PART II

A Seismic Quake

Twelve *id and Ego*

Id Software "biz guy" Jay Wilbur sat in front of his computer in Mesquite, Texas, cursing to himself. He was in an endless line, as surely as if he'd been waiting at the post office, and this line wasn't moving. There were dozens, maybe hundreds, probably even thousands of people virtually piled in front of him. This was a genuine Internet traffic jam. And right there was the problem. Every single person was waiting to get his or her hands on the computer program he had on his machine. No one wanted to leave until he could upload it to the University of Wisconsin's servers, but he couldn't upload it until some of them logged off.

They were at an impasse. Much of that was Wilbur's own fault. For months his company had been teasing the game community with tantalizing promises about its new game, *Doom*. Today, December 10, 1993, was D-Day. Eager fans had bought entirely into the hype. They were convinced this was going to be the biggest thing ever to hit PC gaming circles. The game would put the player in the role of a space marine armed with a startlingly powerful arsenal—including machine guns, chainsaws, and the soon-to-be-legendary Big Fucking Gun (BFG) -- battling wave after wave of demons released from Hell. The first-person perspective, stunning visuals, 3D mazes, and lightning-fast action had started a buzz on the Net that had been growing ever since the company's New Year's Day press release almost a year before:

> *Stationed at a scientific research facility, your days are filled with tedium and paperwork. Today is a bit different. Wave after wave of demonic creatures are spreading through the base, killing or possessing everyone in sight. As you stand knee-*

deep in the dead, your duty seems clear—you must eradicate the enemy and find out where they're coming from.

Even by the standards of the time, this didn't show outstanding narrative invention. But there was more. This time, players weren't going be alone. "See your friends bite it!" the press release continued. "Cause your friends to bite it! Bite it yourself! And if you won't bite it, there are plenty of demonic denizens to bite it for you!"

Doom sounded as if it would top anything that had come before. Few could have predicted just how influential it would also prove to be for game culture more broadly; but right now, Wilbur just needed to get the game loaded onto a server where people could download it. In the afternoon, he'd tried logging on to the FTP site where it was to be released, and he tried again as evening turned into night. He was getting anxious and angry. He finally contacted an administrator where the server was, in theory, ready and waiting for the files. "I can't get in," he said. "The FTP is full."

The administrator checked the server. "Okay, I just added a slot, you should be able to get in."

In the time it took Wilbur to read the message, somebody slipped on before him. This logjam had no end in sight. "No good," he reported.

The Wisconsin student tapped a few commands into his computer, on the other end of the line. "Try again," he said. "I just added ten more slots."

Rolling his eyes, Wilbur tried again. Still no luck. The would-be *Doom* players were *fast*. "This isn't working," he said. "You've got to clear the way."

Sitting in front of their computers around the country, fans were starting to grumble. On Usenet newsgroups dedicated to PC gaming, people posted angry notes, losing faith that id Software would deliver that day as promised. Eventually an explanation for the delay emerged after one would-be player said he'd managed to log on to the site and had seen a message: "Sorry, the incoming directory is full, no one can upload any files until it's clear."

Enough fans got the message. Some of them had to get out of line and unclog the connection, or they'd never get the game. Slowly, connections began to drop away, and Wilbur was able to start uploading the file. That only

served to feed the frenzy. As soon as parts of the game were available, people started downloading them, even before Wilbur had finished his job. It was a digital riot, with anxious gamers grabbing and pulling at the files as quickly as they could. File transfers, both up and down, slowed to a crawl. Ready to throw his computer out the window, Wilbur called the administrator back.

"Okay, okay, I know what to do," the administrator said. With a few simple keystrokes, he effectively barricaded the doors of the digital room, locking out everyone who was trying to log on from outside the university. The move angered many who had been waiting all day, but created the necessary breathing space. Wilbur's upload finally sped up, downloads began in earnest, and the age of *Doom* had come at last (several hours behind schedule).

The game would explode like a rocket shell in the collective consciousness of PC gamers, changing the way that people thought about the computer as a gaming platform and inspiring whole industries of imitators. The first-person perspective captured the imagination of gamers everywhere, just as it had for Richard Garriott when he'd peeled open the Apple II box years before and watched the *Escape* maze appear before his eyes. The "shooter," as *Doom* and its clones would come to be called, essentially took the kill-fast-or-die concept of *Space Invaders* and blew it up into a fully realized 3D world defined by demonic creatures and blood-spattered walls. Missing were Richard's storyteller's sense and artistic aspirations, replaced by a blazingly fast game in which players ran between rooms, stopping only long enough to kill everything that moved.

Content aside, *Doom* did more than any other single title to usher in an era of networked games and gamers. Here, and even more so with id's later games, the digital playing field shifted from a player's own computer into cyberspace itself as players learned to battle each other online. Communities coalesced around the game and its successors, fed by id's repeated decisions to help players modify and extend the games with almost unprecedented ease. To a degree far beyond that of the *Ultima* series, the culture and character of play defining *Doom* and its spiritual successor, *Quake*, were created as much by players as by developers John Carmack, John Romero, and the rest of the id Software team.

Id's vision nevertheless changed the face of gaming. To be sure, the company was in some senses simply in the right place at the right time,

creating a popular network-capable game at precisely the moment in technological history that home computers were joining the networked universe in droves. Yet while other companies released networked games, id's developers provided a unique mix of game-writing panache, the ability to see and take advantage of trends a step ahead of their rivals, and a corporate ideology that valued giving players as much power over the gaming technology as possible. This combination laid the infrastructure for passionate networked gaming communities on a scale that had never been seen before.

The core figures behind id's early years, the ebullient John Romero and the taciturn, ultra-focused John Carmack, were a yin and yang of programming. Each was a visionary in his own way: Romero was a talented programmer and game designer who believed in games and gaming with a missionary fervor. He communicated that infectious optimism to his company and the world. Carmack wasn't much for small talk, but became one of the recognized titans of game programming—to the point where even technology industry luminaries such as Apple's Steve Jobs and Microsoft's Bill Gates would seek his blessing for their products.

Like Richard, each had grown up with a love of programming in general and games in particular. They were a few years younger than Richard, but had still cut their teeth on the Apple II computer. Both counted Richard's *Ultima* series as one of their biggest early influences. Romero actually went to work at Origin Systems as his first real job in the computer industry, and the first games that Carmack sold to hobbyist magazines in the late 1980s were deeply influenced by the *Ultima* worlds. Each programmer had a much more unsettled adolescence than Richard; whether that contributed to the far darker worlds they created is hard to say, but it's certain that each of them found programming to be a refuge from unhappiness elsewhere in their lives.

Romero grew up in the small California foothill town of Rocklin. His parents divorced when he was young, and his mother remarried an engineer who helped encourage his interest in programming. He was mostly interested in games: initially arcade games, and then the mainframe games like *Adventure* that he found at the local community college in 1979, and finally in writing games for his own Apple II. He moved to England for high school, returning afterward to bounce unhappily back and forth between his

separated parents' homes, looking for direction. He sold games to hobbyist magazines like *Nibble* and *UpTime*, but wound up working at Burger King and Taco Bell to make ends meet before finally screwing up the courage to go to San Francisco's Applefest computer trade show in 1987 to look for a real job.

Wilbur, at that time an editor for *UpTime*, remembers the young Romero as one of his top freelancers, even at the age of eighteen. "He was very smart, a brilliant young man," Wilbur said. "He was very energetic, very happy, very enthusiastic. He just exuded a desire to do nothing in life but write games on the Apple."

The San Francisco tradeshow turned out to be Romero's first big break. He showed employees at the Origin Systems booth one of the games he'd written, and they were impressed. A few months of persistent calling finally got him an interview for a job in the New Hampshire office of Richard's company, programming the Commodore 64 rather than his beloved Apple. "I had never used one, but I told them I was completely confident that I could learn the entire computer in a month," Romero said later. "I said, 'Okay, dude, I'll do it. Anything, I just have to get in there.'"

He got the job, impressing the programmers that interviewed him, and moved to New Hampshire. He met Robert Garriott and a host of others he already knew by name and reputation. He watched the newest *Ultima* being play tested. He wandered around the Origin shipping offices, looking at the stacks of game trinkets, colorful boxes packed full with some of his favorite games, and Richard's cloth maps. For a young hacker who'd been working at burger joints not long before, this was the Promised Land.

Even then Romero was restless and ambitious. He lasted at Origin only six months. His supervisor quit to form a little startup nearby in New Hampshire, and asked Romero to join him. After some soul-searching, he agreed to go. That job, too, lasted only a few months before the startup's Apple-based contracts were canceled, a casualty of the growing market perception that the Apple II was a platform past its prime. In 1988, Romero finally followed his old friend Wilbur to Louisiana, where both were hired by Softdisk, a company that published monthly disks full of software for Apple and PC owners. After a year there learning how to program for the PC, churning out what he considered to be boring utility programs, Romero told Softdisk's owner that he wanted to start writing games again, or he'd

leave. The company's owner agreed to start a new division for him, and said he could look for help.

Two states away, in Kansas City, Missouri, barely making ends meet, John Carmack was slowly building the skills that would make him one of the weird geniuses of the gaming industry. A slight, blond man with a baby face and a perpetually distracted gaze, he would in many ways be Romero's opposite, as intensely private as Romero was public. Interviewed years later, he spoke with a verbal tic, a slight gulp between phrases and sentences, his words flowing with the unemotional evenness of code itself. He was as focused as any human being alive; his work days were legendary, and his co-workers joked that he rarely actually spoke to them. The collaboration between the two men would prove explosively productive in its early years; the tensions between their styles and visions would later tear the relationship apart.

Carmack's early years were perhaps even more unsettled than Romero's, with both providing a stark contrast to Richard's more utopian childhood. Carmack's parents too had divorced when he was young, leaving him shuttling between his parents' houses. He was a smart kid, taking all the gifted classes available at school, but had little use for others' advice. His disregard for boundaries or conventional paths brought him quick proficiency in almost anything technical. In other realms, the anti–authoritarian streak in him took riskier expression. At the age of thirteen, he was arrested for breaking into a local school, and he subsequently spent a year in a juvenile reform home.

He knew from an early age that he was a programmer. By the sixth grade he was already writing games. Unlike Garriott, whose focus was on the construction of great immersive worlds, Carmack saw game programming as a vehicle to provide him with the technical challenges he craved. At his mother's house, he had a Commodore VIC-20 computer that he mastered, but its limitations soon proved maddening. He begged his mother to buy him an Apple II like the one at his high school, but she simply didn't have the money. He begged for permission to tap the college fund his parents had created at the time of the divorce, but his mother refused, echoing Owen Garriott's insistence that game programming might be a hobby but certainly

wasn't a career. The conflict worsened a relationship that would stay rocky well into his adult years. "When I was writing computer games, it was just playing to her, and she didn't take it seriously," he said. "It wasn't until I drove up to the house in a Ferrari that I proved my point."

Stuck with the Commodore at home, he used it as many hackers of the age did, tapping into pirate bulletin board systems and other people's networks. He dabbled in phreaking, an activity that involved mapping the secrets of public telephone networks and manipulating them in ways only technicians were supposed to be able to do. He continued to learn the ins and outs of the Apple II and eventually bought a cheap stolen machine from one of his reform-school friends.

After high school, he'd taken a year of exclusively computer classes at the University of Missouri, Kansas City, but like other young computer whizzes had found little reason to continue. "All through high school and when I went to college it was really clear that I was the big programmer around," he said later. "I never got the sense that any of my professors was a hot programmer in any way. Obviously they knew some things, but in some cases it was really frustrating. I didn't think they were even on the right track in how you should go about things." Years later he would realize that he could have gotten more out of the college environment, he said, but as a teenager, he simply didn't have the patience to wait.

Yet by the time he dropped out of college, he had his tool of choice. Carmack's grandfather left him about $1,500 when he passed away, enough to buy his Apple IIGS. His mother mocked his decision, saying it was stupid to buy a computer when he couldn't even afford a printer. He didn't care. He threw himself into writing his own games. He studied Richard's *Ultima* games in particular, digging as deeply into the code as the programs would let him, creating his own similar titles. He sold a few of these to some of the same hobbyist magazines that Romero had started with. One of them, a top-down, swords-and-sorcery role-playing game similar to Garriott's *Ultima* titles, found its way to Wilbur, Romero's mentor, who was then working with freelancers at Softdisk.

After this point, Carmack started writing games regularly for Softdisk, though this barely brought in enough money to survive. Though he lived on little else than pizza and books, he had trouble paying rent without occasionally borrowing cash from friends and family. He finally came to the

same conclusion Richard had reached just a few years before: If he wanted to support himself as a programmer, he would need to learn how to code on the PC, which was beginning to dominate the market despite being maligned by Apple lovers for its poor graphics, nonexistent audio support, and cumbersome operating system.

"What I did was rent a PC for a month, and converted some of my Apple programs over to the IBM, and sold them to the other branch of Softdisk," he said later. "Evidently that really, really impressed a bunch of the people there, that I could just go rent a PC and learn a whole new architecture. At that point they started pressuring me to go down and interview."

He held off for months. He liked the freedom of working alone, but destitution was beginning to wear on him. When Softdisk contacted him about working in Romero's new *Gamer's Edge* division, he decided he'd take the company's offer a little more seriously.

The company flew Carmack to Shreveport. With little personal stake in the success of the meeting, he didn't take much care to impress, showing up in a T-shirt and jeans torn at the knees, dressing the same way he ordinarily dressed at home. He talked to the management, but they didn't seem particularly inspiring. He looked at the town a little, but was similarly unmoved. He spent most of his time working; the place around him didn't really matter.

But when Romero and fellow programmer Lane Roathe took Carmack to dinner, something clicked. This pair struck Carmack as being serious people. He loosened up at last, and they wound up talking for hours over Italian food. By the end of the conversation, he was ready to come on board. "It was really the first time I had met programmers who knew more stuff than me," Carmack said. "I decided to take the job there almost exclusively because I had been very impressed with John and Lane."

Romero too was impressed, seeing Carmack as a perfect addition to the new games team, although he didn't immediately grasp the younger programmer's full potential. "I thought he was pretty cool, although he wasn't the raging monster genius he is now," Romero said years later. "But he really seemed excited. He was just a normal guy who was going to learn to program."

Thirteen *Commander Keen and the Way Out*

The small Softdisk game-development team bonded quickly. Wilbur, Carmack, and Roathe rented a house together on the shores of the nearby lake, much as Richard had done with his team of Austin programmers in Massachusetts. This proved very much a bachelor pad, complete with a hot tub in the master bedroom. They took up kneeboarding out on the water, competing to top each other's stunts.

Still, it was clear that Carmack was a little different than the others. The house was filled with entertainment reading: Tolkien's *Ring* series, William Gibson's *Neuromancer*, and other standards of the programmer's literary repertoire. Carmack's light-reading material tended more toward the details of Intel processors. His focus in the midst of projects was single-minded. "When he was programming, there was nothing else but programming," Wilbur said later. "I'm sure there were days where he didn't eat."

Carmack was happy. He was making more than he ever had — $27,000 a year—more than enough to keep him in books and pizza. He was learning quickly in an environment where his programming was taken wholly seriously. The young Kansas City expatriate was also showing off an ability to create game environments that transcended his ultra-focused technical side. His passion for fantastic worlds was fed each Saturday night as his housemates and Romero gathered for late-night sessions of *Dungeons & Dragons*. Carmack ran the games, creating a massively detailed, complex world as setting. The world, its history, and its characters in fact predated these games; Carmack had created them long before moving to Louisiana, and the characters played by his earlier friends in Kansas City occasionally showed up in those lakeside Shreveport games.

Recreation aside, it took some time before Carmack, Romero, and the rest of their team would find their own voice as a development team. Initially they were stuck working on small games for distribution with the *Gamer's Edge* bimonthly disk. They liked the work. They were good at it. It fed their passions. But it was hardly brain-stretching activity.

The downtime between projects gave them opportunities to explore their own creativity. Carmack had been working on a project modeled after Nintendo's *Super Mario Bros.*—at the time, one of the most popular home console games in the world. The side-scrolling game, in which the character runs across an environment unfolding smoothly in front of him, had no direct counterpart in the PC gaming world. Carmack thought he could build something like it. It was an ambitious idea, as the PC wasn't much of a multimedia machine yet, and graphics technology was undeveloped enough that many thought trying to replicate Nintendo's vision on the PC was simply a waste of time.

For quite some time, Carmack kept his experiments to himself, without showing even his closest co-workers his latest work. But one September night, Tom Hall, a programmer from Softdisk's Apple II department, stumbled over to Carmack's office to see what the whiz kid was working on. With the sun going down and the office mostly empty, Carmack's confidence swelled. He showed Hall his side-scrolling game engine. To Hall's eyes, it was amazing, rivaling Nintendo's work.

The two put their heads together, trying to figure out how they could best impress the others in the company. They decided their best bet was to roll it out with a demonstration. Show Romero something big. They borrowed Dangerous Dave, a character from an earlier Romero game, and put him in a near-exact copy of the first level of *Super Mario Bros. 3* running on Carmack's new graphics engine. They called it *Dangerous Dave in "Copyright Infringement."* Together they worked through the night, finally leaving a disk with their work on Romero's desk at 5:00 A.M.

When Romero came into work a few hours later, he popped the disk into the computer. He was stunned. "I knew what we had," he wrote later in an account on his personal Web page. "We had our ticket out." He showed it to other Softdisk employees. Few of them understood his excitement. It didn't matter. When Carmack and Hall got back to work, he pulled them into his office and gushed. His old friend Wilbur, passing by the office,

heard Romero expounding on potential futures and laughed. "I'm serious," Romero said, and pulled his former benefactor into the office with them.

The team tried at first to convince Softdisk to publish the new game. They could take out the obvious *Super Mario Bros. 3* graphics, and they'd still have a game that would be unlike anything else then on the PC. But the company wasn't interested. Carmack's programming required the use of a monitor technology that was still deemed high-end at that time, and Softdisk was after the mass market. The team decided to aim higher. Wilbur took the game to Nintendo, sending it to a woman on the legal team there. The message he received in return was simple, short, and clear: No. We don't want it. You can't use Mario. Destroy it.

They pressed ahead anyway, working on their own game largely in secret. Their days were spent working on their Softdisk games, and they dedicated their evening hours to finishing the game they renamed *Commander Keen*. They hatched a plan for a new company called id Software. At the time, Hall was the story man. He asked the others what they wanted the game to look like, then took their basic ideas, brainstormed for a few minutes, and came back into the room. In the stentorian voice of a 1950s radio announcer, he read the paragraph that would accompany their first game:

> *Billy Blaze, eight-year-old genius, working diligently in his backyard club house, has created an interstellar starship from old soup cans, rubber cement, and plastic tubing. While his folks are out on the town and the babysitter has fallen asleep, Billy travels into his backyard workshop, dons his brother's football helmet, and transforms into . . . COMMANDER KEEN—defender of Earth!*

All their work was fine, guaranteed to get any game player's blood flowing once *Commander Keen*'s Bean-with-Bacon Megarocket blasted off. But there was still one important question: Who would publish their game?

The answer turned out to be hanging on the wall in front of them.

While Carmack had been pursuing his secret project, Romero had for months been getting a series of fan letters. They all bore different names, but all were gushing in their acclaim for his games. He'd proudly posted

them on his office door. Then something caught his eye: While reading an advertisement in a computer magazine for a Texas company called Apogee Software, he recognized the address. It was the same as the return address on one of the letters. He looked further, and found the same address on all the letters. They'd all come from the same place. Angry, Romero wrote the seemingly crazy correspondent, demanding to know what was going on.

The mystery pen pal turned out to be Scott Miller, Apogee's founder, and he wasn't crazy. He was simply undercover. He was afraid Softdisk was scrutinizing Romero's mail, and wanted to fly under the radar. "I told him I knew how it looked," Miller said later. "But I was just trying to get in touch with a business proposal."

Miller was a programmer and gamer himself. He'd written a few adventure games and published them through on-disk magazines (which were magazines that were published on floppy disks) or posted them on university servers and software bulletin boards. Through the mid-1980s, he'd release his programs into the wild, allowing people to distribute them to their friends for free. Embedded in the games were messages that asked people to send money to help support him. The shareware strategy, as it was called, did encourage a few people to send money, but certainly not enough to allow him to quit his uninspiring day job as a computer consultant. Somewhere along the way, he had a different idea for distributing his game. He wrote a new game called *Kingdom of Kroz* and released it in parts in 1987, much like a serial movie. He gave away the first section for free and then asked people to pay money to get the rest of the game. This proved vastly more successful, and he was soon pulling in $500 to $1,000 on good weeks, nearly enough to support himself as a game writer.

The decade went on, and he continued releasing successive versions of *Kroz* titles. But he started thinking: What if he made this a real business? What if he got other shareware developers on board? He was ambitious enough to start sending the stream of letters to Romero in Louisiana. He wanted to be careful, though. Softdisk was a real company, and was now his competition. Romero was a smart guy, Miller thought. He'd figure the trick out.

Once they talked, Miller's proposal was simple: He wanted to publish a Romero game through Apogee's shareware network. After assuring himself that Miller wasn't actually crazy—or at least no more so than any

number of other reasonably successful people in the video game industry—Romero sent him a candidate. Miller liked the idea, but when he saw a copy of Carmack and Hall's *"Copyright Infringement"* demo, he lit up. That was the one he wanted, he said. The trio asked for $2,000 up front. Miller, who had just $5,000 in his account at the time—unfortunately, he was spending money as quickly as his new publishing strategy earned it for him—wrote them the check right away.

With a publishing plan in place, the id team now had to figure out when they could finish the game. Romero, Hall, and Carmack set themselves a brutal work schedule over the next three months. They recruited a Softdisk art intern, Adrian Carmack (no relation to John), to help them with some of the final graphics. Adrian had just barely started learning computer graphics, but acquitted himself well enough to earn a lasting spot on the team.

Apogee released *Commander Keen* in December 1990. Anybody could have the first two levels for free, but players had to pay to get to the rest. Miller's optimism paid off. In January, just a month after the game's release, Apogee wrote them a check for $10,000.

The money cemented their resolve. The group decided it was time to strike out on their own. They split away from Softdisk the next month. Romero and John Carmack informed their boss over lunch that the team would be leaving together. Adrian was coming with them, they added, although they hadn't actually told the intern this yet. After lunch, they let the other Carmack in on their plans for him, and he—figuring that if the team he was interning for left, he wouldn't have a job anyway—agreed. Legal obligations to Softdisk kept them publishing games through the company for more than a year afterward, but their hearts and minds were focused on the future.

Fourteen *Planting Seeds*

The id Software headquarters moved repeatedly through the early months of its existence. The team caravanned from Shreveport to Hall's hometown of Madison, Wisconsin, where the bitter winter cold took many of them by surprise. They lasted only six months before moving to the Dallas, Texas, suburb of Mesquite in April 1992. It was an auspicious choice. A Carmack Street runs through the city, not far west of the little downtown, and the town had been the home to one of the early legal fights over the morality of video games (although the id developers knew little of the city's history). In their minds it was simply convenient, close to Miller's Apogee, and blessedly warm.

New games followed quickly. There were sequels to *Commander Keen*, most of them released through shareware channels. The team was also under contract to Softdisk, and it pushed out a series of hastily written games designed to fulfill these obligations. A few of these games began to lay the technological and theoretical groundwork for their later breakthroughs. A tank game called *Hovertank 3D* drew on ideas of digital tank warfare that stretched as far back as *Battlezone* and Atari's *Combat*. The id programming team had created rudimentary 3D graphics and a first-person view, as though the player were looking through the eyes of the character in the game. The dungeon-crawling *Catacomb 3-D* followed. The two games were developed in quick succession, and because of that, the team noticed something important about the worlds they were creating. The combination of 3D graphics and a first-person view was creating action games that drew players surprisingly deeply into their worlds.

"You could do moody and tense in some ways in a slow-paced game,

but the kind of things that really grab you and make you sweat and jump are the kinds of things that really only happen in the action games," Carmack said later. "There were really specific things in the *Hovertank* and *Catacomb* games. You'd see people playing a game and they'd open a door and there'd be a great big troll right there, and you'd see them go 'AHHHH!' and jump back. You just never saw that in games before. That's where we said, 'This is powerful, this is what we should be concentrating on.'"

The 3D, first-person perspective that would become the hallmark of their games had its origins elsewhere, much earlier in gaming history. Several of the *D&D*-influenced role-playing games of the early PLATO network had had simple first-person perspectives of this kind. Richard's own *Akalabeth* had featured the simplest of line-drawn perspectives. A few games through this early period had even been rudimentary shooters. *Maze* (also known as *Maze Wars*), a multiplayer networked game that *Zork* and Infocom creator Dave Lebling had helped make in 1974, had briefly been responsible for a huge amount of cross-country network traffic between MIT and Stanford. A similar game called *MIDI Maze* in 1987 let Atari computer users network their machines together—each player represented by differently colored happy-face balls—and chase each other around a maze, shooting one another.

It was an *Ultima* spin-off that brought the first-person perspective into the modern age. When Richard had taken the programming side of Origin back to Texas from New Hampshire, a handful of talented programmers had stayed put. They collected a few other like-minded acquaintances and started a new company called Blue Sky Productions. A programmer named Paul Neurath there had been fascinated by the simple first-person perspectives of the mid-1980s role-playing games, and decided he could do better with modern technology. By summer 1990, he'd created a prototype that Blue Sky displayed at the Consumer Electronics Show in Las Vegas. Origin saw it and signed Blue Sky to create the game for its label. Romero saw it, too.

That game wouldn't be released until 1992, eventually coming out as *Ultima Underworld*, a 3D, action-packed dungeon crawl that was nominally set in the same world as Richard's popular games. It garnered critical praise and a rabid, if not huge, fan base. "It was the first game that ever gave me a sense of actually being in a real place," remembered longtime *Ultima* fan Robert Gregg, a Virginia software engineer who later created the Notable

Ultima fan site. "I played it the first time with lights out, and several times just got scared out of my wits. You really did get the very creepy sense of crawling around in this dark, damp dungeon, with real inhabitants and nasty monsters waiting around almost every corner."

It was id's next game, released just a week after *Ultima Underworld,* that sent the industry careening into its love affair with the first-person perspective and its bloodiest manifestations. Romero had suggested basing the game—their own this time, not a Softdisk release—on the old Apple II *Castle Wolfenstein* franchise. Their product, *Wolfenstein 3D*, turned out to have a style of game play similar to that of *Hovertank*, although this time players saw the soon-to-be familiar view of their in-game character's hands holding a gun ahead of himself as he stalked though the world killing Nazis and ultimately Hitler himself. Carmack took a number of technological shortcuts to make the 3D graphics work on the day's average computer. By the standards of the time, the game looked superlative.

Word of the game spread quickly across bulletin boards, the young Internet, and online services such as CompuServe. Romero in particular was eager to watch what people said about their creation, and showed the others files full of comments that people were posting online. But he also found more than comments: People were hacking into the game and transforming bits of it, changing the way the characters looked (someone created a Barney *Wolfenstein*, letting players shoot the giant purple children's TV character), changing the way the game sounded, and writing their own virtual mazes. A few people even released tools that would let others hack into the game and create their own game maps. Carmack in particular was impressed. The hackers reminded him of himself just a few years ago. He vowed to help them next time around.

"I'd had a lot of fun going in and trying to decipher the internal working of the *Ultimas*," Carmack said later. "I clearly remember thinking it would have been excellent to have the source code to one of those games I was messing with. So when we were in a position where we had popular games that people were having a lot of fun with, it made a lot of sense to let people who might be in the same situation that I was back then actually have that come true."

While Carmack and his team helped drive the gaming world's graphics technology forward, the broader technology industry was in the early stages of a communications revolution. By 1992 more than 3.3 million households in the United States had access to some kind of online computer network. [18] Most people were still using one of the commercial online services that had sprung up in CompuServe's wake, rather than subscribing to direct Internet services. Those online companies had divided up the market demographically. IBM and Sears, Roebuck & Co.'s joint venture, Prodigy, the largest of the consumer services with 1.75 million subscribers, had grown quickly with a low price tag bolstered by brash on-screen advertising. The venerable CompuServe appealed to techies and information sophisticates, but was trying to move to the mass market with a new graphical interface. America Online, the new incarnation of the former Quantum Link, was far from the powerhouse it would later become, with fewer than 200,000 subscribers.

A newcomer among these ranks had begun to hint at the promise of networked gaming. Launched in early 1992, the Sierra Network was the first national online service to be dedicated wholly to games and gamers. The service was the brainchild of Ken Williams, the Sierra On-Line founder, who had published Richard's second *Ultima*. Sierra had never previously had an online component, but in interviews at the time, Williams said he'd been dreaming of the networked gaming service since at least 1982, and had simply lacked the capital to start up a national network. [19]

With respect to gaming, the Sierra Network outstripped any commercially available network play, even though most online services had offered multiplayer networked games for years. Some of these were MUDs modeled after Richard Bartle's invention (the term MUD came to be a generic descriptor for this type of text-based world, alternately standing for multi-user dungeon, multi-user dimension, or multi-user domain). Others were games with simple graphics, much like what could be found on PLATO in the 1970s. Consumer modem speeds of the time had made games with all but the simplest graphics impossible to play over the telephone networks.

Sierra launched with a few basic games, such as bridge, chess, checkers, and hearts, allowing people to chat with each other while they were playing. When players signed up, they created little cartoons (called avatars) to represent themselves that other players would see as they were chatting.

The service quickly added a multiplayer flight simulator called *Red Baron* that allowed subscribers to dogfight with each other in the digital sky. An adults-only LarryLand, based on Sierra's *Leisure Suit Larry* games, allowed subscribers to role-play lounge lizards while playing blackjack, roulette, and other casino games. MedievaLand opened up a dark-ages role-playing game called *The Shadow of Yserbius*.

It was clear as 1992 drew to a close that cyberspace (as it was already being called) in general, and online gaming in particular, wasn't just for geeks anymore. Mainstream newspapers wrote breathless stories about the various "videotext" services. "You'd better get your tongue around the term 'interactive multimedia,' because it's shorthand for a revolution," *Fortune* magazine gushed later that year. [20] Cable companies, telecommunications giants, and computer companies were strategizing ways to capture and control this brave new world. Most of the smart money was on the cable companies, whose coaxial cables passing 90 percent of the homes in America could carry more data than could ordinary telephone lines. But the big phone companies and AT&T weren't taking that bandwidth deficit as a sign of their own weakness. AT&T was on the warpath, looking for multimedia companies that could help it capture a big slice of the new digital world, even purchasing 20 percent of the Sierra Network and renaming it the ImagiNation Network in 1993.

These corporate giants' dreams of a captive, cable-network–like online subscriber base evaporated almost as quickly as they had arisen, however. In January 1993, a University of Illinois computer science student named Marc Andreessen sent a terse email across a handful of techie email lists, announcing that he and a few other students were creating a new graphical program for reading and browsing those corners of the Internet already being called the World Wide Web. Released as a finished program in April 1993, Andreessen's Mosaic took the Internet by storm. The dry world of text databases and research archives suddenly blossomed with pictures and color. Local Internet service providers began springing up by the hundreds, offering their customers access to this sprawling, decidedly uncorporate, digital Wild West rather than to private, closely tended information services.

Carmack and Romero saw themselves as part of this revolution from below. Their sympathies were with the independent-minded hacker, not the online bridge-player, and certainly not with the big corporations' desire to

colonize and control this new cyberspace. As they watched these networks grow, and watched their own *Wolfenstein* become a cult favorite in PC gaming discussion groups on CompuServe and on the Internet's sprawling Usenet bulletin-board newsgroups, they decided it was time to make their next game multiplayer, and to let people play it over these computer networks.

Years later, Carmack would downplay the innovation of this step. "It's an obvious thing. If you've got two computers and you can connect them together, you're going to make a multiplayer game. It's like a law of nature," he said. "If anybody looks at a video game with somebody playing there, the first thought is 'Wouldn't it be cool if I was in there, too?'" They might have done the same thing with *Wolfenstein*, but their office simply didn't have an internal network. Once they got that up and running, network gaming was a foregone conclusion.

It might have been obvious from a technical perspective. The consequences for gaming communities were altogether harder to predict.

Fifteen *The Doom Connection*

The team began work on *Doom* in September 1992, two years after Carmack and Hall had stayed up all night to finish their *Mario Bros.*–inspired game. They tried initially to negotiate with Hollywood lawyers to get the rights to do a game based on the *Aliens* science-fiction film, but it hadn't come together. The programmers had wanted to keep absolute control over what happened in the game, and the studio wasn't ready for that.

While the company couldn't secure the rights to the big-budget *Alien* franchise, Carmack found a way to modify the idea. Instead of aliens, he argued, why not use demons released from Hell? They would be just as frightening as any *Aliens* creatures. Romero later said the idea might well have been spurred by their most recent *Dungeons & Dragons* session, which had finished when "demons had overrun the entire planet and destroyed the whole game." Whatever the genesis of the idea, the excess of that image—a world and its heroes drowning under a flood of demons—appealed to the team. It might not have been terribly original, but it would certainly serve as a skeleton for a game. Hall got to work on the story ideas. He wrote a set of memos the company called the *Doom Bible*, which laid out the basic narrative of the game (simple at its core: space marine on Mars must fight his way through demons accidentally released from Hell). The rest of the team started following that plot, working from rough sketches of monsters and level maps.

They sacrificed some things along the way. Initial press releases spoke of amazing detail to the game's graphics, game-play elements that would include a scoring system, and treasures that players would pick up along the way with evocative names like "Demonic Dagger and Skull Chest."

By the next summer they'd decided to simplify things. The new goal would be simple and twofold: Kill everything that moves; get out alive.

Carmack did keep his promise to feed the online hacker community that had developed around *Wolfenstein*. He remembered how much he'd wanted to see *Ultima*'s source code, and if he wasn't quite ready to release that much information along with the new games, he did want to give the hacker-players tools to dig into the game. He contacted one of the *Wolfenstein* hackers and gave him tools to write a level-builder for *Doom*. He built in ways for people to change the look of the game relatively simply. He decided to release code for some of the tools that id developers themselves used to create elements of the game.

The buzz surrounding the new game climbed to fever pitch long before it was released, at least on the online forums that followed PC games. Game developers are notoriously late with their work, and Carmack would become legendary for missing ship dates. This time was no exception. Hard-core *Wolfenstein* fans spent considerable time online, on chat groups and Usenet newsgroups dedicated to computer games, speculating about features, mulling over the bits of information that had been released, and joking about the delays. The bombastic promises that id had released to the community became the source of considerable parody. Constant questions asking "Where can I get *Doom*?" from newcomers who'd heard of the game and didn't know the full story exasperated people on the discussion groups. This simmering interest wound up producing some of the game's first moments of collective community history even before the software's actual release.

A few weeks before the game's ship date, a fan named Eli Bingham posted a suggestion to one of the interested newsgroups: Maybe id should pick a less catchy name for their next game, he said, so there wouldn't be so much crippling pre-release interest. Something like, say, *Smashing Pumpkins into Small Piles of Putrid Debris*. The giddy newsgroup picked up the name and, within hours, jokes about the fictional game *SPISPOPD* were flying. Finally another player named Seth Cohn announced that he was the official author of the FAQ (Frequently Asked Questions) document for "ego software's" hottest new game, *SPISPOPD*. People mailed him suggestions for game features, and within a few days he had a long spot-on parody of a real id gaming FAQ, making ludicrous promises for the fictional game. It fooled

many gullible people online, who quickly wrote him and asked him for the game. It amused the developers at id, who incorporated the name of the fictional game into *Doom* itself as a secret cheat code, able to give a player extra power.

By the time Wilbur finally got the game online on December 10, the online community was ready to pop with excitement. The University of Wisconsin servers were full for days with people downloading it. Reviews online were ecstatic—although every once in a while, a lone voice would pipe up, worrying about the over-the-top gore. In the first five months alone, people downloaded more than 1.3 million copies of the free version, more than five times the number who'd ever purchased even the most successful *Ultima*. [21]

Doom did more than just push the limits of graphics technology. Through its ability to let people network computers together and play against each other, *Doom* became one of the first widespread commercial realizations of an online collective virtual reality. The dream of a networked cyberworld had infused notions of online behavior for years, driven by visions spun by a handful of science-fiction authors, San Francisco Bay Area futurists and journalists, and ambitious programmers. *Doom* seemed to many to be a long step forward toward this idea. [22]

Doom brought parts of this imagined digital environment into existence in a way that stepped well beyond most other commercial games to date. Carmack had again been forced to take many shortcuts to match his technical vision with the constraints of the day's home-computer technology, but he had created a recognizably 3D world that people could wander through. The online component meant people could inhabit the same virtual space at the same time, though unlike the persistent worlds that would come later, each little game world popped into existence only as long as at least two players were there. This was a long way even from a text MUD's ability to create a stable world that people could visit, leave, and return to at a later date; yet the technology, the graphics, and the world's immersive sense of motion and solidity brought the idea of virtual realities one step closer.

Todd Gehrke, a young programmer working at the time in Redmond, Washington, later told of walking in on the early attempts of a pair of Microsoft network administrators to set up a private *Doom* network, a few months after the game had been released. The two were simply running around the world, testing out what it was like to spend time in the game's environment. They weren't hunting each other yet. They were exploring. Gehrke, who would shortly become a *Doom* player of regional stature, was thrilled. "I still remember the hair on the back of my neck standing up, and getting goose bumps, knowing I was witnessing the future of computer gaming," he said. "I felt like I was witnessing the first flight of Wilbur and Orville Wright."

Richard's Origin Systems team was also floored, but more by the market's response than by the game. They'd gotten a peek at the demo earlier in the year and hadn't been impressed with either the story or the game-play. "We figured nobody outside of tech geeks would ever want to play this game, and certainly nobody would want to link their computers together and shoot each other," recalled Warren Spector. Richard, who was hard at work trying to integrate his company with Electronic Arts, hadn't taken the time to check out the game when id had come looking for a publisher. However, he quickly recognized the power of the online feature after its release.

"There is no doubt that what they did changed the industry," Richard said later. "It wasn't what we were doing, but it certainly showed us what was possible."

It changed reality for the people at id, too. The game sold incredibly well. Their shareware release strategy attracted hundreds of thousands of people to the game. Over the course of the next few years, they sold millions of copies of the title, while its sequel, *Doom II*, was downloaded tens of millions of times. Money poured in. They hired a public relations firm to help them sell the game and propagate an image of themselves as creators, and almost overnight helped change the image of what computer games were supposed to be. "The industry needed a rock star, and didn't have one yet," Wilbur said later. "We were all geeks. Before, it had been like the nerds were winning, but nobody knew that. You could talk to your parents about what you did for living, and if you told them, 'I write games,' the response would typically be, 'Well, you're a loser!'"

Romero thrived in the spotlight. Always the most outspoken of the

group, he let his hair grow nearly to his waist and started dressing more flamboyantly. The other founders were more private people, although that didn't prevent Carmack from buying the red Ferrari that finally convinced his mother that game-making might be a reasonable career.

They never said the words in public, but internally they did: They *were* rock stars now. Everyone was writing about them and fawning over their games. *Forbes* magazine even wrote that id's profit margins made Microsoft look like "a second-rate cement company." The group posted that article on their office wall.

The spotlight also brought the little company to the attention of legislators and family advocates who were in the midst of a wave of criticism of violent video games. *Doom* was lumped in with *Mortal Kombat* and other ultra-violent games as a damaging influence on children. The id developers didn't pay much heed. "I've always ignored that whole side of things," Carmack said later. "People never want to be responsible for themselves and are always looking for a scapegoat. If you raise yourself up there, you'll be attacked."

Much more interesting in their minds was the sudden rise of player communities around their games. The multiplayer feature was proving attractive to people who could figure out how to network computers together. Much of this was happening inside companies, as tech-support staffers took over their corporate networks to play the games. Tech-savvy home players slowly figured out how to do the same thing, although the equipment and knowledge needed to do this would be beyond most home-computer users until Microsoft built simplified networking technology into its Windows 95 operating system.

Other businesses sprang up specifically to support this multiplayer phenomenon. Companies were formed specifically to cater to online *Doom* players, making it relatively simple to dial in to the digital version of playing fields where gamers could find other players. People began holding local area network (LAN) parties, holding shooting rallies where everyone would bring their own computers, link them together with cables, and play against each other for days at a time.

Romero and some of the other developers loved spending time online, going to bulletin boards and chat rooms to see what people were saying, and pitching in with their own thoughts from time to time. Romero's

missives in particular were well-known for their wild enthusiasm. Carmack, by contrast, had little interest in actually interacting with the communities he'd helped spark.

"I've never really been a big community kind of person. I've always been more of the hermit hacker sort of person," Carmack said later. "I remember thinking about getting an amateur radio license when I was a kid, because I was interested in the technical side of things, making radios and things like that. But the whole basic point was about talking to random people you didn't know, and I just fundamentally didn't get it. It's sort of like that with a lot of these things with computers too. I recognize these are fairly basic human things that most people get, but I'm not there."

Nevertheless, Carmack and id kept feeding the community what it wanted, and the community grew and gave back. One player, a Novell network engineer named John Cash, sent in critical improvements to *Doom*'s initial networking function—the original turned out to swamp networks with unwanted data traffic—and ultimately came to work for id. New levels in which to fight and even whole new games sprang up on online bulletin boards, thanks to Carmack's release of design code. The company hired Tim Willits, a Minnesota college student who'd written a few of these mods, to work on a contract basis, and he eventually became a lead designer. *Doom II* was released with some improvements in the underlying technology, and went on to become the company's best-selling game. They collaborated with another developer, Raven Software, to make *Heretic* and *Hexen*, magic-themed games based on *Doom*'s underlying graphics technology. But the team already had its eyes on its next game.

If *Doom* ushered in the age of networked gaming, the company's next game solidified it as the future.

Sixteen *Gamequake*

Doom had taught the id developers several things. Multiplayer was important. Network play was important. The visceral, bone-chilling nature of a dark first-person view of the world remained vital. By late 1994, id's next big advance was coming into focus. It was going to be based on a character named Quake, again taken from one of the id programmers' long-running, epic games of *Dungeons & Dragons*. The story line was a bit hazy, however. Initially they envisioned a kind of role-playing game. The Thor–like character, Quake, would have a magic hammer that gained power as the game went on and as the player gained experience.

The developers were extraordinarily public about their plans. In one early interview published in the 1994 *Doom II: The Official Strategy Guide*, Romero could barely contain his excitement. He conceded that they didn't really have a story yet, more of "kind of a feel for the thing," but that didn't matter. The world was going to be amazing:

> *We're going to make you feel like you're in a real world. There will be bugs and birds flying around. You'll be looking around, going, "This is great! Hey, I wonder what's over there?" In Quake, you'll really have to kill things. You won't just press the trigger and hit it, you'll have to really beat the living shit out of the thing until it's dead. So you'll have this huge hammer and you'll pound it into blood paste on the floor, and you're going to have to take awhile, too. You're going to have to work on it. You won't just have this arrow point-and-click kind of thing.* [23]

The concept for the game world, as Romero indicated, was initially far more ambitious than it turned out. In one interview, designer American McGee said the team wanted it to be a "graphical MUD," a comment that seemed to promise a sprawling, stable multiplayer world. The design team started working on a world that drew on the aesthetic of ancient Aztec temples, but soon switched to medieval castles, leaving behind much of the work Romero had already talked about. They pressed forward for months, modifying it until Carmack and others started worrying that *Doom* aficionados would take one look at the low-tech fantasy weapons they were creating and go immediately back to their grenade launchers and machine guns. At least one of the lead designers threw up his hands, complaining that he was out of ideas for the medieval theme. Late in the year, they met, argued, and decided to move to the dark futuristic world that would ultimately be home to *Quake*.

Because the artists complained that they'd already put a year of work into the other idea and couldn't start from scratch, the company decided to keep much of the old look as well. As a result, dimensional rifts wound up transporting players back into medieval worlds, taking advantage of levels that had already been designed. As a story and setting it was somewhat flimsy, but Carmack had never believed that story and narrative were critical parts of games. Better to make games into activities that, like basketball or football, needed no backstory to be fun.

Ultimately, they made the multiplayer version first—or in the parlance of their own gaming community, the deathmatch version. The single-player game could come later; it was important to make sure the world itself was consistent and powerful. This was the way that Richard too had worked throughout much of his career, developing the world first and going back to impose an actual story on his games. For a game that the team envisioned would place more emphasis on exploring and killing than on storytelling, this strategy seemed best.

This deathmatch feature proved a dangerous distraction by the time it was even rudimentarily finished, however. Id's office in Mesquite at the time was like many other startups of the 1990s, located in a rundown building with no walls between working spaces, a fair amount of dust, and folding chairs scattered around. The open office and constant energy drove everyone to move quickly. The development team huddled around networked computers and

ran the game though its paces with their own deathmatch bouts, screaming and shouting at each other as their digital counterparts were successively pulverized by machine guns, rocket launchers, and lightning guns. There was little exploration happening, but plenty of killing. Romero and another developer, Shawn Green, were particularly avid players, stretching games out to fifty or sixty kills before stopping. Carmack finally put a "frag" (kill) limit on the deathmatches, in part to keep the team at work. It didn't help. The testing team would finish a bloody game, and a call would go across the room: "Does anyone think this game is finished testing?" A collective "NO!" would ring out across the room.

Throughout this process, information flowed freely to the *Doom* fan community about the new game. In February 1996, the company posted a very early version of the game online, with only a few of the final features enabled. It quickly spread across the Net, and *Quake* deathmatch servers run by players began to spring up, demonstrating huge advances on *Doom* network play. A few enterprising programmers figured out how to dig into the code and unlock features that the company had intended to leave dormant, including the monsters themselves. A full beta release hit the Net in June, catalyzing the community further, and the game was finally released in August.

Despite being far less different in concept from *Doom* than originally promised, *Quake* soared to the top of sales charts. Some reviewers quibbled that the company should have spent more time on developing an original story. Some complained about the game play. Most waxed eloquent about the technical innovations, from the graphical quality of the world and monsters to the Internet play that was already taking off.

Players loved it. Since shortly after the release of *Doom*, id staffers had been talking privately about "clans of warriors" that might coalesce and play against each other online. Players themselves had come to use the term too. In the days before *Quake*'s full details had been released, speculation had run wild about what could be done with the multiplayer worlds described at different stages of the process. In long-running online discussions, some came up with wild scenarios of all-out team warfare, with huge armies or clans fighting each other the way they would in later massively multiplayer worlds like *Lineage* or *Dark Age of Camelot*.

This concept of clans already had a history in gaming circles, with

a few MUDs having implemented clan systems in the late 1980s and early 1990s. In that context, clans were teams of players who agreed to work together, and were usually focused on killing other players—the idea was not terribly dissimilar from the older concept of guilds. A popular series of games called *MechWarrior* had also featured clan systems as part of the story.

Even before *Quake* was released, players began gathering into this kind of group. A few people complained in online forums about adopting the clan terminology, saying it made sense in the context of *MechWarrior*'s story but had no relevance whatever in the *Quake* world. They were ignored. New clans popped up daily with names like Reservoir Dogs, Clan Vengeance, or Violent Movement Clan. Some, like an all-star group of *Doom* veterans called the International House of Spork, were a little more whimsical, although no less deadly for the humor. Internet news sites dedicated to the game and community listed them, and for a short period of time, until concerns about legal liability over copyright and other issues intervened, *Quake* clan logos and news items were featured on id's own Web site.

Carmack had continued the process of encouraging people to create mods, and again the community went wild. The tools he'd released were more powerful than those for *Doom*, and mod-makers reacted accordingly. He also licensed the underlying technology to other commercial companies that made their own hit games on the basis of id's software engines. Much later, he even released the full source code free of charge, and the game found its way into academic research labs and digital animation studios, with nongamers using the software to create their own 3D work.

Internally, the rough development process had taken its toll. Romero felt that technology had taken precedence over the kind of creative game design he wanted to do. Carmack and others felt that Romero was no longer pulling his fair weight. "Romero was going on IRC (Internet Relay Chat) when he should have been working, from my point of view," Carmack said in one interview at the time. [24] The split had been building for a long time; shortly after the *Quake* beta version was released, Romero announced with a terse online message that he was leaving the company to start a "new game company with different goals." [25]

For years the rancor on both sides showed up in headlines and interviews, and the aftereffects of bruised egos would ripple through

the gaming community for at least another half-decade. From a gaming perspective, the split would matter far less. The work Romero and Carmack had done together had already had a catalyzing effect on game communities, and those communities were now largely self-sustaining.

Romero went on to found a high-profile company called Ion Storm, centered more specifically on design and narrative in its games. The quiet Carmack continued to build his reputation as a gaming technology genius, releasing more versions of *Quake*, *Doom*, and *Wolfenstein* that continued to soar ahead of most rivals' efforts with each new iteration. But five years after the release of *Quake*, Carmack was getting visibly bored, even if his games were still technologically unmatched market hits. "I'm not a gamer anymore," he said in early 2003, as the company was finishing *Doom 3*. He'd turned much of his attention to a new project by this time, an attempt to build a manned low-orbit spacecraft. "This lets me go back to the stage where every day I'm learning something new," he said. "I remember that from my early days of the computer industry, but it hasn't been like that in years."

Nevertheless, *Doom* and *Quake* had irrevocably changed computer gaming. The communities of networked gamers they'd helped spawn had gained enough momentum and power to affect the development of games themselves, and these communities stayed active whether or not a new title was due. The networked age of gamers had begun in earnest.