

## Senate Education Hearing Talking Points – May 19, 2008

- 1) There is a wide range of positions in the information technology industry. Each with unique attributes but as a whole offering wide appeal to a broad range of people. Examples:
  - a. Hardware: design, test, manufacturing etc...
  - b. Software: programmers, database analysts, test engineers, etc...
  - c. Consulting: Business process analysts, management consultants, etc...
  - d. Specialties: Information security, networking & telecommunications
  - e. Customer Support: service desk, on-site, Geek Squad, Fire Dog
- 2) Significant job openings exist now and labor shortages are projected to continue. Salaries are increasing on average at 5.3% in 2008 and hot jobs over 7%. (source: Robert Half technology salary survey, November 2007)
  - a. 2007 starting salary ranges \$45,000 - \$85,000 (Yahoo! Hot Jobs)
  - b. 85,000 + High tech jobs currently listed on Dice.com
- 3) The High tech and information technology industry are very important to the Texas economy.
  - a. Companies founded / Headquartered in Texas: EDS, Perot Systems, ACS, Dell, BMC
  - b. Other companies with significant presence: IBM, HP,
  - c. Not to forget, there are also thousands of IT jobs inside all major corporations also headquartered in Texas. Examples: JC Penney, American Airlines, Southwest Airlines, AT&T, Continental Airlines, MetroPCS, etc...
- 4) The challenges for employers is not just quantity of resources but the quality and ability to handle rapid and dynamic change that our industry goes thru each and every year.
  - a. As an industry we bring innovation to the market and it only makes sense that our education system not only teach innovation but embrace innovation throughout the education system.
- 5) Creativity is about coming up with the idea. Innovation is about applying the idea thru changing the established way of doing things. Many universities have begun to apply innovation in their Engineering and Computer Science Curriculums and are seeing position results.
  - a. Georgia Tech, College of Computing
    - i. Introduced Threads program in the Fall of 2006 and now is ranked #9 Nationwide up
    - ii. 2007 Graduates with B.S. in Computer Science average starting salary \$84,000
    - iii. Enrollment up 30% in the past 2 years.
  - b. Neumont University, founded in 2002
    - i. Partnering with Industry to meet the demands of business
    - ii. Accelerated paths
    - iii. Industry sponsors projects students work on
- 6) These examples are relatively new but not the only examples where the engineering and computer science can gain innovation insights. Many other

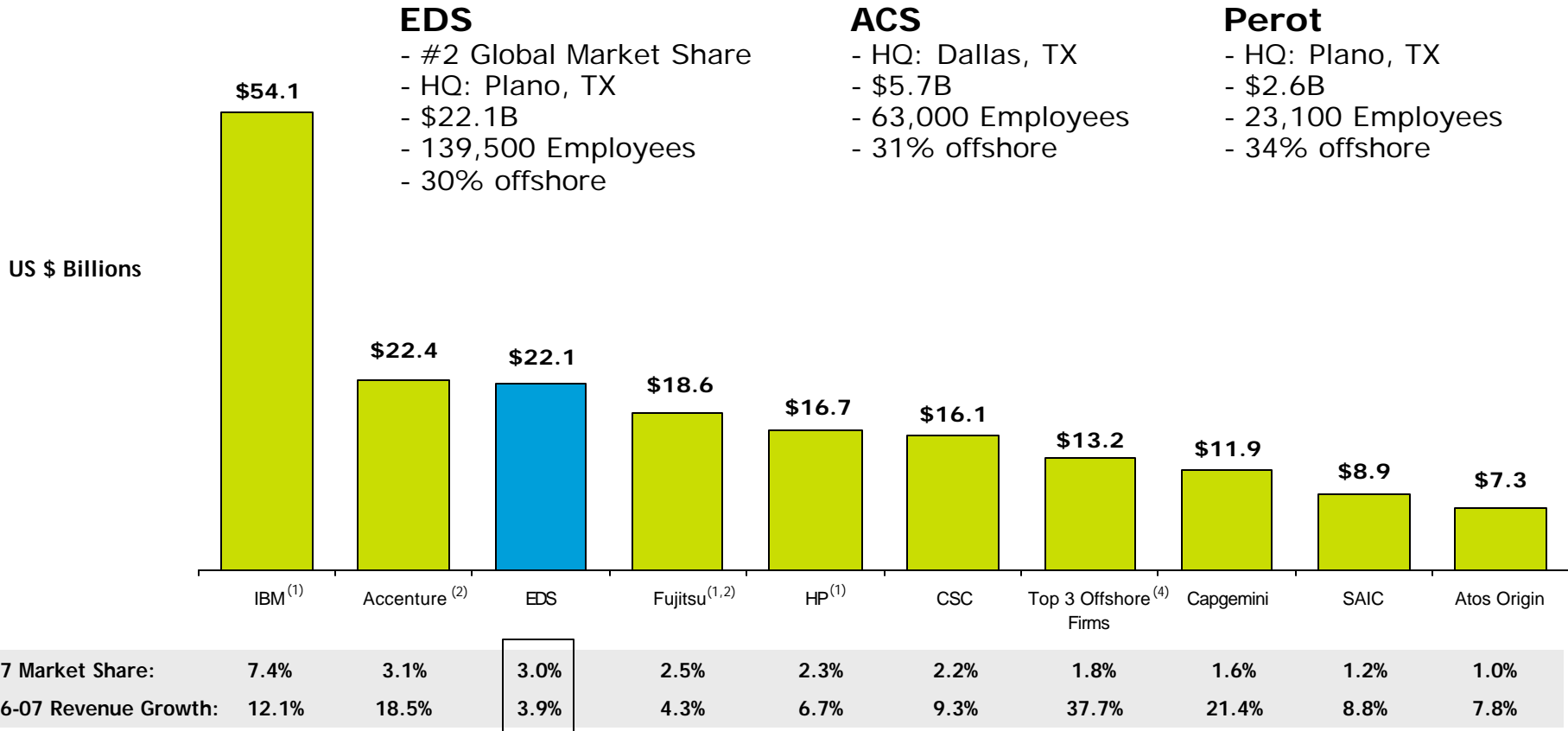
fields have long partnered with business to develop talent through the education system.

- a. Apprenticeship for skilled craftsman
  - b. Student teaching requirement for your education degree
  - c. Medical intern requirement before your MD
- 7) Each of these examples provides the students with on the job training and the opportunity to apply what they have learned in the classroom. By applying these existing models to IT, we can expand the participation in computer science and fulfill our employment needs.
- a. Government, Educators and Industry must partner to design and implement apprentice and intern programs that align to both the curriculum a student is being taught and relevant business problems employers face.

# Salaries for Entry level Information Technology positions in the Dallas, Texas area

<u>Position</u>	<u>25<sup>th</sup> Percentile</u>	<u>Median</u>	<u>75<sup>th</sup> Percentile</u>
Applications Analyst (entry level)	\$45,368	\$50,734	\$60,281
Business Systems Analyst (entry level)	\$42,920	\$48,105	\$55,020
Desktop Technician	\$46,021	\$52,256	\$60,170
Data Modeling Analyst	\$80,735	\$91,123	\$100,310
Help Desk Manager	\$71,462	\$83,365	\$95,744

# Texas Leads the System Integration Market



## EDS

- #2 Global Market Share
- HQ: Plano, TX
- \$22.1B
- 139,500 Employees
- 30% offshore

## ACS

- HQ: Dallas, TX
- \$5.7B
- 63,000 Employees
- 31% offshore

## Perot

- HQ: Plano, TX
- \$2.6B
- 23,100 Employees
- 34% offshore

Note: All values are for calendar year 2007

(1) IBM, Fujitsu and HP include IT services revenue and Maintenance revenues

(2) Accenture values are based on gross revenues for comparison purposes

(3) TTM October 31st, 2007; Full year results will be reported on March 25, 2008

(4) TCS, Infosys, Wipro; Wipro revenues do not include Customer Care & Lighting and Other

Sources: Gartner, Company Reports, CapitalIQ, TBR, EDS Global Market Intelligence

# Neumont University

- Neumont University, founded in 2002, was designed to address the industry need for technically skilled and professionally developed employees. As technology rapidly becomes more sophisticated, well-prepared and qualified individuals become increasingly difficult to find. This problem is worsened by the fact that many computer science graduates lack the skills employers need. Neumont was designed to address that problem -- and meet the industry's needs.
- At most universities a student spends two long years fulfilling general education requirements before they can focus on their specific major. While we recognize that tomorrow's innovators must be well-rounded, we also strive to offer classes that allow students to develop the skills on the employers top five list, things like:
  - Communications Skills
  - Ability to work in a group
  - Proven ability to develop software in a team environment
  - Strong technical proficiencies
- We believe that tomorrow's technology Renaissance men and women must know how to write effectively in a business setting, communicate professionally, and act with a strong ethical code. So we've focused our curriculum on [developing professionals](#) competent in business, communication, and technology.
- From day one students learn through problem and [project-based learning](#) to help them learn to think critically and effectively solve real-world problems. Our students move efficiently through our program and learn by designing, building, testing, and challenging assumptions in a hypothetical, digital, and literal world – while creating some pretty exciting projects. Neumont's [Employer Relations Department](#) works with industry leaders from companies like IBM and Microsoft to ensure we always have a steady stream of exciting, and challenging projects available for our students these partners also help us to identify the gaps between what industry needs and what universities are teaching, then we adjust our curriculum in order to bridge that gap - and provide the most relevant Computer Science education available.
- [http://www.neumont.edu/education/approach/curriculum\\_development.html](http://www.neumont.edu/education/approach/curriculum_development.html)

# Innovative Curriculum Lures Students To Georgia Tech

**A**T A TIME WHEN UNIVERSITY computer science departments are battling steep declines in enrollment, the Georgia Institute of Technology saw its freshman class of computer majors climb 33% this fall.

What's the draw? Georgia Tech tore up its one-size-fits-all computer science curriculum and replaced it with a new approach the school calls "threads." Students still learn programming languages and IT architecture, but now those core subjects are blended into eight specialized threads, or subsets, of computing.

The majority of computer science students have a general idea of what they'd like to pursue in the technology field when they enter Georgia Tech, says Richard DeMillo, dean of Georgia Tech's college of computing, who was CTO at Hewlett-Packard before joining the university in 2002. The college helps guide students into the threads that best suit their career

using internetworking," she says.

In addition to choosing threads, students also select one of four roles: entrepreneur, inventor, communicator, and master practitioner. Students pick elective classes and extracurricular activities, such as work-study programs or internships, based on these roles. A student interested in computing research who'd like to be an inventor could pursue a summer internship working in a professor's lab.

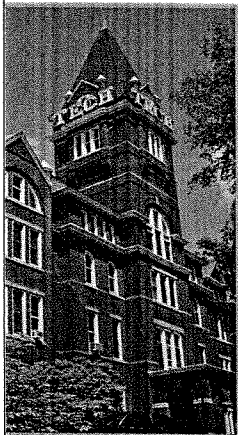
## CAREER-MINDED

Georgia Tech took the real-world workplace into consideration before revamping its curriculum, DeMillo says. Anything that gets more young people interested in technology careers—and a curriculum that can help them hit the ground running after graduation—is surely welcome news for employers worried about a future shortage of tech professionals as baby boomers retire.

"Georgia Tech's program is the most innovative approach to computer science that we've seen," says Stewart Tansley, program manager in external research and programs at Microsoft Research. Microsoft was so impressed with the threads curriculum that it has teamed up with Georgia Tech and the all-women Bryn Mawr College to create a three-year robotics program that the schools will test next year; it includes robotics software and \$1 million in funding from Microsoft.

Universities saw sharp drops in computer science applications after the tech bust, and the numbers haven't recovered even as IT hiring picks up. Other universities have taken more conservative steps to energize their computer science curriculums such as adding newer hot technologies to existing courses or teaching business-critical skills like international project management. The University of Indiana earlier this year aligned with a university in Germany to work on a project involving SAP software. IBM works with schools as part of its Academic Initiative program, giving out free software and supplying IBM professionals to lecture on WebSphere, service-oriented architecture, and other technologies.

Georgia Tech isn't stopping at computer science; it's considering introducing the threads approach into other areas of study. Maybe it should consider building more dorms. —MARIANNE KOLBASUK MCGEE (mmcgee@cmp.com)



**CoolThreads**  
Georgia Tech offers eight degree tracks for computer science

- Embodiment: Computers and the physical world
- Computational modeling
- Computers and media
- Computers and people
- Computers and intelligence
- Computers and foundations
- Computers and platforms
- Information internetworking

goals. So a student pursuing a career related to robotics could combine threads in embodiment and intelligence, while a student interested in computerized animation could combine threads in media and computational modeling. Undergrad students choose two threads, which means there are 28 possible combinations to get a bachelor's degree in computer science.

For freshmen like Nikea Lynn Davis, Georgia Tech's threads were a big selling point. Davis, who wants a career that involves education, children, and computer research, has chosen threads in computers and people as well as internetworking. "I want to study how people use computers, how they find information