

# At the top

In the highly competitive, multibillion-dollar electronic gaming industry, one contender stands out above the rest. Electronic Arts uses the latest Dell server technology to outshine the competition by creating, producing, and delivering some of the world's most popular games



# of their game

By Tara Swords

**On** any given Sunday, you can find 11-year-old Jake of Buffalo, New York, spending hours playing football, his favorite sport. He hits hard and forces turnovers. He runs the ball into the red zone, squeezes through an opening in the defensive line, and tumbles across the line to score. He struts into the end zone and drives fans into a frenzy.

But Jake is also team owner and coach. He makes the call on trades and decides whether to meet his wide receiver's diva demands. He customizes his crowd of wild aficionados, creating "superfans" who will pump up his players and drive them to victory.

Although Jake might spend some time playing real football in his local junior football league, the game that occupies his hours is *Madden NFL 2005*, the latest software release in the *Madden NFL Football* franchise from gaming empire Electronic Arts (EA). His 3-D playing field comes to life on a Dell™ Dimension™ XPS Gen 4 desktop, the ultimate gamer's delight. And *Madden NFL 2005* is not just a hobby. Ask his parents, who will recount stories of bedtime resistance—and some impressive physical feats—and you can see that Jake's copy of *Madden NFL 2005* is the object of his passion.

"I walked into his room one evening and couldn't believe what I saw," says dad Phil. "He was manipulating one control with his hands and the other with his toes. I said, 'Jake, what are you doing?!' He said 'I'm tired of playing against the computer so I'm being player 1 and player 2.'"

## A force to reckon with

Except for the toes, this scenario probably is very familiar to readers with kids—or those with their own penchant for gaming. And judging by how quickly EA games fly off the shelves, gamers comprise a big crowd with serious spending power. The recent release of the much-anticipated *The Sims 2* sold more than 1 million copies in just 10 days in September

2004. At approximately US\$50 a pop, the first 10 days of sales brought a pretty good return on EA's development investments.

Of course, electronic gaming is no child's play. Behind *The Sims 2*, *Madden NFL 2005*, and other popular games is a highly profitable industry. And at the forefront of the electronic gaming industry is Redwood City, California–based Electronic Arts, a leading developer and publisher of interactive entertainment software for personal computers and entertainment systems. Dell PCs, Sony PlayStation and PlayStation 2 computer entertainment systems, Microsoft® Xbox® video game console, and Nintendo GameCube and Game Boy Advance all support games from EA.

## EA quick facts

- ▶ In FY04, EA revenues were US\$2.96 billion.
- ▶ *The Sims 2* sold more than 1 million copies worldwide within the first 10 days of release—the biggest PC launch in EA's history.
- ▶ *Madden NFL 2005* became the number-one selling game of the year in North America—in just one month.
- ▶ Club Pogo, EA's popular online subscription service, recently marked its one-year anniversary with more than 500,000 subscribers—75 percent of whom are women with an average age of 35 and older.
- ▶ EA received four out of the "Top Five PC Games with the Highest Expectations" awards and two out of the "Top Five Most Popular PC Games" awards at China Joy, China's equivalent to Electronic Entertainment Expo (E<sup>3</sup>).

## Staying ahead of trends

Mobility is one of the hottest trends in the electronic gaming industry, especially over wireless devices such as cell phones and PDAs. According to a report from the Consumer Electronics Association, the number of wireless gamers in the United States could reach 19.6 million by the end of 2004 and 112.4 million by 2007. Electronic Arts has already outlined steps to bolster its offering of games designed for play on mobile phones. In addition to EA's major investments in the Sony PSP, Nintendo DS, and Nokia N-Gate devices, the company will build on the success of its franchises such as *FIFA Soccer* and *Tiger Woods PGA Tour Golf* in the mobile gaming space.

Since its inception, EA has garnered more than 700 awards for outstanding software in the United States and Europe. The company markets its products worldwide under four brand logos and has more than 33 product franchises that each have reached more than a million unit sales worldwide. To say the least, EA is massive.

Running a monster company requires more than bright minds. As any CIO knows, the recipe for success at a company the size of EA requires the right mix of people, processes, and technology.

And EA has it.



### First, hire MVPs

To make a single game, EA will need 80–150 developers and possibly up to 100 people on the quality assurance (QA) team. For all roles, the company is renowned for hiring employees who can approach their jobs with the right mix of individual artistry, traditional programmer geekiness, and love of collaboration. “At its core, Electronic Arts is a company that is very talent-driven and creatively focused,” says Joe Kugler, vice president of Worldwide Technology Services and Operations at EA. “At the simplest level, our teams take artistic concepts combined with technological and marketing know-how to produce top-selling games on a predictable, repeatable basis.”

To create its games, developers at EA combine diverse media—such as video, photographic images, motion capture, 3-D face and body rendering technologies, computer graphics, and stereo sound—with contributions from storywriters, film directors, and musicians. This blend of technology and creativity results in mainstream entertainment delivered through an interactive medium. It creates an experience that is something like the Choose Your Own Adventure children's books brought to life in color, motion, and sound. So if you don't like the ending of *The Lord of the Rings: The Return of the King* or feel like slaying a few Orcs for yourself, just grab a copy of EA's *The Lord of the Rings: The Battle for Middle-earth* and you can, in a way, live the experience in your own home.

Of its 5,100 employees, some 3,300 are focused on developing the company's games. EA's product is creativity, and the company stops at nothing to recruit the best of the best at turning creative innovation into a marketable product. Game developers have specialties in different aspects of game creation, including light and sound—just like in Hollywood. And that's exactly where some of EA's recruits originate.

“We're constantly hiring from the entertainment industry,” Kugler says. “We regularly bring

## EA grows its own talent

EA is an expert recruiter of people who have core skills and the ability to apply them to electronic gaming production. Until recently, this business did not have a ready-made candidate pool of experienced game developers graduating from college each year. But that changed in 2004, when EA donated money to the School of Cinema-Television at the University of Southern California (USC) to create the EA Game Innovation Lab at USC's Robert Zemeckis Center for Digital Arts. The lab is a state-of-the-art research space and think tank where new concepts in game design, play, and usability are developed, prototyped, and play-tested.

The gift will fund a three-year Master of Fine Arts program within the school's Division of Interactive Media and serve as a launch pad for the next generation of game designers.

In addition, the creation of the Electronic Arts Endowed Faculty Chair—the first-ever endowed chair at a university for the study of electronic gaming and interactive entertainment—will enable the school to meet the intensifying demand for talented game developers who are solidly grounded in story and content. It also will help bring some of the game industry's top talent to USC as educators, while drawing top student candidates from home and abroad to learn one-on-one from these experts.

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EA's efforts take not only entertainment to a new level, but also revenue. Some of the company's titles have generated more revenue than the movies that inspired them.

### Next, make a game plan—and stick to it

The next ingredient in EA's magic mix is the company's ability to turn creative processes into efficient, standard, repeatable processes. By its nature, creativity defies standardization, and EA has found a way to balance these two competing business needs. EA runs an impressively tight supply chain that enables it to send

games for localization in multiple languages and release them around the world, usually within the same day. Those repeatable processes have fostered trust between EA and its retailers. When the company launches a title, its retailers—big and small—all know they will have the new game on their shelves at exactly the same time their competitors will have it.

Perhaps one reason EA has become so proficient at standardizing processes is that it gets a lot of practice. EA releases its titles on multiple platforms from different vendors—PCs, PlayStation 2, Xbox, and GameCube. And within some of the overarching lines of hardware are offshoots; for example, Nintendo has the DS, GameBoy, and GameBoy Advance handheld gaming devices. Gaming hardware manufacturers constantly rev their products just like PC and server manufacturers, so EA must respond to these core technology changes every few years.



## Gamer's delight

The Dell Dimension XPS Gen 4, Dell's newest XPS gaming and enthusiast PC, supports the latest 925XE chip set from Intel—and has an eye-catching new design. It is designed for the intense gamer or the enthusiast who demands high system performance with the latest available technology. The Dimension XPS Gen 4 features Intel® Pentium® 4 processors combined with dual-channel double data rate 2 (DDR2) 533 MHz memory to give you outstanding graphics and system performance. The 925XE chip set has a 1066 MHz frontside bus that supports the latest Intel 3.46 GHz Extreme Edition processor. The Dimension XPS Gen 4 also offers eight USB 2.0 ports; built-in Broadcom Gigabit<sup>1</sup> Ethernet for broadband-ready peripherals and easy high-speed connection; and on-board and front-accessible IEEE1394 port, headphone jack, and microphone jack. The Sound Blaster Audigy 2 ZS (D) audio card is available on all Dimension XPS systems and delivers extreme high-definition audio performance that rivals high-end home stereo and home theater systems. With the graphics, processing, and memory capabilities of this system, gamers can submerge themselves in the virtual reality of their games for hours at a time.

<sup>1</sup> This term does not connote an actual operating speed of 1 Gbps. For high-speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.

“They don't rev at the same time or in the same way,” Kugler says. “Plus, manufacturers still carry older platforms, so we still have to develop games for the older consoles after new consoles are out. A great example is that there are still 80 million PlayStation game consoles in use five years after the launch of Sony PlayStation 2. We think there will be 100 million PlayStation 2 machines by the time Sony launches its next generation of hardware. We can't miss the opportunity to sell games to users of older hardware. At the same time, the technology shift is so significant that we basically have to retool and start from scratch with each new generation of game console.”

Another important process is the way EA transports its enormous files from one office to another. Over the last few years, the company has rolled out an internally engineered and managed wide area network (WAN) solution based on Internet transport over a virtual private network (VPN). “Although that sounds very ‘blah,’ the results are incredible. It allowed us to increase the size of the pipes connecting different offices by 20 times,” Kugler says. “It allows studios to collaborate more—and more often. For example, using this file transfer network, our development teams can send entire game images among our offices in less than 20 minutes. This permits the QA and localization teams to complete many more testing QA cycles on our games. So something as plain as a WAN has really set us up for successes in a way our competition hasn't been able to achieve.”

### Finally, equip your players with the right gear

The dynamic nature of the electronic gaming industry requires EA to be light on its feet, ready to change everything from a game's storyline to the company's core enterprise technology if business needs demand it. The need to respond to market trends is how the company came to depend on Dell technology at the heart of its IT infrastructure.

For many years, the electronic gaming industry has been tapping a new audience: online gamers. Online gaming is nothing new, but the widespread



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adoption of high-speed Internet access has brought tremendous growth in the number of people who prefer to test their skills with other humans as opposed to the software’s built-in artificial intelligence. Online gaming has become tremendously popular, and EA decided in 2002 to extend one of its best-selling games to online gamers everywhere.

In EA’s *The Sims* franchise of games, players design cities and buildings. They act as puppetmasters by creating their own characters and controlling their lives. They direct Sims citizens’ every action, from sleeping to paying bills to feeding the dog to dating. It’s a hypnotic, addictive game that you can play for hours—without realizing that hours have passed and you’ve blinked your eyes only five times. To take *The Sims* online would lift the gaming experience to a new level—and require an incredibly powerful IT infrastructure to handle the amount of traffic that EA anticipated would flock to its site.

*The Sims Online* would need to accommodate dramatic spikes in traffic in a community that would include thousands of players at a time. At the time, 95 percent of EA’s servers ran the UNIX® operating system (OS), but the company explored other options carefully. The decision: launch the site on Dell PowerEdge™ servers running the Red Hat® Advanced Linux® OS and Oracle9i™ Database with Real Application Clusters (Oracle9i RAC)

“The move to Intel processor–based servers and an open-source OS was a total cost of ownership decision,” says Kugler, who led the *The Sims Online* project. “We didn’t want to be married to UNIX hardware and the vendors’ road maps, which might not meet our needs in the future. We wanted a ubiquitous platform, like Intel processor–based servers, because we could easily reuse those servers throughout the organization. Plus, we could get that hardware for a great price and reduce our ongoing maintenance costs.”

The project was a success. The Dell/Red Hat/Oracle combination serves up *The Sims Online* with speed and performance—letting EA scale to handle whatever traffic comes its way. The

company also needed to ensure the database server wouldn’t fail; now Oracle9i RAC on Dell protects EA against server failure without the added expense of a standby system.

EA wanted to improve *The Sims Online* gaming experience by speeding up response time. The load-balancing technology on its Dell servers provides an 8 percent faster game response than big boxes, helping EA to meet its goal of 30,000 SQL calls per second. In addition, following a scalable enterprise approach with Dell servers lets EA buy only enough capacity for what it needs today. Adding capacity is simple—EA just plugs in more Dell servers to accommodate spikes in traffic.

The success of this project has had a definite impact on customer satisfaction and brand loyalty. EA knows that poor performance would cause it to lose customers; too many crashes or slow game speed turns off gamers and increases customer churn rates.

Kugler’s hopes of a great bottom-line result came true: A return on investment (ROI) study determined that the Dell/Red Hat/Oracle solution will support the online service for an estimated US\$3.4 million *less* over a five-year investment period than a system based on proprietary UNIX servers. The bottom line is that, through 2008, EA expects to save 46 percent.

EA’s approach to IT follows a strategy of efficiency that has become the company’s guiding philosophy—and helped land it a spot on the *InformationWeek* 500 list as a global leader in technology strategy. At the forefront of that strategy is remaining scalable by running standards-based hardware that EA can redeploy in other areas on a moment’s notice.

“We use technologies that are organic and can be redeployed for multiple uses. We’re very reluctant to use value-added services that have not reached mass adoption or commodity pricing,” Kugler says. “We just don’t need grids or excessive clustering to get the job done—and why pay for technology that isn’t necessary? Our Dell servers are affordable and flexible. They are a key part of our strategy for staying agile and at the top of our game.” **D**