$23,000** (2006)
- **Loss of Meaning/Focus:** Majority of the retirees passed away within **12-18** months after retirement (pension data from 1998)

USA Today Reported (July, 2006):

- **40%** of retirees were **forced out**, average age: **59**
- **47%** of people who retired earlier due to **health problems**
- **44%** of people who retired earlier due to **unemployment**

Career Issues for Workers who are 50+

- Demand higher salary, less career choices, easy to be replaced
- Vulnerable for laid-off or “forced early retirement”
- **20-30** years of life span ahead of the early retirement or unemployment
- More **experiences**, good work **ethics**, **maturity**, **reliable**, etc.

Challenges of Intergenerational Workforce Research



Unprecedented Intergenerational Workforce Emerging

Lack of Intergenerational Workforce Researches

Lack of Intergenerational Workforce Theoretical Frameworks

Most of the Developmental Theories were Developed Between 1950s-1970s.

This Intergenerational Workforce Research is Pioneered and Commissioned by IEEE-USA and CWPC Team.

This Intergenerational Workforce Theoretical Framework:

Individuals' Development

Generations' Collective Characteristics

Social & Political Backgrounds

Impact of Technology on Generations

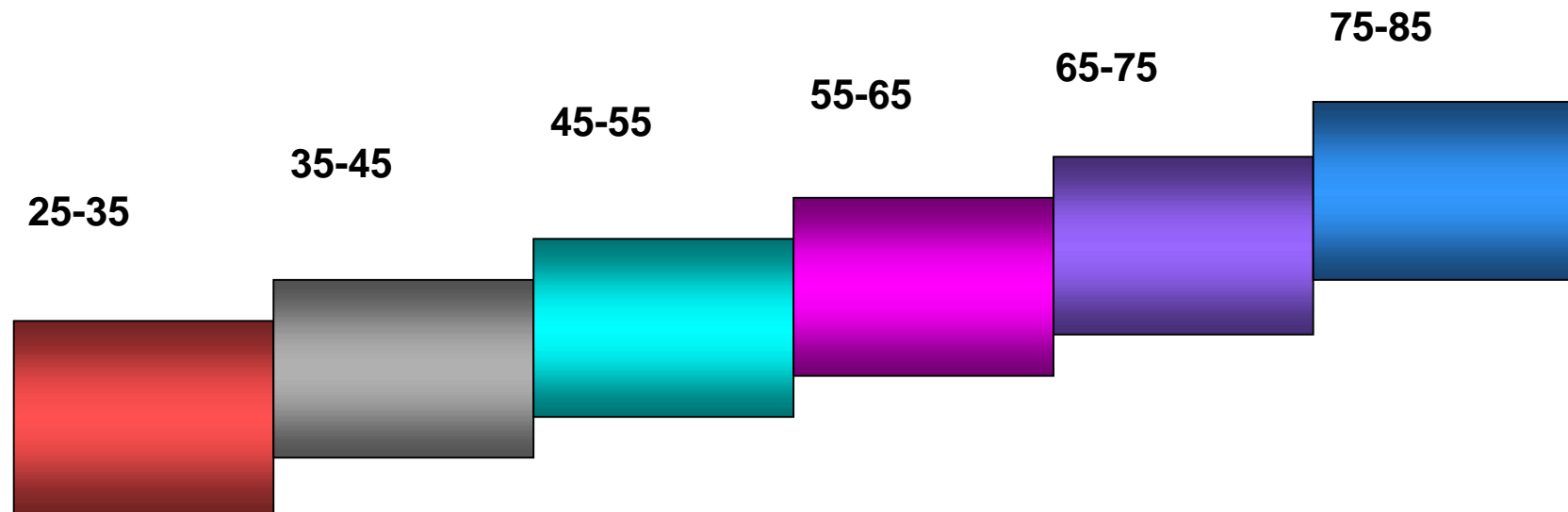
The Life-Span Development Theory

<u>Stages (Age)</u>	<u>Developmental Theme</u>	<u>Virtues</u>
1. Infant (0-1 years):	Basic Trust vs. Basic Mistrust	Hope
2. Toddler (1-3):	Autonomy vs. Shame and Doubt	Will
3. Early Childhood (3-5):	Initiative vs. Guilt	Purpose
4. Middle Childhood (6-10):	Industry vs. Inferiority	Competence
5. Adolescence (10-18):	Identity vs. Identity Confusion	Fidelity
6. Young Adulthood (18-35):	Intimacy vs. Isolation	Love
7. Middle Adulthood (35-60):	Generativity vs. Stagnation	Care
8. Later Adulthood (60+):	Integrity vs. Despair	Wisdom

Eric H. Erikson's Life-Stage Development Theory developed in 1950s-1960s considers the stages of a person's life from birth to death. Erikson's theory addressed the social influences and the interactions between individuals and environment.

Group Discussion

Life Stages and Generational Differences



Prelude: 1920s-1930

Major Political and Social Events

Lindbergh's Flight (27)

Scientific breakthrough

Radio-Major Medium

Era of Iconic Heroes-T. Edison,

H. Ford, A. Sloan, N. Tesla

Voting Right for Women (20)

Major Industry

Aviation

Automobile Mass

Production

Silent Movies

Corporations emerging

Characteristics of the Workforce

Risk taking, pioneering into aviation and engineering inventions

20th Century Pioneer Generation: 75-85 Years Old

1930s-1940s

Major Political and Social Events

Great Depression Era, Social Security
Communism, Fascism Emerging
Skyscrapers

Major Industry

New Deal
National Industrial
Recovery Act

Age Childhood Adolescence

75-85 1920s-1930 1930s-1940s

Enter Workforce

1940s-1980s

Characteristics of the Workforce

Fear, Hunger, Uncertainty

Motivators

Economic Security

World War II Generation: 65-75 Years Old

1940s-1950s

Major Political and Social Events

Pearl Harbor (41)

WWII

Atomic Bombs (45)

Iron Curtain (46)- Soviet, China(49), Korea(53), Vietnam(54)

Major Industry

Military

Defense

Manhattan Project

Age Childhood Adolescence Enter Workforce

65-75

1930s-1940

1940s-1950s

1950s-1990s

Characteristics of the Workforce

Honor, Duty, Responsibility, Conformity

Motivators

Engineer Leader's View on Intergenerational Workforce

George F. McClure



- **Honor, duty, responsibility** and **conformity** were characteristics of the populace and the workforce
- There were **little cynicism** expressed.
- Returning GIs took advantage of the GI Bill to get a college education, married, settled down, started Baby Boom, cookie-cutter subdivisions
- Those reaching adulthood in the 1950s were called "**The Silent Generation**".

Early Baby Boomer Generation: 55-65 Years Old

1950s-1960s

Major Political and Social Events

Soviet Espionage (50), Cold War,
Korean War (50), Red Scare,
McCarthyism (54), Sputnik (57)
TV-Major Medium (50)

Major Industry

Armaments

Age

55-65

Childhood

1940s-1950

Adolescence

1950s-1960s

Enter Workforce

1960s-2000s

Characteristics of the Workforce

Conformity, Respect Authority, Golden Rules

Motivators

Late Baby Boomer Generation: 45-55 Years Old

1960s-1970s

Major Political and Social Events

JFK, Cuban Missile Crisis (62),
Civil Rights Movement (63),
Vietnam War (64), Anti-War Protest (67),
Assassination/Riots (68), Man on the Moon (69)
Colored TV

Major Industry

Military-Industrial
Mainframe Computer
Transistor Radio
Commercial Jet Aviation

<u>Age</u>	<u>Childhood</u>	<u>Adolescence</u>	<u>Enter Workforce</u>
45-55	1950s-1960	1960s-1970s	1970s-2010s

Characteristics of the Workforce

Challenge Authority, Mistrust toward Government, Rebellious
Individuality, Hippie Culture, Substance Use, Cynicism, DINK

Motivators

Order, Law, Respect, Less Violence, Free Choices

Engineer Leaders' Views on Intergeneration Workforce

Paul Kostek



Age 25-35: This is an interesting group to work with, they have **high expectations**, **question** everything and look for **constant feedback**. They expect to **move up and succeed**. An interesting challenge to manage. And it will be interested to see how they respond to a down economy.

Age 35-45. A **transition** age, this is the group looking to **move up** within companies and facing competition from the 25+ generation that **isn't interested in waiting their turn**. Look for **balance** in life and willing to make the trade-offs.

Age 45-55. Last of the boomers and **survivors** of the end of the social employment contract and the Dot-Com bust. **Looking for opportunity** in a changing world.

Age 55-65. Many in this group are focused on the **short-term**, get to retire and then take the next step. Has a level of **concern about the future** and employment opportunities.

Age 65-75. Last of the Pre-Boomer generation and still adjusting to a changing world, still cling to the **old model of life-time employment** with a company, but open to trying new things.

Transition Generation: 35-45 Years Old

1970s-1980s

Major Political and Social Events

Watergate Crisis (72)

Women's Liberation

The Fall of Saigon (75)

Iranian Hostage Crisis (80)

Nixon's Visit to China (72)

Carter's Peace Talk between Egypt and Israel

Major Industry

Integrated Circuit

Mini-Computer

Declined Automobile Industry

Inflation, Declined Economy

Age

35-45

Childhood

1960s-1970

Adolescence

1970s-1980s

Enter Workforce

1980s-2020s

Characteristics of the Workforce

Shame and Doubt toward authority and leadership,

Substance use, Individual "Freedom", Diversity emerging

Dichotomy Emerging—Highly Devoted Workers or Drifters

Motivators

Economical Exuberant (Bubble)

Generation: 25-35 Years Old

1980s-1990s

Major Political and Social Events

Arms Race (US vs. Soviet & Allies)
Arms Control Negotiation
Berlin Wall Down, USSR dissolved (89)
Iran & Islamic States Conflict
Reagan as a Great Communicator
Strategic Defense Initiative (83)
High Divorce Rate,
High Teen Pregnancy Rate,
High School Drop-Out Rate

Major Industry

Computing, PC
Telecommunication
Semi-conductor
High Technology

Age

25-35

Childhood

1970s-1980

Adolescence

1980s-1990s

Enter Workforce

1990s-2030s

Economical Exuberant (Bubble) Generation: 25-35 Years Old

Characteristics of the Workforce

High-tech stocks skyrocketing, economical exuberance, consumerism, low tolerance of frustration, More pervasive substance use, alcohol consumption, illegal drugs usage, family conflict, declined family support, divorced adult children, spending spree, craving for luxurious perks and images, more mental illnesses—depression, alcoholism, domestic violence, ADHD, declined academic performance, bi-polar unrealistic expectations, declined work ethics, tardiness, frequent absence, disability claims increase, taking advantage of loopholes, strong disciplines and consequences are needed

Motivators

Millionaire, Economical Rewards, Luxury Perks, Celebrity Status, Minimum Obligations

Terror-Conscious Generation: 15-25 Years Old

1990s-2000s

Major Political and Social Events

End of the Cold War

Persian Gulf War (90)

Economic Growth (91)

Domestic Bombing and Violence

Budget Crisis (96); Dot-com Bubble Burst (2000)

Major Industry

Internet

Dot-com ventures

Financial expansion

Age

15-25

Childhood

1980s-1990

Adolescence

1990s-2000s

Enter Workforce

2000s-2040s

Characteristics of the Workforce

Internet savvy, enjoy surfing and social networking online, cognitive knowledgeable but easily misguided,

Fearful, anxious, credit card debt; need guidance at work and personal life; need role models for ethics, thinking and behavioral guidelines; discipline and guidance are needed

Motivators



Resources:

1. Today's Engineer, <http://www.todaysengineer.org>
2. Commodity Engineers, Author: George F. McClure, <http://www.todaysengineer.org/2005/Oct/commodities.asp>
3. Successful Career Makeover for Engineers in the 21st Century, <http://www.todaysengineer.org/2005/Oct/makeover.asp>
4. “The Most Lovable Engineer Archetype—Dr. Benjamin Franklin, An Enlightened Divine Interview Series”, located in Article Section of Dr. Trudy Hu's Website: <http://www.DrTrudy.com>
5. ICDC Engineer Career Development Program. www.ieee-or.org/pace