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

Ed Perkins
IEEE-USA Career & Workforce Policy Committee

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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.

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

PROJECTS / SERVICES
Flexibly coupled to sales & IP

SUPPORT
Don’t directly affect sales or IP

Protect the Corp Culture
Protect & Expand the IP
Set & Implement Policies
Maximize:-
• Revenues
• Earnings
• Return on Investment
• Stock Valuation

Strategic
Tactical
Logistical

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

Annual rates of 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).

Source: *Workforce Crisis: How to Beat the Coming Shortage of Skills and Talent* by Dychtwald, Erickson, and Morison, April 2006
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)
- Engineers as Commodities, George McClure http://www.todaysengineer.org/2005/Oct/commodities.asp
- IEEE-USA Career Navigator http://www.ieeeusa.org/careers/
Resources

- “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
Transition Timeline

- begins with the ending of what was
- initial relief
- feeling of release
- feelings of insecurity
- rejection
- failure
- exploration
- development of plans
- increased self confidence
- networking
- finding a role
- ends with a new beginning
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

Material Courtesy H. Gregor 4-dconsulting.com
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
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

- Depression (40%)
- Anxiety (20%)
- Substance Abuse (15%)
- Others (10%)
- ADHD (15%)

Recent Clinical Trend

- Bi-Polar (40%)
- Family Conflicts (40%)
- Depression (25%)
- ADHD (10%)
- Substance Abuse (20%)
- Others (5%)
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.
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

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

**Characteristics of the Workforce**
- Risk taking, pioneering into aviation and engineering inventions

**Major Industry**
- Aviation
- Automobile Mass Production
- Silent Movies
- Corporations emerging
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   Enter Workforce
75-85  1920s-1930  1930s-1940s  1940s-1980s

Characteristics of the Workforce
- Fear, Hunger, Uncertainty

Motivators
- Economic Security

[IEEE Logo]
World War II Generation: 65-75 Years Old

1940s-1950s

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<thead>
<tr>
<th>Major Political and Social Events</th>
<th>Major Industry</th>
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</thead>
<tbody>
<tr>
<td>Pearl Harbor (41)</td>
<td>Military</td>
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<tr>
<td>WWII</td>
<td>Defense</td>
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<tr>
<td>Atomic Bombs (45)</td>
<td>Manhattan Project</td>
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<tr>
<td>Iron Curtain (46)- Soviet, China(49), Korea(53), Vietnam(54)</td>
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</tbody>
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<tr>
<td>65-75</td>
<td>1930s-1940</td>
<td>1940s-1950s</td>
<td>1950s-1990s</td>
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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”.

[Image of George F. McClure]

IEEE USA

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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)

**Major Industry**
- Armaments

**TV—Major Medium (50)**

**Age** | **Childhood** | **Adolescence** | **Enter Workforce**
---|---|---|---

**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)

**Major Industry**
- Military-Industrial
- Mainframe Computer
- Transistor Radio
- Commercial Jet Aviation

**Colored TV**

**Age** | **Childhood** | **Adolescence** | **Enter Workforce**
---|---|---|---

**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  Childhood  Adolescence  Enter Workforce

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

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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**
- 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**

[IEEE USA]
Resources:


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