



Education

Men and Women in Technology

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Men & Women in the World of IT

- The culture and high pressure of the computing world affects men and women differently. This may be part to blame for the decline of women entering this sector.
- In this session, we will explore some interesting statistics on the demographics that make up the IT workforce, and challenges that are common to both men and women.
- The intent of this session is to increase awareness and provide key strategies that can lead to a better path for success.



Presentation Agenda

Demographics
of IT workforce

IT Culture

Why Women
are Leaving IT?

Aging IT
Professionals

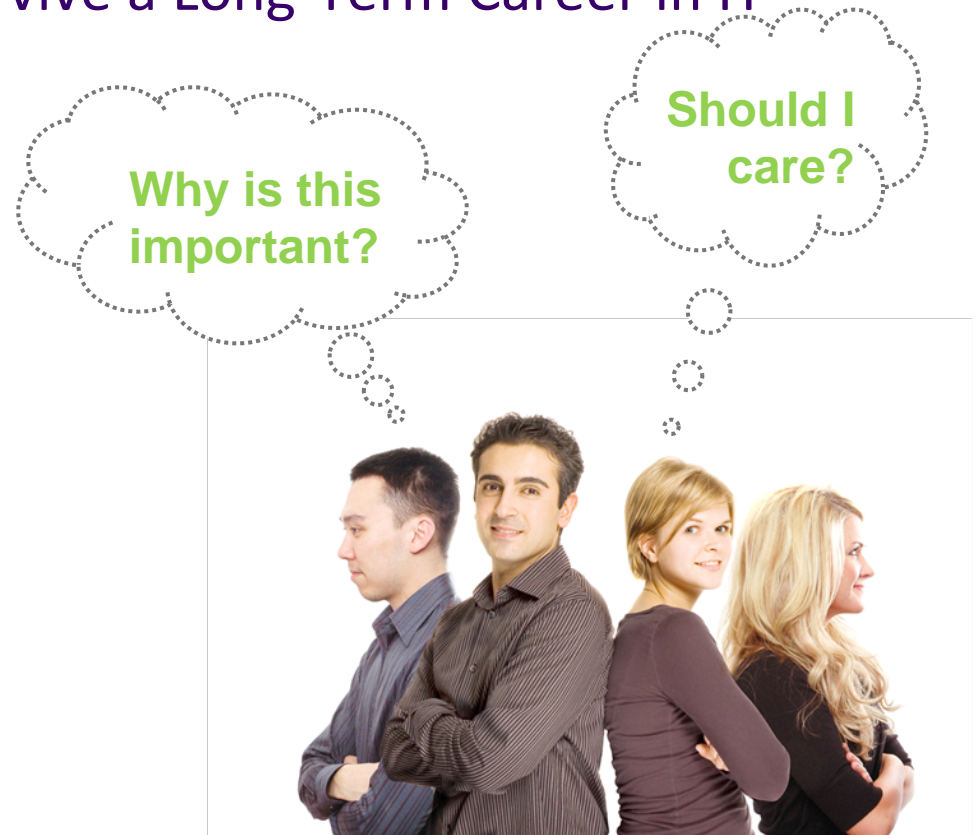
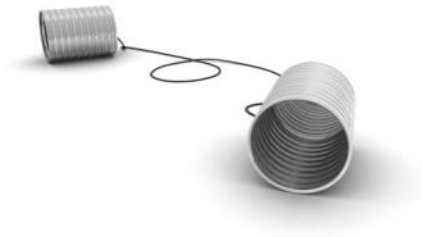
Salaries in IT

Career
Barriers and
Strategies

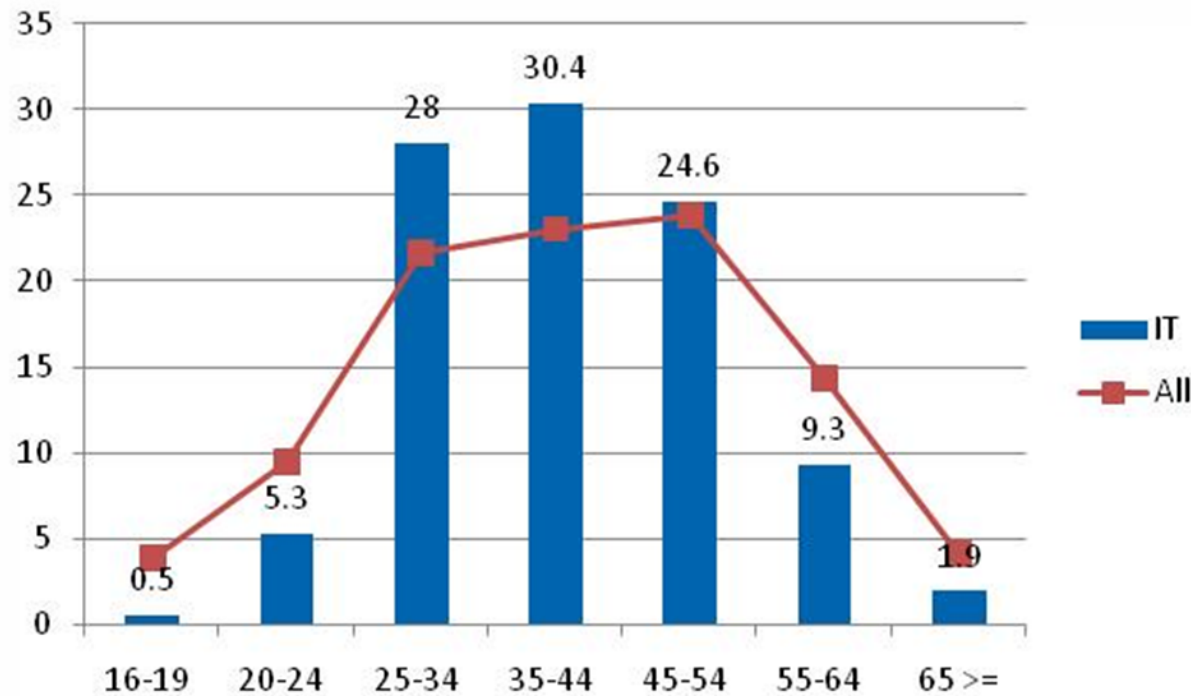


Goal of this Session is Simple

- Raise Awareness on IT job marketing
- Provide Insight on How to Survive a Long-Term Career in IT



Total, all occupations	2008	Projected 2018	Change, 2008-2018	
	Employment (in thousands)	Employment (in thousands)	Number (in thousands)	Percent Change
	1,450.3	2,106.7	656.4	45.3



Observation:

The IT industry compared to all other industries has the largest portion of workers in the 25-to-44 age range.

Men & Women in IT 2008-2018

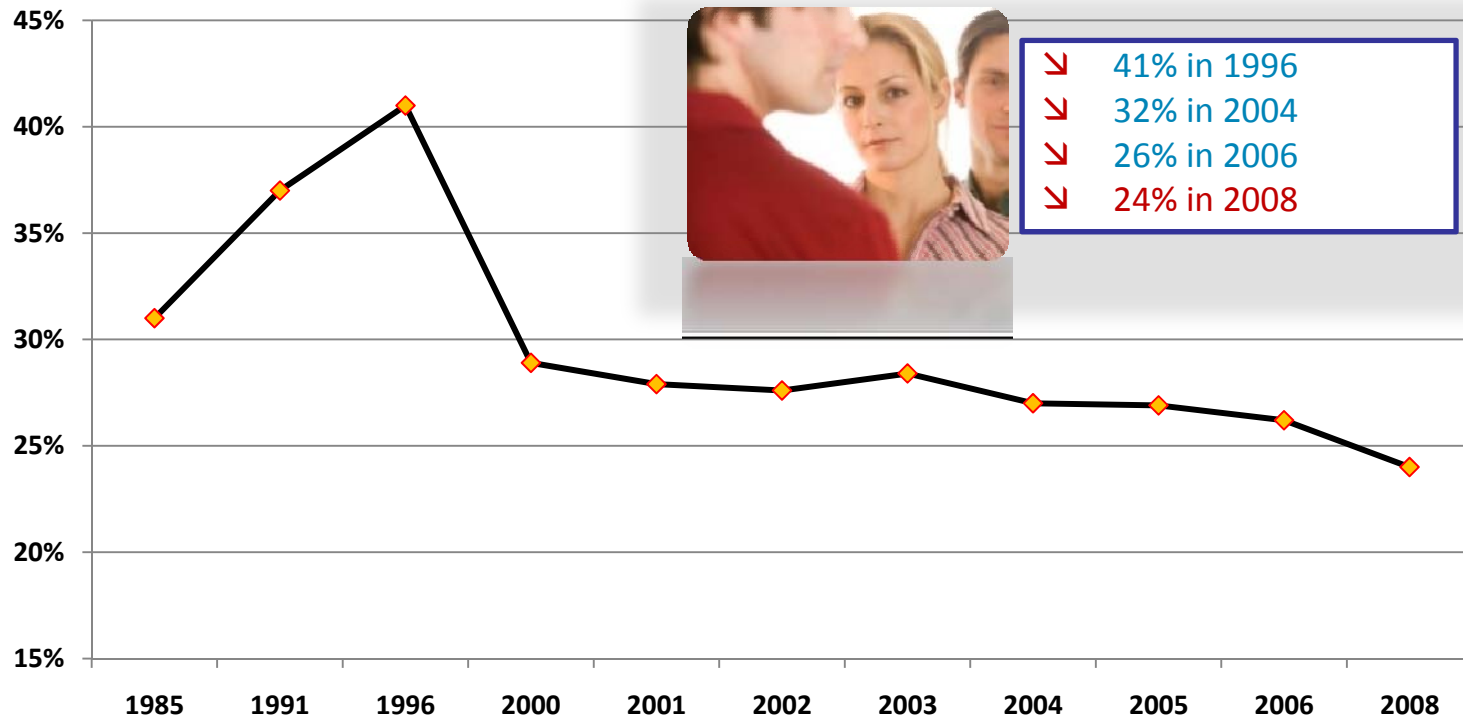
Good News IT is Growing

Job Growth Demographics



Source: US Dept of Labor 2010 Labor Stats 2008 – 2018 Projected Growth based on current economic trends

The percentage of Women in Computer-related Occupations declining since 1991



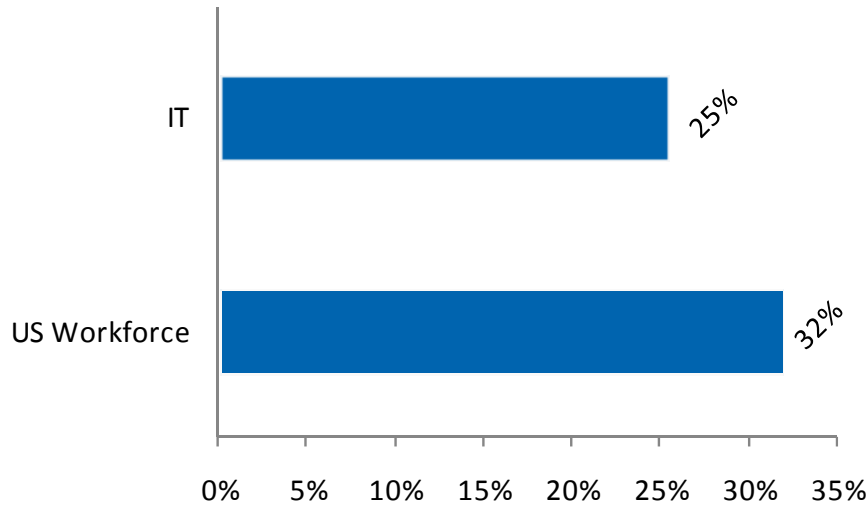
In spite of growth in IT surprising statistics are showing that Women are moving away from this sector

Sources:

Women in IT: The Facts 2009 NCWIT ; US Dept of Labor Stats 2010; Numbers Show Big Decline of Women in IT, By Eric Chabrow Ziff Davis CIOInsight, March 22, 2007

Older workers are underrepresented in the IT workforce

Men & Women Over 45 workforce



“Workers over the age of 45 comprise 31.8% of the overall US workforce and only 25.4% of the IT workforce”



IT has an image of being youthful

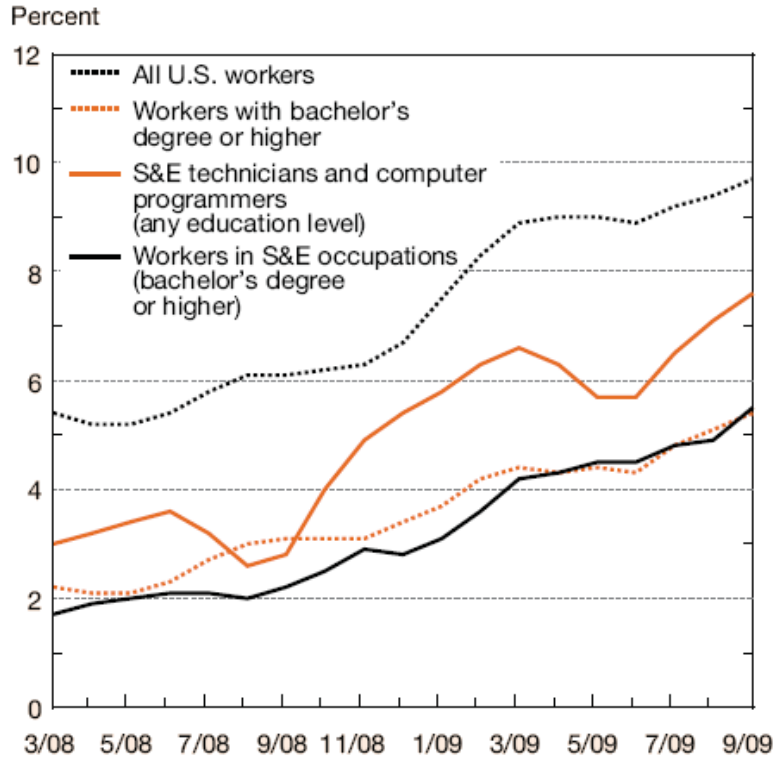


- Attitudes toward older workers are least positive regarding adaptation to new technology
- Lack of retraining / continuing education options are often limited

Recession Impact on Technology Workers

Science and Engineering Labor Force 2010 Report Dept of Labor

Estimated unemployment Rates March 2008-Sept 2009



Technical jobs are less impacted by the recessions relative to other occupations – there are worse places to be

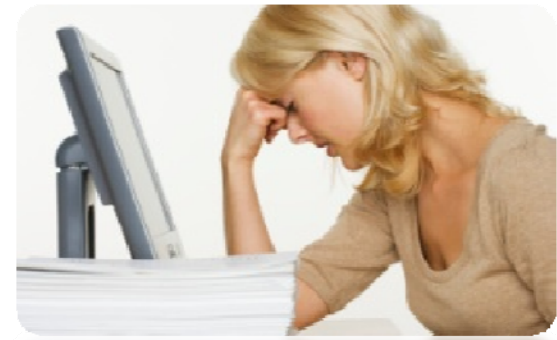
Although S&E qualifications may help workers weather recessions, they do not make them immune from adverse labor market conditions. **The estimated 4.3% unemployment rate for S&E occupations in April 2009, although low relative to other occupations, was the highest in 25 years.**

Factors that Impact IT workforce

Employers need to address issues



- IT Culture/Lifestyle
- Aging of IT workforce
- Decline in Women in IT (both entering & leaving)
- Skills obsolescence: *No.1 issue of workers*



➤ Sixty-hour weeks are common

- ◆ The long hours and last-minute crunches can be **particularly draining for women**, who often continue to bear most of the responsibility for raising children and getting dinner on the table – however it is shifting

➤ Long hours are equally draining on Men and Aging employees

- ◆ Let's not forget the stress of travel, added to the long hours, the late night conference calls, and the early morning meetings are not always seen as necessary.



“Telecommuting options and Flexible Hours only slightly reduce the burden – the workload and responsibility is still there.”

Why do you think you have a Blackberry?

➤ Fast pace of technological change

- ◆ The industry is turned upside-down every 18 months – It makes it harder for women and older workers to keep pace with the fast track if they take any kind of extended family leave.



Is it any surprise that –

***According to the ITAA (Technology America)
ONLY 19% of computer science
graduates are still in IT 20 years later.***

IT Workers Survey confirms No. 1 Fear is Skills Obsolescence's

IT Workers Say Updating Skills is Top Priority for 2009

FOR 2009, WHAT IS THE BIGGEST CONCERN YOU HAVE ABOUT YOUR CAREER?

Keeping Skills Up-to-Date / Being Valuable to Employer	22%
Position Elimination	20%
Lower Salary Increases / Lower Billing Rates	14%
Cancelled Projects / Fewer Projects	12%
Increased Workload (due to staff cuts)	10%
Increased Outsourcing	7%
Position Relocation	3%
No Concerns at this Time	12%

2008-09 Tech Salary Survey Results DICE Salary Survey

- Older IT workers (40 +) are more likely to lose their job than younger IT workers
- Older IT workers are just as likely to find new jobs as younger workers in similar length of time in most cases
- New Jobs for Older IT workers are more likely to come with a cut in pay



“Many older IT workers perceive age discrimination in recruitment and retention”

Why are Women Leaving IT?

- Women are exiting IT in record numbers
 - ◆ Is the IT Culture not appealing?
 - ◆ Need for a better work-life-balance?
 - ◆ The work does not suite their personality/temperament?

- Women are not entering IT
 - ◆ What the perception of being a geek or working with them is it not appealing?
 - ◆ It's a Men's World?

- Is IT no longer a good career choice or the wrong career choice for some women?

- Examine Facts and Theories





“Listening, Communications and Social Skills are important emerging skills for IT”

Mark Raskino
Research Vice President and Gartner fellow.

According to Gartner Analysts

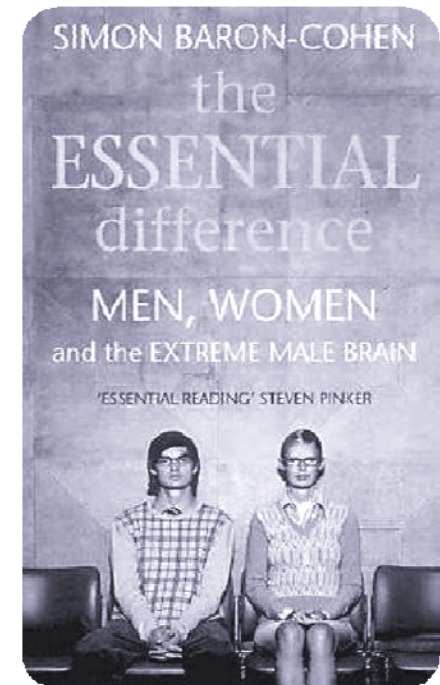
Research by Gartner warns organizations that fail to acknowledge the value of women are increasing their risk of project, business and professional failure.

Gartner analysts say that the changing dynamics of ‘new world’ business practice, dominated by globalization, relationships, communities and collective decision making, **is better suited to women than men.**

Source: Battle of the sexes needed for tech sector August 2006 By John Kennedy, Silicon Republic.com

Businesses at Risk

- Various Analysts have previously predicts that more than 40% of women in the IT workforce will leave traditional IT career paths in the next 5 years
- Organizations are at risk of failure in many global initiatives if they are not able to attract and retain talented women in their IT organizations



IT organizations need to redevelop their capabilities –
the **gender mix needs to change.**

Organizations need to find the right balance

Independence

- For some women, the IT Industry offers a ticket to financial independence
- For others, it offers an equally important psychological independence



Direct Entrants	Deferred Entrants	Indirect Entrants	Parallel Entrants	
Parents (especially fathers), teachers	Teacher or boss	Boss, co-worker, friend in IT	Family and friends	Influential People
Programming class	Elective computer class, on-the-job training, desire for career change	Job experiences and memory of early computer classes	Job opportunities	Influential Experience
Wanting to be seen as special, love of math, finding a calling, marketable skill	Wanting a challenge, enjoyment of the work, finding a calling	Wanting a challenge, desire to make a difference, good at problem solving	Good fit for skills, good at math and programming	Internal Motivations

What drives women to IT is changing

Source: Why Women Choose Information Technology Careers: Educational, Social, and Familial Influences Sandra V. Turner, Phyllis W. Bernt, Norma Pecora, Ohio University, Athens Ohio, April 2002



Source: University Of Michigan

Date: May 26, 2003

University Of Michigan Study Helps Define Why Fewer Women Choose Math-based Careers

Science Daily — ANN ARBOR, Mich. -- Girls and boys who are confident in their math abilities tend to pick a science career based on their values more than on their skills, a study by two University of Michigan researchers suggests. The study found that both boys and girls who were people-oriented tended to choose college majors in the biological sciences---medicine, environmental sciences or social sciences---rather than the mathematically based sciences such as engineering, physics, or astronomy. It also found that math self-confidence, while stronger in boys than girls, played a much smaller role in the choice of college majors and careers than previously thought.

Men & Women Choose Careers for similar reasons

- ✓ Exciting Field
- ✓ Challenging rewarding work
- ✓ Financial independence

IT is perceived as an exciting and innovative industry

Male and Female Differentiated brains

- Does this make a difference in our career choice?
- Are Behavior Tendencies a factor?



✓ **YES** there is a **Difference outside of the obvious**

Physical difference in our brains dictate how we learn process information, perform task and communicate – this difference affects many things about us and how we go about choosing what we do

80/20 Theory

This 80/20 refers to learning styles **ONLY** and should not be confused with or construed to say anything about sexual orientation.

Sabbatini, Renato Ph.D., [Are There Differences between the Brains of Males and Females?](http://www.epub.org.br/cm/n11/mente/eisntein/cerebro-homen.html)
<http://www.epub.org.br/cm/n11/mente/eisntein/cerebro-homen.html>

Male Brains

- The male differentiated brain has a **thicker right hemisphere**
- When men communicate they tend to only use **one side of their brain**
 - ◆ Hardwired for gross motor skills, spatial relations, strategy & problem-solving, tolerance for risk taking
 - ◆ Bridge that connects hemispheres less developed
 - ◆ Tend to be more single-task focused



Learning styles ONLY 80/20 Theory

80% of males have a male-differentiated brain

20% of males have a female-differentiated brain

80% of females have a female differentiated brain

20% of females have a male-differentiated brain

According to Dr. Renato Sabbatini

Female Brains

- **Left hemisphere is thicker** in female oriented brains, which is important to communication
- **When Women Communicate they use both sides of the brain**
 - ◆ Hardwiring best for language facility, auditory skills, fine motor skills, and sequential/detailed thinking.
 - ◆ More integrated brain, uses both hemispheres for most tasks
 - ◆ Thoughts are integrated with the emotional system more frequently and more intensely than most male thoughts.



Learning styles **ONLY 80/20 Theory**

80% of females have a female differentiated brain

20% of females have a male-differentiated brain

80% of males have a male-differentiated brain

20% of males have a female-differentiated brain

According to Dr. Renato Sabbatini

Personality Matters –

The career choices we make are influenced by who we are

Gender Differences

	Temperament	Role	Role Variant	Men	Women	
Abstract or Concrete?	Cooperative or Utilitarian?	Directive or Informative?	Expressive or Reserved?	%	%	
Introspective (N)	<u>Idealist</u> (NF) <i>Diplomatic</i>	Mentor (NFJ) <i>Developing</i>	<u>Teacher</u> (ENFJ): <i>Educating</i>	1.6	3.3	
		Advocate (NFP) <i>Mediating</i>	<u>Counselor</u> (INFJ): <i>Guiding</i>	1.3	1.6	
			<u>Champion</u> (ENFP): <i>Motivating</i>	6.4	9.7	
	<u>Rational</u> (NT) <i>Strategic</i>		<u>Healer</u> (INFP): <i>Conciliating</i>	4.1	4.6	
			Coordinator (NTJ) <i>Arranging</i>	<u>Fieldmarshal</u> (ENTJ): <i>Mobilizing</i>	2.7	0.9
				<u>Mastermind</u> (INTJ): <i>Entailing</i>	3.3	0.8
Observant (S)	<u>Guardian</u> (SJ) <i>Logistical</i>	Engineer (NTP) <i>Constructing</i>	<u>Inventor</u> (ENTP): <i>Devising</i>	4	2.4	
			<u>Architect</u> (INTP): <i>Designing</i>	4.8	1.8	
		Administrator (STJ) <i>Regulating</i>	<u>Supervisor</u> (ESTJ): <i>Enforcing</i>	11.2	6.3	
	<u>Artisan</u> (SP) <i>Tactical</i>		<u>Inspector</u> (ISTJ): <i>Certifying</i>	16.4	6.9	
		Conservator (SFJ) <i>Supporting</i>	<u>Provider</u> (ESFJ): <i>Supplying</i>	7.5	16.9	
			<u>Protector</u> (ISFJ): <i>Securing</i>	8.1	19.4	
	Operator (STP) <i>Expediting</i>	<u>Promoter</u> (ESTP): <i>Persuading</i>	5.6	3		
		<u>Crafter</u> (ISTP): <i>Instrumenting</i>	8.5	2.4		
		Entertainer (SFP) <i>Improvising</i>	<u>Performer</u> (ESFP): <i>Demonstrating</i>	6.9	10.1	
			<u>Composer</u> (ISFP): <i>Synthesizing</i>	7.6	9.9	

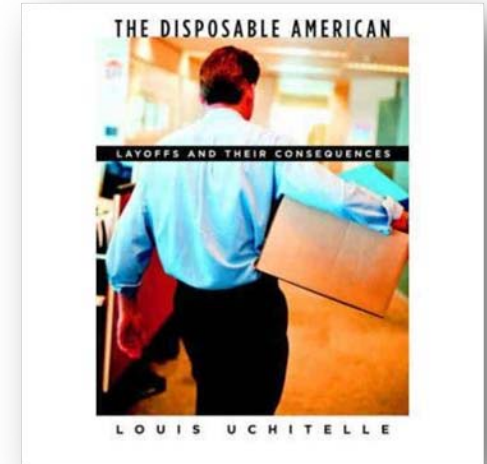
Twice as many men have a personality temperament toward engineering

Temperaments and intelligence types
Brains and Careers (2008), Keirsey

Men are leaving IT too– although not in significant measurable numbers that will show up on the US Census bureau

Why?

- Mass layoffs – companies are going for the “cheaper cut” (not just now since 2002)
- Forced out over 40+ make move for the new generation
- Burnt out – too many hours can have a negative impact on health and the family



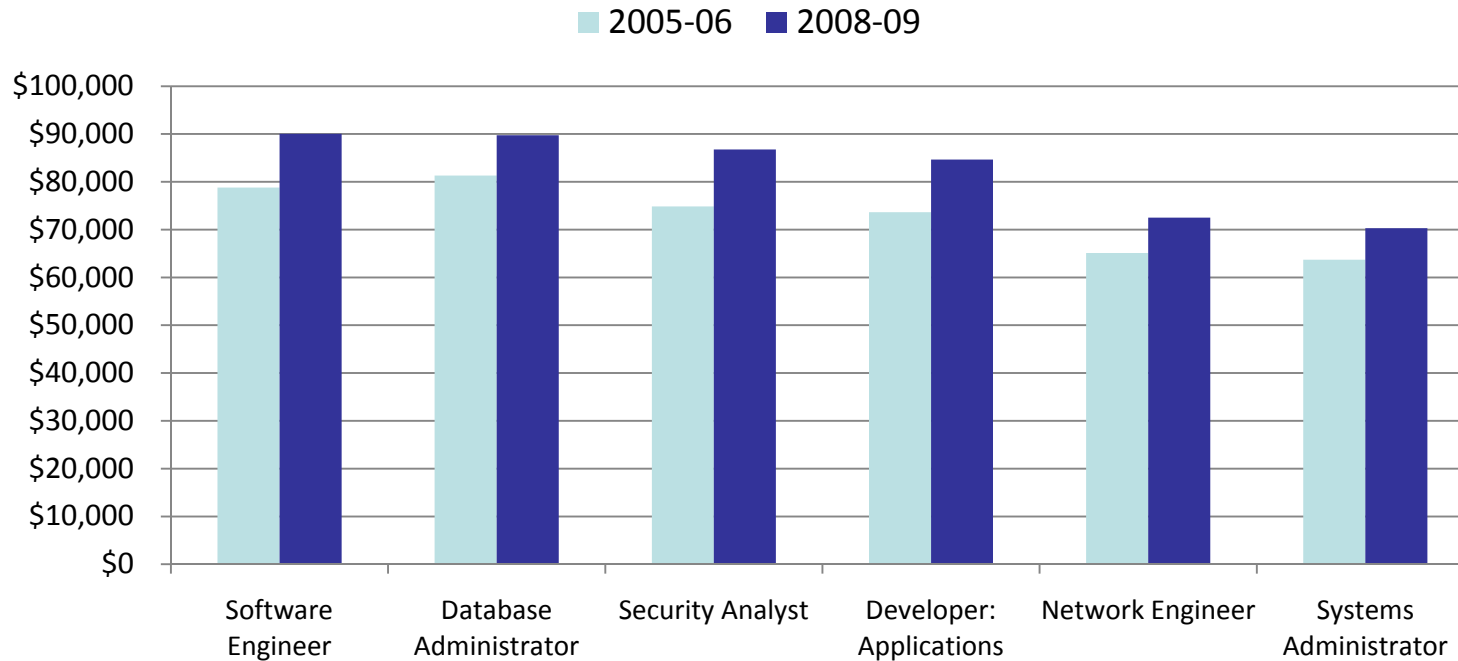
Quotes

- ❖ “Life in IT is hard work long hours – what keeps me in IT is learning new stuff and solving problems, but I don’t have a life” male 35, Systems administrator, large insurance company
- ❖ “The money used to be good, the work always fun and challenging...I have not worked so hard in all of my career as I have in the past 3 years because of our company has aggressive product demands to stay abreast of the competition.” Male 52, IBM Systems Developer

Men need balance too

Top Jobs: Most saw significant change in Salary

Job Title	2005-06	2006-07	2007-08	2008-09	Previous year% Change
Software Engineer	\$78,807	\$83,524	\$84,122	\$90,031	7.00%
Database Administrator	\$81,301	\$85,441	\$85,092	\$89,742	5.50%
Security Analyst	\$74,837	\$79,411	\$80,052	\$86,778	8.40%
Developer: Applications	\$73,636	\$78,037	\$79,421	\$84,672	6.60%
Network Engineer	\$65,122	\$67,202	\$68,391	\$72,496	6.00%
Systems Administrator	\$63,698	\$64,917	\$66,388	\$70,307	5.90%



Do Men earn more? *True or False*

- ❖ Women in certain occupations such as sales engineers earn 43% more, yet less than 20% of women are sales engineers.
- ❖ Men are willing to take more risk with jobs that pay more
- ❖ Women need to care for families and simply can't go after the same opportunities.

IT'S A TRADEOFF:

*YOU CAN MAKE MORE \$\$\$\$
IF YOU ARE WILLING TO SACRIFICE MORE*

What Men or Women Can Do to Earn More?

1. Choose Careers that Pay More
2. Put in more hours
3. Be more productive in the hours you do work

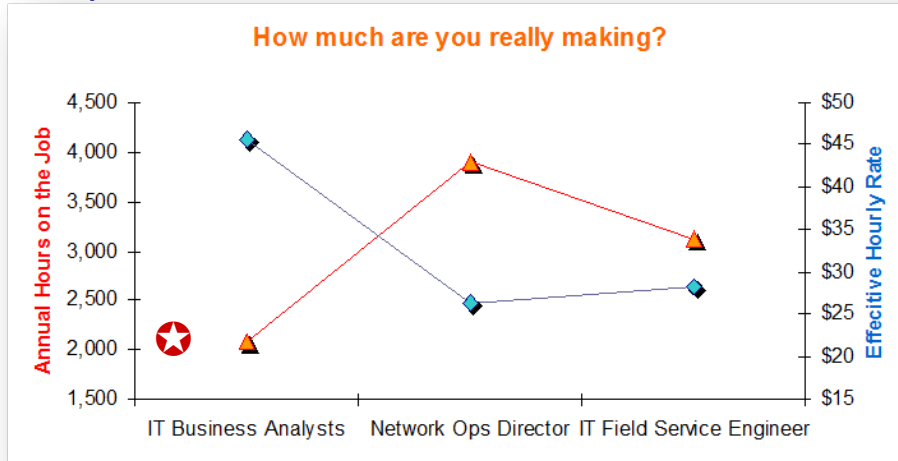
Source: Why men ear more than women by Marty Nemko



➤ Remember life in IT is very demanding

Keep things in perspective to your goals

Do your math:



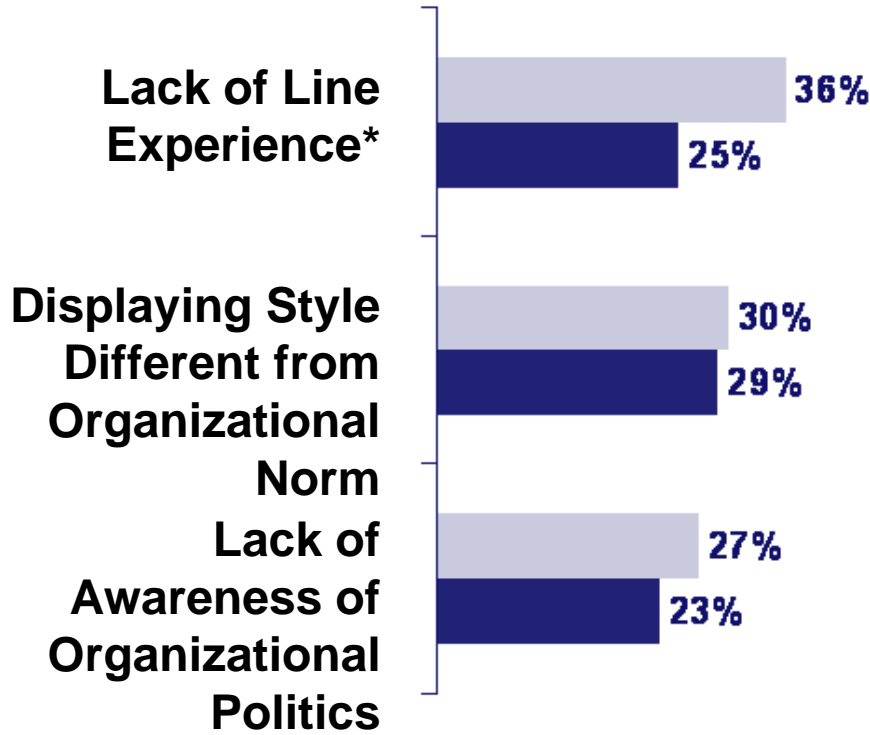
★ 2080 annually - 40 hour work week



Careers that pay more may require a lot of travel (typically 50%) and longer hours

Source: Why men ear more than women by Marty Nemko

Top Barriers to Advancement for Men

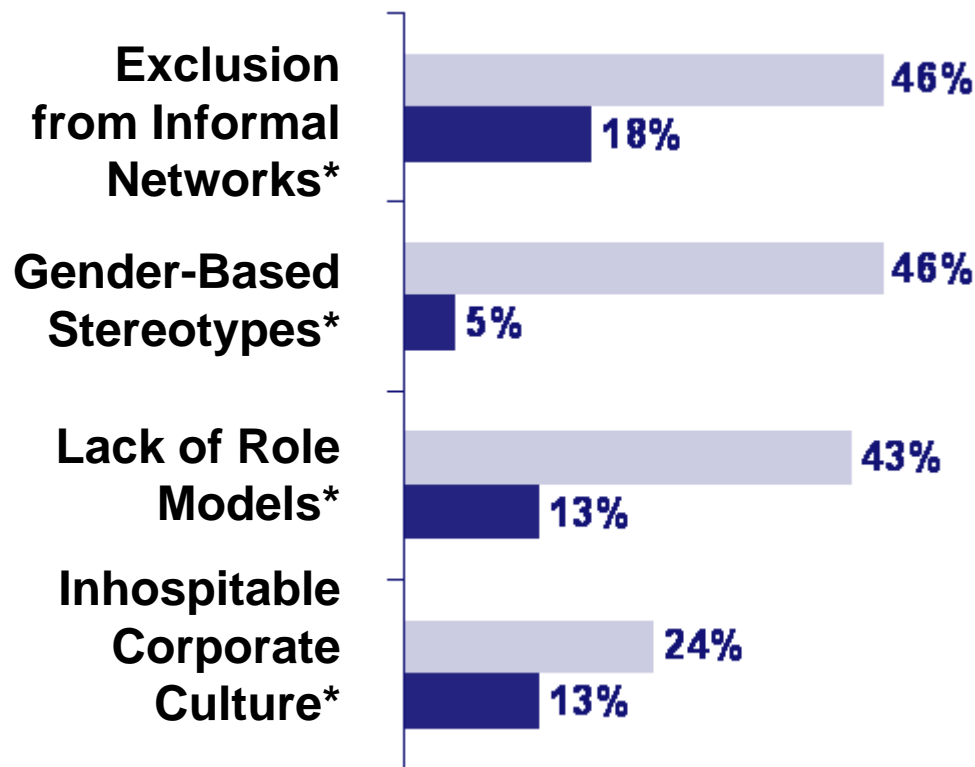


Men's Top Barriers

*Statistically significant

Source: Catalyst, *Women and Men in U.S. Corporate Leadership: Same Workplace, Different Realities?*, 2004

Top Barriers to Advancement for Women



Women's Top Barriers

Women Men

*Statistically significant

Source: Catalyst, *Women and Men in U.S. Corporate Leadership: Same Workplace, Different Realities?*, 2004

Top 10 Things you must do to maintain your marketability

1. Stay Professionally Vital
2. Stay Fit and Healthy
3. Gain New Practical Knowledge
4. Track your Accomplishments
5. Define yourself and create your brand
6. Extend your Network
7. Get Noticed
8. Help your colleagues
9. Always keep your Resume updated
10. Stay Positive

Your Market Value

Top 10 Things
you must do
to maintain your marketability

**What's your
competitive
advantage?**

Remember the World is Flat and people are Hungry for "YOUR JOB"

➤ It's Just Smart Business

- ◆ Companies can benefit with the **right qualified gender mix**
- ◆ Need to Develop **Retention Strategies**
- ◆ Females are typically more holistic (**contextual learners**)

➤ It's a Balancing ACT

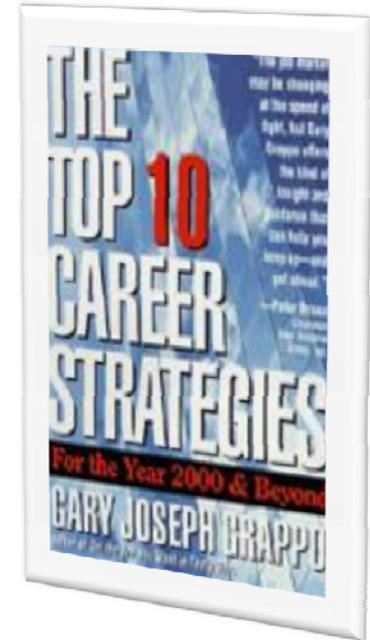
- ◆ Work-family conflict exist for both Men & Women
- ◆ Employers need to provide **flexible environments**
- ◆ Women speak up, **don't drop out** – but be diplomatic, you are a valued commodity
- ◆ Men don't wait until you have a heart attack – **speak up**, you can't be working around the clock forever

➤ Advice to Younger Generation of IT

- ◆ Learn from your predecessors – **IT Lifespan is approx 19 years**
- ◆ **Stay Professionally Vital** – Focus on Business that drives IT
- ◆ Be Prepared to **move into other roles**

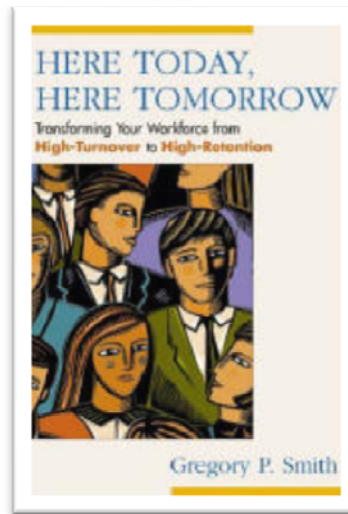
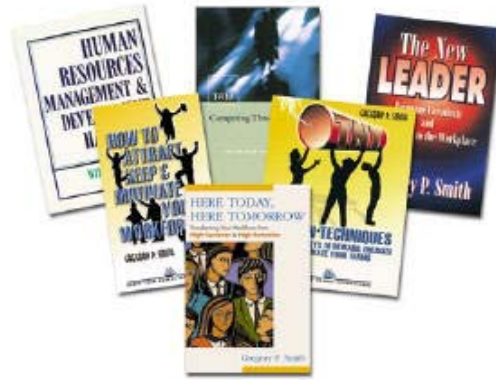


- **Promote the idea of men and women as equal colleagues / team mates** that bring diversity and balance
- **Support the balance** of multiple commitments
- **Build goals** into business planning and human resource processes
- **Provide networking opportunities** that appeal equally to men and women
- **Communicate change** inside as well as outside of the organization



Top Retention Practices

1. Flexible work day options
2. Self Management
3. Access to role models
4. Non-gender Focus: no special treatment; these practices apply to everyone



Top Advancement Practices

1. Coaching
2. Mentoring
3. Training accessibility
4. Job Shadowing/Rotations: exposure
5. Formal Career Paths

Summary

- Technology careers are exciting and financially rewarding for both men and women
- The IT sector is growing faster than any other tech sector and in spite of the recent recession

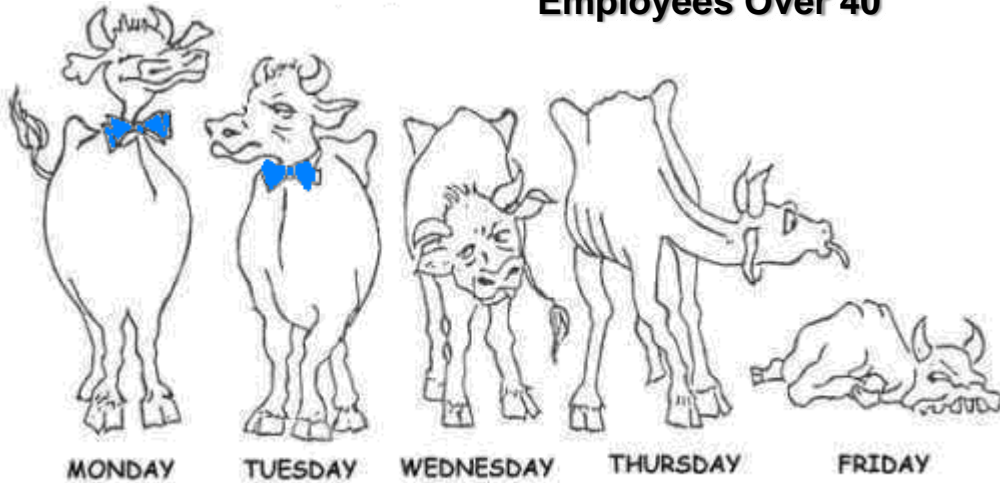


- **Work/Life Balance**
 - ◆ It is important regardless of field – yet more difficult to achieve in IT
 - ◆ Don't drop out - Consider other job opportunities in the field
- **Attracting and Retaining Female IT workers**
 - ◆ This will always remain an ongoing challenge for companies (personality disposition may play a bigger role and than we understand)
- **Companies need to find serious incentives that are important to women**

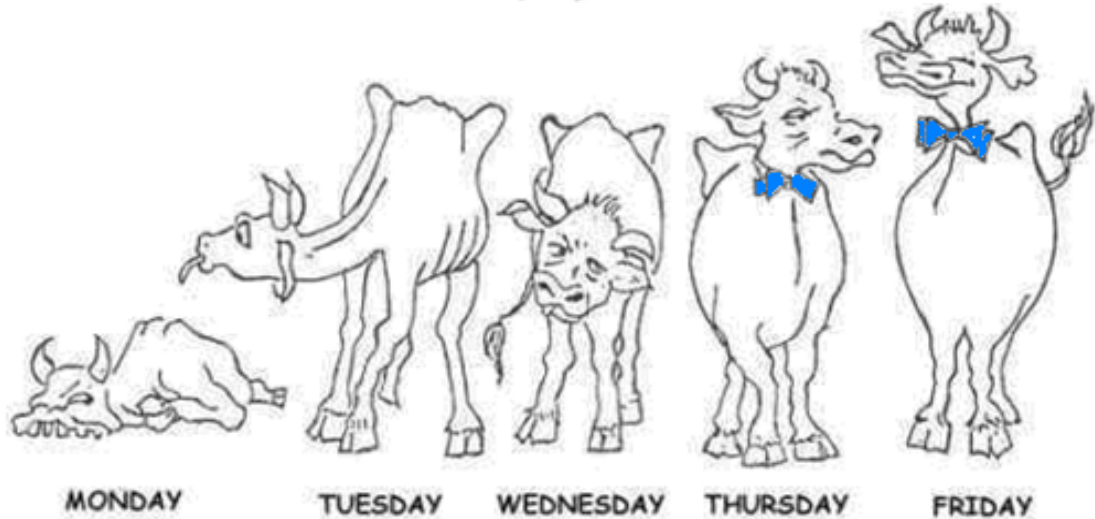
Companies need to create a overall positive environment that supports work/life balance for IT workers

A little humor always puts things into perspective....

Employees Over 40



Employees Under 40



At least they understand each other on Wednesday

- Thank you for attending. Please send any comments on this presentation to giota.then@ca.com.
- Please send comments and suggestions for the Professional Development track to trackprodev@snia.org

