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FACT SHEET FOR LEADING GEEKS

“As we enter the 21st century, America leads the world in developing and commercializing new innovations and technologies From information technology to biotechnology to materials science and so many things in between, U.S. scientists and high tech workers are generating new products and trailblazing revolutionary discoveries every day.

If innovation and new technologies profoundly shaped the 20th Century, they may well define the 21st. Our ability to create new technologies and harness their power and promise will directly impact our national prosperity, security and global influence.”

- From the Foreword to U.S. Department of Commerce “Innovation in America: Federal Lab R&D Roundtable.”

Size of the IT Workforce

- 9.9 million Information Technology (IT) workers were employed in the US as of May, 2002, according to a recent study performed by the Information Technology Association of America (ITAA) called “Bouncing Back: Jobs, Skills and the Continuing Demand for IT Workers.”
- 92% of IT workers work for non-IT companies.
- 10.4 million IT workers were in employed in the US in 2001. The recent industry downturn has resulted in a 5% decrease in the IT workforce.
- Despite the downturn in employment, demand for new IT employees is expected to grow by 27% between May 2002 and May 2003. The ITAA projects that US companies will seek to employ 1.15 million new IT workers during this period, but will only be able to fill 50% of the open positions with appropriate candidates.
- IT companies lost the most employees, shrinking their workforces by almost 15%.
- Non-IT companies reduced their IT staffs by only 4%

Problems Delivering IT Projects

- Failure is a normal part of innovation. Teams that attempt to develop new technologies often fail to meet their objectives.
- In 1998, 26% of software application development projects were completely successful, according to the CHAOS study performed by The Standish Group. A successful project was defined as one that was completed on time, on budget, with all features and functions as originally specified.
- 28% of software application development projects were canceled before completion, yielding few if any benefits to their companies.
- 46% of software application development projects were deemed challenged, completed but late, over-budget, or with fewer features than initially specified.
- Smaller projects are much more likely to succeed than large projects. The study showed that the larger the project budget, the smaller the success rate:

Project Budget	Success Rate
Less than \$750K	55%
\$750K - \$1.5M	33%
\$1.5M - \$3M	25%
\$3M - \$6M	15%
\$6M - \$10M	8%
Over \$10M	0%

History of Digital Computers

- ENIAC, the first digital computer, designed by J. Presper Eckert and John Mauchly, was unveiled to the public February 14, 1946 at the University of Pennsylvania.
- On December 23, 1947, Bell Labs management was informed that the first transistor had been developed by John Bardeen, Walter Brattain and William Shockley.
- American public consciousness of the existence and potential of IT was significantly raised when CBS became the first television network to use a UNIVAC I computer to forecast the outcome of the 1952 presidential election based on incomplete results.
- Bell Labs developed the first telephone modem in 1958 enabling remote data communications.
- Digital Equipment Corporation introduced the first commercial computer with a monitor and keyboard in 1960, the PDP-1.

- Stanford and Purdue Universities established the first departments of computer science in 1962.
- Video games were born in 1962 when Steve Russell, an MIT graduate student programmed Spacewar! on a PDP-1.
- Sabre, the first airline reservation system was completed by IBM in 1964 after seven years of development work.
- Doug Engelbart invented the mouse in 1964.
- Jack Kilby, Jerry Merryman and James Van Tassel invented the handheld calculator in 1967. It was capable of addition, subtraction, multiplication and division.
- Four computers were connected between UCLA, UC Santa Barbara, SRI and the University of Utah in 1969 starting what would become the Internet.
- Floppy disks were first introduced in 1970.
- Ray Tomlinson sent the first network email message in 1971.
- After witnessing the success of his video game Pong, Nolan Bushnell founded Atari in 1972. By 1975, he had made a deal with Sears to sell a home version of the game for use on television sets.
- Three companies, Wang, VYDEC and Lexitron introduced word processing systems in 1972.
- The first personal computers were marketed as kits for geeks. In March 1974, the SCALBI kit was offered for sale by the Scelbi Computer Consulting Company of Milford, CT in an advertisement in QST magazine.
- Frederick Brooks, Jr. published one of the first books on software development project management in 1975, "The Mythical Man-Month."
- In 1976, Steve Jobs and Steve Wozniak founded Apple Computer and designed and built the Apple I, their first product. In 1977, they introduced the Apple II, the mass market personal computer.
- In 1977, Bill Gates and Paul Allen founded Microsoft in Albuquerque, NM.
- The first electronic spreadsheet software, VisiCalc, was introduced May 11, 1979 by Dan Bricklin and Bob Franston.

- In 1980, IBM selected PC-DOS from Microsoft as the operating system for the open architecture personal computer that they would introduce the following year.
- In 1984, Apple Computer introduced the Macintosh beginning the popularization of the graphical user interface.
- In 1985, Microsoft introduced Windows 1.0 to offer Macintosh-like features on the IBM PC compatible platform. The program did not become popular until 1990 with the introduction of Windows 3.0.
- Tim Berners-Lee wrote the first prototypes for the World Wide Web in 1990, using URLs, HTML, and HTTP.
- The Apple Newton personal digital assistant was introduced in 1993.
- NCSA Mosaic, the first graphical web browser was developed in 1993 by students and staff at the University of Illinois' National Center for Supercomputing Applications.
- Jim Clark and Mark Andreessen founded Netscape Communications in 1994.

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