

alphabetstreet

A-Z

OF

eHEROES

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A

▶ **Allen, Paul**

Co-founder of Microsoft, Paul Allen attended Lakeside School, a school for gifted children in Seattle with fellow computer enthusiast, Bill Gates. After Lakeside, Allen went on to work as a programmer at Honeywell in Boston. It was during his time at Honeywell that he noticed an ad for a microcomputer kit in an issue of *Popular Electronics*. He contacted Bill Gates and persuaded him to join forces to develop software for the microcomputer – Microsoft was born. As ever more powerful processors emerged, PC manufacturers looked to Microsoft to supply with them software applications that turned the computer from an enthusiasts' hobby to a commercial tool.

At Microsoft Allen was head of research and worked on products like MS-DOS, Windows and the Microsoft Mouse.

In 1983 a serious illness caused Allen take stock of his life and he left Microsoft to follow other interests. Today, Allen's activities are both commercial – he invests in a wide variety of independent companies, many technology based – as well as philanthropic. He is also a keen musician. Allen remains Microsoft's second largest stockholder and retains a position on the board of directors.

Links: www.paulallen.com

▶ **Andreessen, Marc**

In 1993 Marc Andreessen, an undergraduate student at the University of Illinois in Urbana–Champaign, was working on a project for the National Center for Supercomputing Applications (NCSA). Andreessen led a team of specialists working on a graphical browser interface named Mosaic.

The beta version of Mosaic was released in February 1993 with Version 1.0 following in September. In the same way that Windows with its graphical user interface opened up the use of PCs to the layman, Mosaic was to change the face of the World Wide Web forever. With built in support for Windows and Macintosh systems non-techies could finally access the web and navigate by pointing and clicking.

Andreessen left the NCSA in 1994. Teaming up with Jim Clark he formed a

new company, the Netscape Communication Corporation. At Netscape, based in Silicon Valley, Andreessen and his colleagues developed the Netscape Navigator browser, redefining the business model in the software industry by giving Navigator away as a loss leader.

After a bitter battle with Microsoft and Microsoft's browser Internet Explorer, Netscape were eventually bought up by America Online Inc. for \$4.2 billion. Andreessen spent six months as CTO at AOL before finally leaving to set up a new venture Loudcloud with fellow Netscapee Ben Horowitz.

Loudcloud helps start-ups by building their back-end computer systems from scratch. The allows the company to concentrate on its business, letting Loudcloud and its team of experts worry about the technology. It is early days yet, and it is a competitive market with both start-ups and major players like AT&T moving in. But no one is betting against the innovative Andreessen pulling off another success.

Links: www.loudcloud.com

B

► Berners-Lee, Tim

Tim Berners-Lee is widely credited as the man who developed the World Wide Web. After graduation from Queen's College, Oxford University in 1976, Berners-Lee had brief stints at Plessey Communications and DG Nash Ltd in the UK. Eventually, however, he set up as an independent consultant.

It was during a six-month period at the Conseil Européenne pour la Recherche Nucléaire (CERN) that he wrote a never-published program, Enquire, for storing information using random associations. It was this program that was to form the conceptual foundations for development of the World Wide Web.

In 1984 Berners-Lee took up a full-time research position at the CERN laboratories in Geneva, Switzerland. And in 1989 he wrote a proposal entitled *Hypertext and CERN*, and circulated this among his colleagues for comment. His proposals, partly inspired by the work of Ted Nelson on the Xanadu

project, incorporated three new technologies: HTML (Hyper Text Markup Language), the language used to write web documents; HTTP (Hyper Text Transfer Protocol), the protocol to deliver the page; and a web browser client “WorldWideWeb”, which allowed the web page to be viewed and edited.

By May 1991, an information-sharing system including these three key features was operational on the multi-platform network run at the CERN laboratories. In August of the same year the files were made available to the external world served up by the main file storage computer at CERN – the first web-server.

Instead of going on to make millions out of the commercial potential of his invention, Berners-Lee joined the Laboratory for Computer Science (LCS) at the Massachusetts Institute of Technology (MIT) in 1994. He didn’t abandon development of the World Wide Web, however, becoming Director of the World Wide Web consortium that oversees and coordinates the global development of the Web.

Links: www.w3c.org

► **Bezos, Jeff**

Jeff Bezos is the founder of Amazon.com. Venerated as the John Doe of ecommerce, Bezos has become the dot-com icon. If Bill Gates is the archetypal nerd, Bezos is the ordinary guy who proves that ecommerce is the business goldmine.

Back in 1994, Bezos, a Princeton graduate in computer science and electrical engineering, was a young senior vice-president at a thriving Wall Street hedge fund. That’s when the explosive growth of the World Wide Web grabbed his attention. Surfing the Net one day, he came upon a fascinating statistic – web usage was growing at a rate of 2300% a month. (This may or may not have been true. Bezos certainly acted as if he believed it.) Online commerce, he realized, was a natural next step.

Bezos quit his job and packed his bags. Then folklore kicks in. Bezos’ wife, the improbably named MacKenzie, drove them cross country in a Chevy Blazer, while Bezos sat in the passenger seat pounding out a business plan on a laptop computer and negotiating seed capital on his mobile phone. “I will change the economics of the book industry as a whole”, he is reputed to have told one venture capitalist with quotable bravura.

The Amazon.com site was launched in early 1995. Through a combination of first-mover advantage, good logistics and well-orchestrated publicity, Amazon has grown spectacularly. Amazon now sells an ever-expanding range of products, and has also launched its own auction site. For now, Bezos is the crown prince of the Internet. He will ascend to the throne the day Amazon announces its first profits. The big question is whether Bezos can convert massive revenues into sufficient profits to satisfy investors and justify the valuation of Amazon. That remains to be seen.

▶ **Bhatia, Sabeer**

Sabeer Bhatia changed the face of email by co-founding the first web-based email company, Hotmail Corporation, in 1996. The company instantly became the market leader with Bhatia at its helm as CEO and president. In 1998 Hotmail were bought by Microsoft, making Bhatia some \$200 million dollars richer. Today, Hotmail is still the largest Internet web-based email service provider with over 50 million registered users.

Bhatia, meanwhile, has gone on to become one of a growing band of second-generation serial Internet entrepreneurs, along with the likes of Jim Clark and Marc Andreessen. Bhatia's latest venture is Arzoo.com (an Indian word meaning passion or heart's desire). Arzoo is an ecommerce company using new technologies to improve upon the experiences currently available to online shoppers.

Bhatia's achievements have been widely recognized. *Upside* magazine, for example, named Bhatia as one of its "Elite 100", trendsetters who have had made the greatest impact on the Internet industry.

Links: www.arzoo.com

▶ **Behlendorf, Brian**

Brian Behlendorf was one of the driving forces behind the open source movement. The Apache Software Foundation that developed the code for the Apache Web server was co-founded by Behlendorf. Sixty percent of all Internet sites run on Apache servers.

While Behlendorf was perfecting Apache code for fun he was earning his money as chief engineer at HotWired; he also co-founded the web design firm Organic. In early 1999 he joined O'Reilly & Associates as CTO of new

ventures. In turn O'Reilly spun off Collab.Net with Behlendorf as founder and president.

Collab.Net is an example of how the open source model is maturing. Its first service is sourceXchange a kind of online match-making service for companies and coders. The companies post up details of the job they need doing and the price they are willing to pay for a piece of software that will do it. The registered developers decide what project they want to work on. The new twist is that they get paid for participating in an open-source project.

C

► Cerf, Vint

Known as the father of the Internet, Vinton Cerf, working with Robert E. Kahn, co-designed the TCP/IP Internet protocol as well as the backbone of the Internet architecture.

During his Masters and Ph.D. in computer science at UCLA, Cerf, as principal programmer, managed a number of projects. They included the development of the host protocol specifications for ARPANET – a precursor to today's Internet.

Cerf then moved on to Stanford University as assistant professor of electrical engineering and computer science where he conducted more ARPANET-related research into packet technology (the efficient movement of information around the Internet).

By October 1976 Cerf was installed at the US Defense Advanced Research Projects Agency (ARPA). That's where the TCP/IP protocols were developed to a point where the ARPANET could use them.

Out of the foundations of the ARPANET grew the Internet as we know it today.

Vint Cerf is currently senior VP of Internet Architecture and Technology at MCI World Com. He also has a place on the board of ICANN, the Internet Policy Institute and a host of other bodies. The list of awards and honors received by Cerf covers a side of A4. He is also a fixture on the speaking circuit and has given testimony before the US Congress. His place in history

was assured with an appearance as the President's chief of staff in the TV series *Earth: Final Conflict*.

Links: www.wcom.com

▶ **Clark, Jim**

The ultimate New Economy man, Jim Clark founded among other things Silicon Graphics, Netscape and Healthcon, the first Internet healthcare information provider. A former Stanford University professor, Clark also had a hand in the creation of Sun Microsystems and many other Silicon Valley companies.

Backing one of Jim Clark's companies is a bit like backing all the horses in a race – it's the nearest thing to a certainty in the risky world of dot-com start ups. On hearing of Clark's involvement, investors form an orderly queue to hand over their money.

And just to show he still has an appetite for the business he has started up myCFO – a financial service for the money-rich but time-poor. Part of Clark's success can be attributed to an uncanny ability to foresee how technology will affect the future. Clark also benefited from a spell at Xerox Parc and a six-year stint at Stanford University as Associate Professor of Electrical Engineering. The DARPA project of the late seventies produced the business-oriented research teams from which Sun Microsystems, Silicon Graphics and MIPS Computer Systems all grew.

Predicting that the improvement in circuitry and chip speed would eventually allow real time 3D modeling on computers, Clark founded Silicon Graphics. The company went on to develop the Silicon Graphic workstations that are industry standard in top-end 3D computer graphics and special effects.

Not content with the one success, Clark teamed up with a fresh-faced young programmer, Marc Andreessen. Clark's vision was one where audio, video and other digital media would migrate to the public world Internet. All that was needed to make the Internet a commercial success was a window through which it could be explored. The company he formed with Andreessen was called Netscape.

Links: www.webmd.com

D

▶ **Dell, Michael**

Michael Dell made history when he became the youngest CEO ever to run a Fortune 500 company. Today he heads Dell Computer Corporation, the company he founded and one of the most profitable and innovative businesses in the world. Along the way, he has joined the ranks of the most revered entrepreneurs in America – as the man who took the direct-sales model and elevated it to an art form. (In 1999, Dell Computer came fourth in Fortune’s ranking of America’s Most Admired Companies, behind GE, Coca-Cola and Microsoft.)

The company Dell built is not the biggest in the world. Nor are its products the most innovative. Dell Corporation is that rarity: a corporate model, the benchmark for how companies can be organized and managed to reap the full potential of technology. Michael Dell is the Alfred P. Sloan of the high-tech age. But, while it took Sloan decades to meld General Motors into his organizational image, Michael Dell is still a young man – a mere 34.

Dell started young. By the age of 13, he had become a dab hand at taking apart the motherboard of his Apple II computer.

While at the University of Texas, he rebuilt PCs and sold them. His business was kick-started with a \$1,000 investment. Dell is living proof that having too little capital is better than too much. It forced him to reinvent the computer industry.

▶ **Drudge, Matt**

Matt Drudge shot to fame when his Internet newsletter, the *Drudge Report*, broke the Monica Lewinsky story. He continues to be a thorn in the side of the US political and journalistic establishment. Before starting the online news sheet, Drudge worked as a clerk in a CBS gift shop in Los Angeles. Drudge had a great idea: why not gather all the gossip on the net and post it up in one place. He started the *Drudge Report* – and before he knew it Drudge was the cutting edge of renegade Internet journalism.

Drudge, from his position outside the establishment press, has scored several

notable scoops. Not least CBS's firing of Connie Chung, and Steven Spielberg talking to the Whitewater investigators looking into the Clintons' property deal. But his biggest coup came when he scooped the Monica Lewinsky presidential scandal story. *Newsweek* had the story but decided not to run it. Drudge reported both the story, and *Newsweek's* decision not to run it. The story spread on the Internet and was eventually picked up by the *Washington Post* and the *Los Angeles Times*.

Drudge doesn't always get it right though. He has claimed in the past that his stories are 80% accurate. It's the other 20% that's likely to get him into hot water. People still flock to the Drudge site, which has spawned a number of imitators.

Links: www.drudgereport.com

▶ **Dyson, Esther**

When e-guru Esther Dyson speaks, people listen. A Harvard economics graduate and daughter of an English physicist and a Swiss mathematician, Dyson chairs EDventure Holdings. She founded the company after earlier positions as a fact-checker at *Forbes* magazine and as a securities analyst at New Court Securities and then Oppenheimer.

EDventure is a small but diversified company focusing on emerging technologies, emerging markets and emerging companies. EDventure publishes *Release 1.0* a highly regarded computer industry newsletter. Dyson also wrote the popular book *Release 2.0: A Design for Living in the Digital Age*.

A multi-tasking and multi-talented woman, as well her position at EDventure Dyson chairs the Internet domain name authority ICANN, is a member of the board at the WPP Group as well as several other institutions. Her opinions are much sought after. She has advised, among others, Bill Clinton and Bill Gates, as well as governments from around the world. Small wonder that *Fortune* magazine named her as one of the 50 most powerful women in US business.

Links: www.edventure.com

E

▶ **Ellison, Larry**

Larry Ellison, the founder and CEO of Oracle Corporation, likes to live life to the full. A pilot who flies his own fighter jet, Ellison is also a world-class yachtsman who was first across the line in one of the toughest ever Sydney–Hobart races in 1999. He is also a man who appreciates the finer things in life; he hired craftsmen in Japan to build him a house by hand and had it shipped to the US and assembled on his estate in Woodside, California.

Ellison is the driving force and visionary behind one of the biggest software successes in the world – Oracle. Oracle is famous for its database software used to store the wide variety of information companies need for their day-to-day operations: customer lists, employee lists, transaction details, product inventory – the list is endless.

In recent years, however, Ellison has been steering Oracle away from the client–server model, a relationship where client computers and servers storing databases use “enterprise applications” software to communicate and manage database information. In a bold move Ellison has shifted from client–server products to applications that can run over the Internet via a browser.

Ellison’s embracing of the Internet and ecommerce was a strategic masterstroke, coming at a time when one of Oracle’s main competitors, Microsoft, was struggling to cover every commercial opportunity the Internet offered.

In 1999 Oracle launched the world’s first Internet database Oracle8I, a product that once again put Oracle ahead of the game.

Links: www.oracle.com

F

▶ **Fox, Martha Lane**

When lastminute.com listed on the UK stock exchange, early in 2000, it did so in a blaze of media attention. One of the first listings in the UK that members of the public could sign up for, Lastminute triggered a share-buying

frenzy. Much of the press coverage was down to the company's photogenic co-founder Martha Lane Fox.

Fox, or "Fast Lane Foxy" as she was apparently known at school, is the daughter of an Oxford don. After university she went to work at Spectrum Management consultancy where she met her collaborator and co-founder of Lastminute, Brent Hoberman. Fox gained an insight into the possibilities that the Internet offered when she carried out a study for the DTI on the use of the Internet and new technology.

After Spectrum, Fox moved to the media company Carlton Communications, before leaving, to start up lastminute.com with Hoberman. Initially reluctant to throw in her lot with Hoberman, he eventually persuaded her that the Lastminute concept was a great idea. At first, she admits, she thought the idea a terrible one. The company specializes in offering goods and services – including flights, holidays, restaurant bookings and hotel rooms – at late notice through its website.

The float of the company on the London Stock Exchange was a great success for Fox and Hoberman, making them paper millionaires. Both attracted some adverse press comment at the time, however, as public investors were allocated less than 50 shares each and the offer price range was upped – right at the last minute. Lastminute's share price has been languishing of late, and it may yet prove a high-water mark in the dot-com speculative bubble.

Links: www.lastminute.com

G

► **Gates, Bill**

Hero or villain, Bill Gates elicits strong reactions. Like so many of the computer industry's multi-millionaires (or billionaires) Gates started young. Programming computers with Microsoft co-founder Paul Allen at Lakeside School, at the age of 13, Gates followed up by developing the programming language BASIC while at Harvard.

Recognizing that computers had phenomenal potential in the business world, Gates dropped out of Harvard in 1975 to set up Microsoft with Allen. Early in Microsoft's history Gates made a decision that marked him out as master

tactician. Instead of deciding to supply a computer and operating system, or tie Microsoft to a single computer manufacturer, Gates agreed to license Microsoft's software products, including its operating system MS-DOS. The decision paved the way for Microsoft's dominance of computer software industry – for the rest of the century.

Gates struck a deal with IBM to supply MS-DOS as the operating system for the IBM-badged PC. Under the agreement Microsoft retained the rights to sell the operating system to third-party vendors. IBM mistakenly thought that the IBM brand, designated by the IBM logo on the PCs, was what mattered, not the software that ran on the IBM PC. Gates knew better. Every time someone switched on their PC they would see the Microsoft operating system (OS). And people identified with the software that performed useful tasks rather than the beige box on the desk.

Gates' vision and shrewd business savvy and aggressive competitive streak have kept Microsoft at the top of the pile ever since. Through a combination of innovation and acquisition Gates has always been one move ahead. Recently, as a result of an anti-trust investigation, a decision was taken to split Microsoft into two separate competing companies. Gates intends to appeal.

He may not always be the world's richest man. Nor will he ever be accorded the folk hero status of some of his contemporaries. But Gates should always be remembered as the man who helped make the computer a useful and ubiquitous tool rather than just an interesting possibility.

Links: www.microsoft.com

► Gilder, George

George Gilder's career has plotted an interesting course ever since he left Harvard University. He has written speeches for Nelson Rockefeller and Richard Nixon; pioneered supply side economics as chairman of the Lehrman Institute's economic roundtable and program director for the Manhattan Institute; been President Reagan's most frequently quoted living author; and written influential books on the causes of property, wealth and entrepreneurialism.

Arguably, however, Gilder is most famous for his prescient and detailed examination of the semiconductor industry in the best selling book *Microcosm* (1989), and his contributions to *Forbes ASAP*, which he also founded. *Microcosm* is notable for its coverage of Intel and Andy Grove.

Gilder could never be accused of sitting on the fence. Over the years he has taken a strong line on the potential of many emerging technologies. Those that he has been less than keen on include HDTV interactive television and 3DO game machines. And the ones he liked? The Java programming language and optical networks. Not bad going in an industry that's notoriously difficult to predict from one month to the next, let alone years ahead.

Gilder's next book *Telecosm*, due sometime in 2000, will focus on the future of telecommunications. But if you can't wait that long to find out what the future of telecomms holds, then sign up for *the Gilder Technology Report* at his website, gildertech.com.

Links: www.gildertech.com

▶ Godin, Seth

Seth Godin is a respected ecommerce pioneer, specializing in online marketing. He is best known for introducing the idea of permission marketing.

After graduating from Tufts University in 1982, Godin went to work as brand manager for Spinnaker Software. Next stop was an MBA at Stanford Business School, from where he graduated in 1984.

Godin has written a number of best selling online business books including: *E-Marketing*, *The Guerilla Marketing Handbook*, *The Information Please Almanac* and *Permission Marketing: Turning Strangers into Friends and Friends into Customers*.

At Yoyodyne entertainment, the company Godin founded and named after the character in Thomas Pynchon's novel *The Crying of Lot 49*, he set about changing the world of online marketing.

His idea was to persuade people to accept product pitches from companies by offering them an incentive. A permission marketing campaign might, for example, involve an airline offering free flights or a chance to win a trip of a lifetime in return for which the customer would grant permission to the airline to email offers of other products it thought the customer might be interested in. This model has become one of the most popular ways of marketing online.

Godin sold Yoyodyne and now works at Yahoo as VP of direct marketing.

▶ **Gosling, James**

James Gosling made his name with Java. In December 1990 Sun Microsystems set up an in-house research project to look at the future of computing. The original members of the team were Patrick Naughton, Mike Sheridan and Jim Gosling. The project was named the Green project. All the members of the team came from product groups within Sun. This was a key factor in the success of the project. The group determined to produce a number of working prototypes and a business plan.

In 1991, the Green project moved offsite to premises in Sand Hill Road, Silicon Valley and recruited additional members. The group worked prolifically, producing a raft of different prototype multimedia products as well as a dynamic programming language to help communicate between the prototypes. The programming language was named Oak – it was subsequently renamed Java.

It wasn't until 1993, however, when Marc Andreessen developed the Mosaic browser for the World Wide Web, that Java really took off. By 1994 the first prototype was up and running, and in 1995 Java was released to the world after the *San Jose Mercury News* leaked its location on the net.

Java has now become one of the most important programming languages in computing – particularly in ecommerce, networks and web development.

Links: www.java.sun.com

▶ **Grove, Andy**

Andy Grove oversaw the growth of Intel Corp from a fledgling producer of memory chips to a giant of the microprocessor industry.

Although not technically a co-founder, Grove was at Intel from the very first days. Grove was the man who got things done: he organized the office space and manufacturing capacity; and later played a principal part in negotiations with IBM that saw Intel beat out competition from Motorola to supply the microprocessors for IBM's PCs. In 1985, Grove made the tough strategic decision to refocus the company's efforts on microprocessors rather than memory chips. It was a decision that meant laying off thousands of employees but, as time has borne out, the right decision.

In 1987 Grove became CEO of Intel. The tough decisions didn't stop. Grove dealt swiftly with a potential crisis when the company's flagship Pentium

processor proved to have a slight flaw. He offered to replace the processors at a potential cost of millions but in doing so preserved Intel's strong brand. And all the time the profits went up and up.

During Grove's tenure as CEO the stock price went up a whopping 24-fold, making shareholders eternally grateful. Craig Barrett replaced Grove as CEO in a planned succession with Grove remaining at Intel but with more time to devote to Intel's Internet strategy. Grove is a respected public speaker and continues to pass on his views and advice about how technology is shaping the future and what companies must do to survive. Given Grove's track record, audiences should pay attention.

Links: www.andygrove.com

J

► Jobs, Steve

A “corporate Huckleberry Finn”, is how one newspaper described Steve Jobs, co-founder of Apple Computer. Jobs' business ideas and exploits have made him a folk hero in a large section of the computing community.

Jobs, and Apple co-founder Steve Wozniak, started their business in a garage. The Apple I and II computers paved the way for the Apple Macintosh, a personal computer that revolutionized the industry. At last people had a computer they could use intuitively – one with a graphical user interface, that was immediate and easy to understand.

Unfortunately for Jobs, Apple wasn't the only player in the market. The best strategy, Apple decided, was to keep the Mac operating system software tied to the Apple hardware. That way they could ensure quality. Microsoft, another growing company, led by Bill Gates and Paul Allen, had a different plan. They licensed the Microsoft operating system to other PC manufacturers. The Microsoft business model was the more compelling and the rest, as they say, is history. Over time, the Microsoft platform was used by 80% of the market. Apple, though widely admired as the better technology, continued to dominate in creative industries such as design, but went into a long decline. Apple and Jobs struggled on together until, in 1985 Jobs was booted out of the company he founded.

Jobs wasn't out of a job for long though. In 1986 he co-founded the Academy Award winning computer animation studios Pixar – he is still CEO. Then, in a dramatic turnabout, Jobs returned to Apple in 1997 at the behest of then CEO Gil Amelio, at a time when Apple's market share was languishing below the 5% mark.

Since then Jobs has revitalized Apple. Demonstrating that he still knows great design when he sees it Jobs presided over the introduction of the sleek and stylish – words not normally associated with computers – iMac product line. The Mac is back and with Jobs at the helm there is bound to be more excitement to come.

Links: www.apple.com; www.pixar.com

K

► Knowles, Harry

Harry Knowles is a cyber guerilla on a one-man mission to give Hollywood's slick PR machine a run for its money. Since April 1996 he has been the star of his own show, the movie news website, *aint-it-cool* news.

What started as hobby for Knowles has grown into one of the net's hottest entertainment news destinations. Austin, Texas – Knowles' home town - may not be in the heart of movie land, but Knowles has an army of sources, over 700 he has said, in the movie industry. Many of these work on film sets. Knowles protects these sources fiercely, knowing that many are low-ranking movie-production people. If the studios caught them leaking material they would be thrown off the lot.

When a regular source provides information Knowles refers to them as “St Francis Desales”, patron saint of journalists. If the source's info comes from an actor, then it's “St Genusius”, patron saint of actors.

The website has a good track record of breaking stories. Knowles has posted inside information on the *Star Wars* prequel scripts, advanced news of the *Blair Witch Project* and more recently news from the set of the *Lord of the Rings*. It was a sign of the power Knowles now wields in the industry when Peter Jackson, director of the *Lord of the Rings* trilogy, emailed Knowles offering to answer questions about the forthcoming movie. Over 36 hours 14,000

questions poured in from Middle-Earth fans with Jackson answering 20 of the best.

Links: www.aint-it-cool-news.com

M

► **McNealy, Scott**

Scott McNealy is CEO and co-founder of Sun Microsystems, the networking giant that introduced the cross-platform Java technology. The company is one of Silicon Valley's legendary success stories, growing from a company with four employees in 1982 to a company with annual revenues of over \$14 billion today.

Graduating from Harvard with a BA in economics, McNealy followed up with an MBA at Stanford. At Stanford he got the idea for the Stanford University Network – or Sun as it came to be known.

As Sun has grown in stature, so McNealy has been able to bring his vision to a wider audience. He is a renowned speaker, rated by *Forbes ASAP* as one of the top 10 speakers in the technology industry, while *60 minutes* dubbed him “one of the most influential businessmen in America”. McNealy's enthusiasm for selling Sun systems extends to some high-profile networking. Famously, he challenged Jack Welch, General Electric's celebrated CEO, to a round of golf. McNealy lost, but so impressed Welch that he received a place on the GE board.

Known to be a strong advocate of competition, believing it to be an essential precondition of innovation. “Without choice, there is no competition”, Says McNealy. “Without competition, there is no innovation. And without innovation, you are left with very little.”

With McNealy holding the reins, Sun has blazed a trail of innovation through the technology industry.

Links: www.sun.com

► Moore, Gordon

In 1965, while working at Fairchild Semiconductor as R&D director, Gordon Moore made a prediction in an obscure magazine. Computer processing power would, he claimed, double every 18 months over the following 10 years. The idea took root in the consciousness of Silicon Valley and became Moore's Law.

The uncannily prescient Moore moved on to co-found the microprocessor giant Intel. Over the next 30 or so years the industry watched as Moore's words became axiomatic. Moore now serves as Intel's board chair emeritus. The validity of his law, however, is under threat. Moore acknowledges this. In a interview with *Wired* he admitted that as processing power slows down within the next 15 years, the 18-month period is likely to be stretched.

But with the continual commercial pressures to produce faster and faster chip speeds, the next technological breakthrough, be it quantum computing or organic semiconductors, may yet come to the rescue of Moore's Law.

Links: www.intel.com

P

► Postel, Jon

When Jon Postel died in October 1998, after complications arising from heart surgery, tributes flooded in from the Internet community all around the world. The *Economist* said, "If the Net does have a God, he is probably Jon Postel."

Postel received a BS and MS in engineering from UCLA and followed this with a Ph.D. in computer sciences at the same institution. At UCLA, Postel was involved in the precursor to the Internet – ARPANET. He had a broad range of Internet-related interests including multimedia conferencing, email and computer communication protocols.

But Postel was probably best known for his work at IANA, (Internet Assigned Numbers Authority) where he was director. IANA was responsible for coordinating, allocating and registering Internet addresses. Behind every name like www.banks.com, for example, is a DNS number. IANA allowed

the two to be matched up, making the Internet a much more commerce-friendly environment.

At one point Postel, demonstrating his influence over the Internet community, temporarily transferred control of the issue of the dot-com domain names away from Network Solutions, a commercial company, who at that time had a monopoly over issuing names. This illustrated one of Postel's strongly held views: that decisions about the Internet should be made for the long-term benefit of the Internet community and not for short-term commercial reasons.

Professor David Farber, Postel's thesis adviser and longtime friend, said of him: "He really was the most powerful person on the Net. He came by that power legitimately, as the only person who could command the respect and the loyalty of the whole community."

Links: www.postel.org

R

► Rheingold, Howard

Pioneer, critic, commentator on the digital world, futurist, public speaker – Howard Rheingold is a member of the board of directors of the highly regarded online community WELL, Rheingold was the founding Executive Editor of *HotWired*, the pioneering online magazine launched on the World Wide Web in 1994 by *Wired* magazine.

Rheingold has written a number of books outlining his ideas about how technology is shaping the future. These include *Virtual Reality* (1991) and the *Virtual Community* (new edn MIT Press 2000). Highly regarded on the public speaking circuit, Rheingold has spoken about the impact of technological change on society to audiences at, among others, the Science Museum of London, and the Smithsonian Institute as well as at Apple, Intel and many other top corporations.

Links: www.rheingold.com

S

► **Son, Masayoshi**

Masayoshi Son is Japan's Internet emperor. While others stood on the sidelines arguing for caution Son, founder president and CEO of Softbank Corp., pursued an aggressive investment strategy building stakes in companies like Yahoo!, buy.com, E*Trade, E-Loan and Webvan.

Aged sixteen, the adventurous Son moved from Japan to California. At the University of California, Berkeley, he racked up his first million importing computer games from Japan. Graduating with a BA in economics, Son embarked on multifaceted career. He helped develop computer games, invented and patented a multilingual pocket calculator and founded a computer company, Unison, now part of Kyocera.

In 1981 Son founded Softbank Corp., a company that by 1999 had become a holding company with investments in some of the most exciting Internet start-ups. Now Son is back in Japan amassing a huge Internet empire. Instead of the minority stakeholding Softbank once sought, it has built majority holdings in companies like Yahoo Japan. Through this portal surfers can find websites such as E-Shopping Toys Japan and CarPoint Japan – both Softbank companies.

US News and World Report described Son as “Japan's most renowned digital-age entrepreneur”. He also serves as a leading member of the Japanese government's Competitiveness Council.

Links: www.softbank.com

► **Stallman, Richard**

Richard Stallman is founder of the Free Software Foundation (FSF), the GNU Project and pioneer of the open source movement that exploded with the development of Linux by Linus Torvalds.

The FSF is dedicated to eliminating restrictions on copying, redistributing, understanding and modifying computer programs. The foundation does this by promoting the development of all free software, but in particular the GNU operating system.

Stallman, who joined the MIT Artificial Intelligence Lab in 1971, launched the GNU project (an acronym for GNU's Not Unix) in 1984, a project to develop a free operating system. Today variants of the GNU system, based on the Linux kernel developed by Torvalds, are widespread.

For his work Stallman has received many plaudits. In 1996 he was awarded an honorary doctorate from the Royal Institute of Technology in Sweden and in 1998 received the Electronic Frontier Foundation's Pioneer award in 1998 together with Linus Torvalds.

Links: www.stallman.org

T

► **Torvalds, Linus**

If you asked a cyber geek to name a piece of open-source software, the chances are it would be Linux. Linux is the open-source operating system that has prompted an outbreak of Linuxmania in the computing world where it is touted as a potential competitor to the Microsoft's all-conquering Windows operating system.

Linux was developed by Linus Torvalds. Torvalds started programming computers at an early age. Aged 10, he was writing computer games for a Commodore VIC-20 that his grandfather bought him.

At the Helsinki University Torvalds moved on from computer games. He didn't like his PC's preinstalled operating system (Microsoft's DOS), preferring the University's UNIX system. The problem was that there was no UNIX version for PC's so he wrote one – Linux. And then, most remarkably, instead of making millions of dollars from his new program, he gave away the source code. This instantly made him a hero of the open-source movement.

Today Linux, along with Solaris, is one of the most popular versions of Unix. Torvalds, meanwhile, has moved from his native Finland to Silicon Valley. He still has an input into the development of Linux but is also involved in an exciting new project at Transmeta the microchip designer – job he gets paid to do.

Links: www.transmeta.com

Y

► **Yang, Jerry and Filo, David**

David Filo and Jerry Yang are the founders of Yahoo!. They rejoice in the job title of chief Yahoos. The two met at Stanford University while studying electrical engineering – they were in the same research group. They discovered a shared interest in the Internet. When they built a Mosaic hotlist of all the things that interested them on the net, the list quickly grew to unmanageable proportions. So they developed some tools of their own that allowed them to hierarchically categorize information.

Once they had produced their own version of the hotlist they made it available to the Internet community over the web and included a search facility to allow people to find specific entries. Yet Another Hierarchical Official Oracle was born – or Yahoo! for short (although Filo and Yang say that they chose the name because they considered themselves yahoos).

Filo and Yang took a sabbatical from Stanford to work on Yahoo! and other ideas that they had. When they left it was initially for six months. They still haven't returned. The project they started for fun in their spare time has turned in to business bringing revenues of over \$2 billion a quarter. It is a project that has made both of them multi-millionaires.

Links: www.yahoo.com

► **Zarb, Frank G.**

Since 1997, Frank Zarb has been Chairman and CEO of the National Association of Securities Dealers (NASD), whose stock index, the NASDAQ, has become the symbol of the digital revolution.

Arriving from Alexander & Alexander Services Inc., the global risk management consultants where he was chairman, CEO and president, Zarb has presided over the astonishing growth of the NASDAQ in recent years.

Because of its strong technology bias, the rise and fall of the NASDAQ is taken as a barometer of the health of the New Economy. When the NASDAQ sneezes the rest of the world's stock markets catch cold. From March to May 2000 the NASDAQ index fell from its highest ever mark of 5,000 points to 3,500. Investors around the world held their breath and waited for the

Internet stock bubble to burst. Fortunately the fall out wasn't as bad as expected. But experts say it's only a matter of time.