HOW TWO GUYS CREATED AN EMPIRE

MASTERS OF DOOM

AND TRANSFORMED POP CULTURE

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FOR MY FAMILY

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INTRODUCTION

The Two Johns

There were two games. One was played in life. The other was lived in play. Naturally these worlds collided, and so did the Two Johns.

It happened one afternoon in April 2000 in the bowels of downtown Dallas. The occasion was a $100,000 prize tournament of the computer game Quake III Arena. Hosted by the Cyberathlete Professional League, an organization that hoped to become the NFL of the medium, the gathering was BYOC—bring your own computer. Hundreds of machines were networked together in the basement of the Hyatt hotel for seventy-two hours of nonstop action. On a large video screen that displayed the games being played, rockets soared across digital arenas. Cigar-chomping space marines, busty dominatrix warriors, maniacal bloodstained clowns, hunted each other with rocket launchers and plasma guns. The object was simple: The player with the most kills wins.

The gamers at the event were as hard-core as they came. More than one thousand had road-tripped from as far as Florida and even Finland with their monitors, keyboards, and mice. They competed until they passed out at their computers or crawled under their tables to sleep on

pizza box pillows. A proud couple carried a newborn baby in home-made Quake pajamas. Two jocks paraded with their hair freshly shaved into the shape of Quake's clawlike logo; their girlfriends made their way around the convention hall, brandishing razors for anyone else who wanted the ultimate in devotional trims.

Such passion was hardly uncommon in Dallas, the capital of ultra-violent games like Quake and Doom. Paintball-like contests played from a first-person point of view, the games have pioneered a genre known as first-person shooters. They are among the bestselling franchises in this $10.8 billion industry and a sizable reason why Americans spend more money on video games than on movie tickets. They have created enough sociopolitical heat to get banned in some countries and, in the United States, blamed for inciting a killing spree by two fans at Columbine High School in 1999.

As a result, they have spawned their own unique outlaw community, a high-stakes, high-tech mecca for skilled and driven young gamers. In this world, no gamers were more skilled and driven than the co-creators of Doom and Quake, John Carmack and John Romero, or, as they were known, the Two Johns.

For a new generation, Carmack and Romero personified an American dream: they were self-made individuals who had transformed their personal passions into a big business, a new art form, and a cultural phenomenon. Their story made them the unlikeliest of antiheroes, esteemed by both Fortune 500 executives and computer hackers alike, and heralded as the Lennon and McCartney of video games (though they probably preferred being compared to Metallica). The Two Johns had escaped the broken homes of their youth to make some of the most influential games in history, until the very games they made tore them apart. Now in minutes, years after they had split, they were coming back together before their fans.

Carmack and Romero had each agreed to speak to their minions about their latest projects: Carmack's Quake III Arena, which he'd programmed at the company they cofounded, id Software, and Romero's Daikatana, the long-awaited epic he had been developing at his

new and competing start-up, Ion Storm. The games embodied the polar differences that had once made the Two Johns such a dynamic duo and now made them seemingly irreparable rivals. Their relationship was a study of human alchemy.

The twenty-nine-year-old Carmack was a monkish and philanthropic programmer who built high-powered rockets in his spare time (and made Bill Gates's short list of geniuses); his game and life aspired to the elegant discipline of computer code. The thirty-two-year-old Romero was a brash designer whose bad-boy image made him the industry's rock star; he would risk everything, including his reputation, to realize his wildest visions. As Carmack put it shortly after their break-up: "Romero wants an empire, I just want to create good programs."

When the hour of the Two Johns' arrival at the hotel finally approached, the gamers turned their attention from the skirmish on screen to the real-life one between the ex-partners. Out in the parking lot, Carmack and Romero pulled up one shortly after the other in the Ferraris they had bought together at the height of their collaboration. Carmack walked quickly past the crowd; he had short, sandy blond hair, square glasses, and a T-shirt of a walking hairball with two big eyes and legs. Romero sauntered in with his girlfriend, the sharpshooting gamer and Playboy model Stevie Case; he wore tight black jeans and matching shirt, and his infamous dark mane hung down near his waist. As they passed each other in the hall, the Two Johns nodded obligatorily, then continued to their posts.

It was time for this game to begin.

NINE

The Coolest Game

John Carmack stood in the Ferrari dealership admiring a cherry-red 328 sports car and had one thought: *How fast can it go?* As an engineer, he considered speed an efficient way to measure his progress: How much faster could he get the computer to render graphics on screen? A car was much the same. When Carmack looked at the sexy design of the body, he saw straight through to the engine. To the dealer's surprise, the wiry twenty-two-year-old in T-shirt and jeans wrote a check for seventy thousand dollars and took the keys.

It didn't take long for Carmack to feel that the car wasn't quite fast enough. His instinct was to get under the hood and start futzing around, just like he had with his MGB. But this was no ordinary car, this was a Ferrari. *No one* futzed with a Ferrari. The elite manufacturer had very low regard for anyone who dared mess with its pristine design. For Carmack, though, it was another machine to hack.

With Romero's help, Carmack soon found someone who was more than up to the task: Bob Norwood. Norwood had been racing and building cars since he was a thirteen-year-old in Kansas. He held more than a hundred spots in *The Guinness Book of World Records* for speed records in a variety of funny cars and, above all else, Ferraris. When

Romero read in an auto magazine that Norwood now ran an auto shop in Dallas, he suggested Carmack give him a call.

Carmack, as usual, was skeptical. Every other auto guy in town had shrugged off his request. "A Ferrari, eh?" they'd say. "Well, I guess we can put a new exhaust system on it." A new exhaust, Carmack knew, was a wimpy and ineffectual answer to his problem. When he drove into Norwood's, the crusty owner walked out with greasy hands. "I got this 328," Carmack said cautiously, "and I want it to be a little faster." Norwood squinted his eye and replied matter-of-factly, "We'll put a turbo on it." Carmack had found a new friend.

For fifteen thousand dollars, Norwood rigged the Ferrari with a turbo system that would activate when Carmack floored the gas pedal. It was a ballsy bit of hacking, and Carmack immediately felt a kinship with the veteran racing man. The day it was finished, Carmack planned to celebrate by driving to his brother's graduation in Missouri; though his success with Keen and Wolfenstein had helped him mend bridges with his mother, pulling up in a car like this was guaranteed to close the deal.

He showed up at Norwood's with his duffel bag, threw it in the trunk, then hit the road. Just outside Dallas, he saw an open stretch of highway. Slowly, he pushed the pedal down to the floor. As it lowered, he felt a force build until the pedal hit the metal and the car accelerated almost twice as fast, reaching nearly 140 miles per hour. Life was good. He was living his dream: working for himself, programming all night, dressing how he pleased. All those long, hard years without a computer, without a hacker community, were fading behind him. Contrary to what the other guys might have thought, he did have feelings. And at this moment, with the cows and corn blurring beside him, he felt unbelievably happy. He drove the rest of the way with a huge grin on his face.

His car wasn't the only engine Carmack wanted to go faster. Doom, though quick, was still not quite quick enough for his taste. The game had considerable challenges for speed, such as the textured ceilings and floors, as well as the walls of varying heights. While porting Wolfen-

stein to the Super Nintendo System, Carmack had read about a programming process known as Binary Space Partitioning, or BSP. The process was being used by a programmer at Bell Labs to help render three-dimensional models on screen. In the simplest terms, it broke the model into larger sections or leaves of data, as opposed to sluggishly drawing out many little polygons at a time. When Carmack read this, something clicked. What if you could use a BSP to create not just one 3-D image but an entire virtual world?

No one had tried this. No one, it seemed, had even *thought* about this because, after all, not many people were in the business of creating virtual worlds. With BSPs, the image of a room in Doom would be essentially split up into a giant tree of leaves. Rather than trying to draw the whole tree every time the player moved, the computer would draw only the leaves he was facing. Once this process was implemented, Doom, already fast, soared.

To keep Doom's development going, however, Carmack, Romero, and the rest knew they had to deal with one pressing problem: replacing Tom Hall. As a friend, of course, Tom was irreplaceable, particularly for Romero. There was just no one who possessed that hysterically comic streak. Worse, the split from id was so painful that Romero and Tom had hardly spoken since the firing. But at least Tom had managed to land on his feet. Scott Miller, another casualty on the way to id's success, offered him a job as a game designer for Apogee. It was bittersweet, but Tom accepted; maybe now he would be able to make the games he had always imagined.

Back at id, the guys started sifting through résumés for a new game designer of their own. Kevin had received a résumé from a promising-looking gamer named Sandy Petersen. At thirty-seven years old, Sandy was ancient compared with the id guys and an admirable veteran of the gaming scene. In the early eighties, he had created a pen-and-paper role-playing game, Call of Cthulhu, that featured flesh-eating zombies and tentacle-legged alien parasites. The game became a cult favorite around the world, selling over a hundred thousand copies. Eventually, Sandy went on to create computer games at MicroProse, a company in Baltimore founded by Sid Meier, legendary designer of the historically based strategy series Civilization.

But Romero had a concern about Sandy. At the bottom of Sandy's résumé, he noted that he was Mormon. "Dude," Romero told Kevin, "I don't want anyone who's religious here. We're fucking writing a game about demons and hell and shit, and the last thing we need is someone who's going to be against it."

"Nah," Kevin said. "Let's just meet him, he might be really cool."

Romero sighed. "Okay, dude, but I wouldn't do it."

Several days later, Sandy showed up. He was a heavyset, balding guy with glasses and suspenders. He had a rapid-fire, high-pitched voice that got more excited as he spoke about games. Encouraged, Romero sat him down in front of a computer to see how he could put together a makeshift level of Doom. Within minutes Sandy was drawing what seemed like a mess of lines on screen. "Um," Romero said, "what are you doing here?"

"Well," Sandy chirped speedily, "I'm going to have you come through here and this wall's going to open up behind you and the monster's going to come through it and you're going down this way and I'm going to turn the lights off and all this stuff . . ."

All right, Romero thought, this guy's getting it like—bam! With Sandy on board as id's game designer, Romero would be free to do all the different things he enjoyed—programming, making sounds, creating levels, overseeing business deals.

Sandy was given an offer, but he told Jay he needed more money to support his family. Later that day Carmack approached him and said, "The stuff you've done is really good. I like your work, and I think you'd be good in the company." The next day Carmack stopped him in the hall again. "When I said your work was good," he said, "that was before I knew that you'd asked Jay for more money. So I don't want you to think I told you your work was good in an attempt to get you to ask for less money. Mmm." Then he walked off. It seemed to Sandy like a weird thing to say, as if Carmack thought that he could cajole him out of wanting a higher salary. He doesn't know anything about how humans think or feel, Sandy thought.

It didn't take long for Romero to appreciate Sandy's speed, sense of design, and encyclopedic knowledge of games. Sandy regaled him about the payback a player should receive when blasting the lungs out

of a demon with the shotgun. "You really should get rewarded on several levels," he said. "You hear the gun go off, you see the big, manly guy cocking his shotgun, you see the bad guy go flying backwards, or an explosion. It's always you're rewarded for doing the right thing!"

Romero couldn't agree more, adding how, in addition to all that, there would be like tons of blood flying out from the beasts. They had a good laugh. Romero decided to probe the religious issues. "So," he said, "you're Mormon?"

"Yep," Sandy replied.

"Well," Romero said with a chuckle, "at least you're like not a Mormon that keeps pumping out tons of kids and stuff."

Sandy stopped typing. "Actually, I've got five kids."

"Oh, okay," Romero stammered. "But that's not like *ten* or anything. But you know five's a lot but, um, at least you're not a really *hardcore* card-carrying Mormon."

"Oh, I got my Mormon card right here!" Sandy pulled it out.

"Well, at least you don't wear those garments and stuff, right?"

Sandy lifted his shirt. "Got my garments on right here!"

"Okay, okay," Romero said, "I'm going to shut up."

"Look," Sandy said, "don't worry. I have no problems with the demons in the game. They're just cartoons. And, anyway," he added, smiling, "*they're* the bad guys."

While id refined Doom in September 1993, two sons of a preacher from Spokane named Rand and Robyn Scott released Myst, a literary adventure computer game on CD-ROM. The game became an instant phenomenon, topping the computer game charts and eventually selling more than 4 million copies. It also popularized the burgeoning new format of CD-ROM. With the rise of CD-ROM drives on home computers, this spacious format (which could store hundreds of times more data than floppy disks) was becoming the "it" software for game developers. The extra space afforded better sound and even full-motion video—effects exploited in a horror CD-ROM game called 7th Guest, another chart topper.

Shot in a photorealistic manner, Myst set players on a mysterious abandoned island, where they were to explore strange rooms and machines and unlock the secret of their inventor, a man named Atrus. Like Doom, Myst unfolded from a first-person point of view. But in Myst, players didn't run or, for that matter, crawl. They just slowly flowed; clicking a space or item before them would gracefully fade one setting into the next. "Its brilliantly designed and rendered 3-D images," *Wired* magazine raved, "and its funhouse world of mazes, puzzles, and human intrigues will certainly set a new standard for this type of adventure game."

Id hated Myst. It had none of the elements they liked: no real-time interaction, no pace, no fear, no action. If Myst was like Shakespeare, Doom was going to be Stephen King. With Carmack's engine in gear, the rest of the team buckled down on finished elements of the game. Adrian and Kevin churned out dark, demonic art. They drew guys impaled, twitching on stakes (like the impaled farmer Adrian had seen at the hospital long ago), blood-spattered corpses chained to walls. The death animations were more elaborate than ever: monsters stumbling with their skulls ripped open, the Baron of Hell slumping forward with his intestines spilling onto the floor.

The weapons were falling into place: the shotgun, the pistol, the chain saw, a rocket launcher, and the affectionately named BFG, Big Fucking Gun. In Wolfenstein, if the player lost a gun, it would be replaced with the default weapon, a knife. In Doom, the player would be left to duke it out with his bare fists. They digitized Kevin's hand, slugging punches against a blue screen. The killer weapons and monsters needed suitably killer sounds. The guys signed Bobby Prince up again to record the audio. Under Romero's guidance, Bobby gave Doom a techno metal–style soundtrack. A puree of animal groans were used for the game's beasts.

With the guns and monsters and gore, Sandy and Romero went to town on the levels. Romero had found his voice in Doom. He loved everything about the game, the speed, the fear, the suspense, and he tried to play it all up. Romero's levels were deliberately paced. As level designer, he was responsible for not only designing the architecture of

the environments but also choosing where to put monsters, weapons, bonus items and objects; it was like being a theater director and haunted-mansion creator all in one.

Romero relished the roles. In a level of his, a player might run into a room and see a window leading outside but wouldn't know how to get there. So the player would run down a room, music pumping, looking for a way. A door would slide open and *Boom!* there'd be a howling Imp. Blast that monster down, run down a brown spotted corridor, open another door, and *Blam!* another herd of beasts. Romero had a knack for staging the battles, letting the player win one small round, then pummeling him with a storm of enemies.

While Romero was raw and brutal, Sandy was cerebral and strategic. One level was littered with green barrels that, when shot, would explode. Sandy made levels in which the only way to kill a monster was to shoot a barrel at the perfect moment. His levels were not nearly as aesthetically pleasing as Romero's; in fact, some of the id guys thought they were downright ugly; but they were undeniably fun and fiendish. They complemented Romero's well.

By the fall of 1993, the pressure was on as gamers began to clamor for Doom. A demonstration for the press leaked out onto the Internet, despite id's best efforts. Small groups of die-hard fans began calling the id office or sending desperate e-mails for information. But the mainstream press didn't seem to know or, for that matter, care. A community television program did a piece on the guys, filming them at work playing games, but that was about it. Calling the big papers and magazines, Jay found, was fruitless.

Instead, Jay—determined to make id's business style as innovative as its games—focused on setting up the company's distribution and marketing. He established a toll-free number to field orders and set up a deal with a fulfillment house. Since they were self-publishing Doom, they would be getting twice the earnings they had on Wolfenstein. Games distributed through the regular retail channels would bleed cash to middlemen. Every time someone bought a game at CompUSA, the retailer would take money, then pay the distributor, the distributor would take money, then pay the publisher, the publisher would take money, then pay the developer. By going shareware, id was cutting

them all out, taking eighty-five cents for every dollar sold; the game would be listed at around forty dollars. Jay figured Doom, like Wolfenstein, would rely on word of mouth. While big guns like Nintendo were spending millions on marketing and advertising, id would take out only one small ad in a gaming magazine for Doom. The goal, then, was to get the Doom shareware into as many hands as possible.

At the time, retail stores were selling shareware disks and being forced, by the authors, to cough up a high royalty. Id, which had made some of the most successful shareware games yet, had a different approach: give the Doom shareware to retailers for free, no fee, no royalty, and let them keep all the profits from the sale. The more shareware was distributed, the more potential customers id would be able to collect.

"We don't care if you make money off this shareware demo," Jay told the retailers. "Move it! Move it in mass quantities!" The retailers couldn't believe their ears—no one had ever told them *not* to pay royalties. But Jay was insistent. Take Doom for nothing, keep the profit! My goal is distribution. Doom is going to be Wolfenstein on steroids, and I want it far and wide! I want you to stack Doom deep! In fact, I want you to do advertising for it too, because you're going to make money off it. So take this money that you might have given me in royalties and use it to advertise the fact that you're selling Doom." Jay got plenty of takers.

The buzz around Wolfenstein and Doom brought back old characters. Al Vekovius contacted the boys to see if they wanted to rerelease some of their old Softdisk games. The company, he told them, was having trouble recovering since their departure. They turned him down. More notably, the game turned out Romero's stepfather, John Schuneman. On a trip to Dallas, Schuneman sat across the table from Romero at a dinner at Outback Steakhouse and, for the first time, opened his heart. "You know, I've been a bear sometimes," he said, "but I'm a man, and I remember telling you if you were going to make your mark you had to do business applications. Well, I want you to know that I'm man enough to admit that I was wrong. I think this is great. And I want you to know I was wrong."

Romero accepted the apology. Times were moving on, and there

was no reason to hold a grudge. Doom was about to be finished. The best was yet to come.

If was Halloween 1993, and Romero was inside Doom. He stood in a small room with gray walls stained in brown sludge, staring down the barrel of his pistol. An ominous, deep synthesizer chord buzzed, giving way to the eerie plucking of a guitar and, finally, a death-rattle drumbeat. A shotgun lay on the floor. Romero ran forward, grabbing it and storming through a door that slid open to the ceiling. The snarls resounded from everywhere—hideous snorts and belches and groans. Suddenly there were fireballs, big, red, explosive bursts hurling in flames through the air. He had to act fast.

Romero spun once, unleashing his shotgun blast into the chest of a Former Human, who went flying back in a spray of blood. A fireball sailed into Romero's side, bleeding his vision red until he could hear himself wheezing and panting. Another blast, Romero spun. But he couldn't see anything. A blast again, more wheezing. A shadowy beast the color of television static hurled forward. Romero fired once to no avail. Then he saw the barrels, two green heaps of waste. The beast was heading right for them. At the perfect moment, Romero fired into the barrel, leaving the monster in a bloody pile of gibs.

A door opened—the one in Romero's office. Romero snuck a peek over his shoulder and kept playing as Carmack walked in. Carmack liked what he saw on screen. Romero had a real sense of grandeur, he thought, the way his levels were so diverse, so varied in elevation, so deep. He made his technology sing.

"What's up?" Romero asked.

Carmack told him that he had enough stuff done to be able to get to the networking part of Doom. Oh yeah, Romero thought, *the networking.* They had mentioned this in their press release in January, the fact that Doom would have a multiplayer component, which would let players compete with and against each other. But after all the other work, the networking had become almost an afterthought. Carmack told Romero about what he thought were somewhat mod-

est technical challenges. "So what I have to do is write the setup stuff to figure out how to communicate over the IPX properly," he said, "and getting the serial stuff going may be a little bit of work . . ."

Romero nodded as Carmack spoke. How incredible networking would be, he mused. There had been other games that let players compete head-to-head: side-by-side fighting games like Street Fighter II and this new game called Mortal Kombat were already the rage. And there were seemingly ancient games like the multiplayer colonization game M.U.L.E, or Multiple Use Labor Element, and the early *Star Trek*–inspired modem-to-modem game, NetTrek. But there had been nothing like a multiplayer Doom—first-person, fast-action, immersive, bloody. Romero's heart raced.

He nailed the key on his keyboard and ran through the level on his screen, E1M7, or, Episode 1, Map 7. He came to an area down one hall that had a long window opening up to an outside platform oozing with green plasma. Romero imagined two players shooting rockets at each other, their missiles sailing across the screen. Oh my God, he thought, no one has ever seen that in a game. Sure, it was fun to shoot monsters, but ultimately these were soulless creatures controlled by a computer. Now gamers could play against spontaneous human beings—opponents who could think and strategize and scream. *We can kill each other!*

"If we can get this done," Romero said, "this is going to be the fucking coolest game that the planet Earth has ever fucking seen in its entire history!"

Carmack couldn't have said it better himself.

Within two weeks, Carmack had two computers networked to each other in his office. One represented his first-person point of view, the other represented the other player's. On cue, he hit the button on his keyboard; his character moved forward on the computer in front of him. He pictured the little packets of data traveling across the network line flowing into the computer across his office, translating instantly into the space marines on screen. The computers were talking to each other. And Carmack knew the result. He glanced over at the computer

to the right and saw his character, now represented in third-person, running across that screen. He had made a consensual virtual world, and it was alive.

Romero flipped when he came into the office. "Oh my God," he screamed, "that is sooooo awesome!" He dashed back into his office, and Carmack started the game again, this time with Romero connected from his own machine. Romero watched as the space marine Carmack controlled ran down a hall. Romero chased after him, unleashing a shot from his gun—*boom!*—sending Carmack flying back through the air in a spray of blood and screams. "Suck it down!" Romero cried.

Soon everyone in the company was taking turns in multiplayer mode, chasing each other, hurling off explosions. The office filled with screams, not just digital screams, but real screams, human screams. It was an arena, and they were all in it, competing, running, escaping, killing. They began playing one-on-one matches as well, keeping score manually to see who racked up the most kills. And that was not all, Romero realized. Since they could have four people in a game at one time, why not have them playing cooperatively, moving through a level of monsters as a team? Carmack said it was possible. Romero couldn't contain himself. "Don't tell me you can have a four-people co-op game in here mowing through the monsters?" He gasped. "That is the shit!"

Romero paced. This was big—bigger than the Dangerous Dave moment, bigger than anything he'd seen. He made his way down the hall, the yelps and screams coming from inside the rooms. There was Adrian, twitching and convulsing as he played against Kevin and Carmack and Jay. What *was* this? Romero thought. It was like a match, like a boxing match, but the object wasn't just to knock the other guy out or some wimpy shit like that. This was, like, kill the guy! This was a match to the death. He stopped cold. "This," he said, "is deathmatch."

By the first week of December 1993, the work on Doom was hurting to a close. People had stopped going home, choosing instead to sleep on the couch, the floor, under desks, in chairs. Dave Taylor, hired to help with supplementary programming, had developed quite a reputation for passing out on the floor. But it wasn't happening just because he

was tired, he said. Doom was having some kind of greater effect on him, some *biological* effect. The longer he played, the faster he cruised through the streaming corridors, the more his head would spin. After a few minutes, he would have to lay down on the floor to steady himself. Sometimes, he'd just end up falling asleep. It got to be such a frequent display that, late one night, the rest of the guys took a roll of masking tape and taped a body outline around him.

The pressure mounted as they felt the game approach completion. Random gamers began calling the office and leaving messages like "Is it done yet?" or "Hurry up, motherfuckers!" Others spewed resentment at id for not meeting its originally promised release date of the third quarter of 1993. "You started posting hype about Doom several months ago," one gamer posted on an online newsgroup. "You've been encouraging [us] to go ballistic over how great Doom is going to be. And you've told a *lot* of people that the third quarter of 93 was the date. Now all that anticipation is going to backlash in a massive spurt of flames and ranting against id."

Some posted more forgiving tales of anticipatory dreams based on early screenshots released of Doom. "I was firing the shotgun at a pixelated (yes, my dream was pixelated) demon," wrote one gamer, "when my alarm clock went off (well, it turned the radio on :) . . . Time to schedule an appointment with a local shrink. I can't imagine what shape I'll be in once the game is actually released :)."

Another wrote a poem called "The Night Before Doom": "Twas the night before *Doom*, / and all through the house, / I had set up my multi-playing networks, / each with a mouse. / The networks were strung, / with extra special care / in hopes that *Doom*, / soon would be there." The publisher of a computer magazine had a darker vision he printed in an editorial called "A Parent's Nightmare Before Christmas": "By the time your kids are tucked in and dreaming of sugar plums, they may have seen the latest in sensational computer games . . . Doom."

On Friday, December 10, it was finally Doom time. After working for thirty straight hours testing the game for bugs, id was ready to upload the game to the Internet. A sympathetic computer administrator at the University of Wisconsin, Parkside, named David Datta volun-

teered to let id upload the Doom shareware to a file transfer site he maintained on the school's network. It was a good deal. The university, like most, had high-speed bandwidth for the time, which meant it could accommodate more users. The plan was that id would upload the shareware on cue, then the gamers could download it and transfer it around the world. So much for high-priced distribution. The gamers would do all the work for id themselves. Jay had announced the day before in the chat rooms that Doom would be available at the stroke of midnight on December 10.

As the midnight hour approached, the id guys gathered around Jay's computer. The office was littered with the debris of Doom's creation. Adrian and Kevin's clay models sat on the shelves. Heaps of broken chairs and keyboards were strewn on the floor. A busted garbage can crumpled in the corner. The taped outline of Dave Taylor's body collected dust bunnies on the floor. Jay had the Doom file ready to go.

Online, the Wisconsin file transfer protocol (FTP) site teemed with gamers. Though there was no way for them to communicate through a discussion board or chat room, they had ingeniously found another way to talk. The system had a means that allowed a person to create and name a file that would join another list of files on screen. Someone got the bright idea to talk simply by creating a file and assigning a name like "WHEN IS DOOM" or "WE ARE WAITING." Hundreds more waited in a special channel of Internet Relay Chat (through which people could have real-time discussions in text), where Jay was dropping clues about Doom's coming arrival.

Finally, the clock struck midnight. They would have to wait no more. Jay hit the button to upload it to the world. Everyone in the office cheered. But Jay was silent. He sat wrinkling his forehead and tapping his keyboard. There was a problem. The University of Wisconsin FTP site could accommodate only 125 people at any given moment. Apparently, 125 gamers were waiting online. Id couldn't get on.

Jay phoned David Datta in Wisconsin and hatched a plan. David would extend the number of possible users so Jay could upload Doom to the machine. And he would stay on the phone with Jay to tell him the precise moment, so Jay could be sure to get on. Everyone waited. They could hear the guy typing on the other end of the phone. Then he

cleared his throat. Jay's finger hovered over the upload key. "Okay," David said, "now!" But Jay still couldn't get on.

Jay booted up the chat channel, which was filled with gamers. "Look," he typed to them, "I'm sorry, but we have to kick you all off of the Wisconsin site because I can't get this uploaded. And your choices are either I kick you all off and I get this done. Or it doesn't get uploaded at all." They scurried off. Jay hit the button one last time and connected. Doom was finally on its way out.

Elated but exhausted, the team said their good-byes and went home for their first good night's sleep in months. Only Jay stayed behind to watch the game finish uploading. After a half hour, the final bit of Doom data made its way to Wisconsin. The moment it did, ten thousand gamers swamped the site. The weight of their requests was too much. The University of Wisconsin's computer network buckled. David Datta's computer crashed.

"Oh my God," he stammered to Jay over the phone. "I've never seen anything like this."

Neither had the world.

The Doom
Generation

Like a lot of parents in 1993, Bill Andersen knew exactly what his nine-year-old son wanted for Christmas: Mortal Kombat. The home version of the violent arcade fighting game was the hottest thing going, eclipsing even Street Fighter II with over 6.5 million sales. Andersen lamented about the game to his boss, an ambitious Democratic senator from Connecticut named Joseph Lieberman. Senator Lieberman listened intently to his chief of staff. He wanted to see the game for himself.

Mortal Kombat defied his imagination. Secret moves let players rip the spines from their opponents in gushes of blood on screen. More distressing to the senator, gamers seemed to *prefer* the brutality; the more graphically gory version of Mortal Kombat for the Sega Genesis home video game system was outselling a blood-free version for the Super Nintendo Entertainment System three to one. The success of the Sega version had dealt a staggering blow to Nintendo, which had demanded that the developer of the game, Acclaim, remove the controversial "death moves" to adhere to the company's family values. By choosing to release the blood-and-guts version, Sega became the new must-have

system, racking up nearly 15 million units in sales. Nintendo's squeaky clean perch, for the first time in the industry's history, was gone.

And this wasn't the only such game. Senator Lieberman came across Night Trap, a big-budget title for the new Sega system that included live-action footage of scantily clad sorority girls—including one portrayed by Dana Plato, former child star on the TV show *Diff'rent Strokes*—being attacked by vampires. Violent films like *Reservoir Dogs* and *Terminator 2* had conquered Hollywood; now an edgier, more aggressive video game age seemed to be dawning too. On December 1, 1993, Senator Lieberman called a press conference to blow the whistle.

Beside him sat Democratic senator Herb Kohl of Wisconsin, chairperson of the Subcommittee on Juvenile Justice and chair of the Subcommittee on Government Regulation and Information. Senator Lieberman was also joined by a somber Captain Kangaroo, the children's television host Bob Keeshan. Kohl said, "The days of Lincoln Logs and Matchbox cars" had been replaced by "video games complete with screams of pain [that] are enough to give adults nightmares." Keeshan warned of "the lessons learned by a child as an active participant in violence-oriented video games . . . lessons the thinking parent would shun like a plague. Indeed it could become a plague upon their house." He urged game developers to "understand their role in a nurturing society."

Senator Lieberman took it as a call to arms. "After watching these violent video games," he said, "I personally believe it is irresponsible for some in the video game industry to produce them. I wish we could ban them."

This wasn't the first time that America's political and moral establishment had tried to save youth from their own burgeoning culture. Shortly after the Civil War, religious leaders assailed pulp novels as "Satan's efficient agents to advance his kingdom by destroying the young." In the twenties, motion pictures were viewed as the new corrupter of children, inspiring sensational media-effects research that would be cited for decades. In the fifties, Elvis was shown only from the waist up on television; *MAD* magazine's publisher, William Gaines, was brought before Congress. In the seventies, Dungeons and Drag-

ons, with all its demons and sorcery, became associated with Satanism, particularly after a player enacting the game disappeared under the steam tunnels of a Michigan university. In the eighties, heavy metal artists like Judas Priest and Ozzy Osbourne were sued for allegedly invoking young listeners to commit suicide. In the nineties, video games were the new rock 'n' roll—dangerous and uncontrolled.

This sentiment was a long time coming. The roots were in the thirties, when pinball arcades were thought to be havens for hoodlums and gamblers. New York City mayor Fiorello La Guardia placed a ban on pinball that lasted until the mid-seventies. By then the controversial arcade game Death Race, which featured players driving over pedestrianlike stick figures, had made headlines. As the golden age of arcade and home video games exploded into a $6 billion industry in the early eighties, concerns over the potential ill effects on children exploded.

In 1982 the national Parent Teacher Association issued a statement decrying game arcades. "The PTA is concerned over the increasing number of video game sites which may have an adverse effect on many of the young people who frequent such establishments. . . . Initial studies have shown that game sites are often in close proximity to schools. In many cases there is not adequate control of access by school-age children during school hours, which compounds the problem of school absenteeism and truancy. Where little or no supervision exists, drugselling, drug use, drinking, gambling, increased gang activities and other such behaviors may be seen."

Cities including Mesquite, Texas; Bradley, Illinois; and Snellville, Georgia, began to restrict or ban access to arcades. "Children are putting their book fees, lunch money, and all the quarters they can get their hands on into these machines," said Bradley's mayor in 1982 after he saw "hundreds of teenagers smoking marijuana in a video arcade in a nearby town." Though the Supreme Court overturned the bans following the Mesquite incident, countries including Malaysia, the Philippines, Singapore, and Indonesia not only banned video games but shut down arcades.

The media began to stoke the flames with headlines like "Video Games—Fun or Serious Threat?" in U.S. News & World Report and

"Video Game Fever—Peril or Payoff for the Computer Generation" in Children's Health. "The video game craze," said the newscaster Robert MacNeil on PBS, "is it warping young minds or educating them for the future?"

Scientists, academics, and various pundits struggled to come up with the answers. C. Everett Koop, the U.S. surgeon general, fired a sensational salvo when he stated that video games were causing "aberrations in childhood behavior. Children are into the games body and soul—everything is zapping the enemy. Children get to the point where they see another child being molested by a third child, they just sit back."

Newsweek reported on others following suit: "Dr. Nicholas Pott, who treats two such patients at a clinic at North General-Joint Disease Hospital in New York, says disturbed youths may dodge reality and human contacts as well as meteorites. The clinic director, Dr. Hal Fishkin, objects to the repeated kill-or-be-killed theme. 'We don't need more fodder for the violence mill,' he says. Others worry about subliminal messages that the medium may transmit. 'The more you can titillate your emotions, the less tolerant and patient you are going to be for things that don't deliver as fast,' says Fred Williams, professor of communications at the University of Southern California."

Despite the assertions, not all academics found substantiation for the damaging effects of video games. "There is no evidence to indicate that the games encourage social isolation, anger, antisocial behavior, and compulsivity," concluded the Journal of Psychology. Sherry Turkle, a sociologist at the Massachusetts Institute of Technology, praised video games' ability to provide encouragement to emotionally disturbed or retarded children. "A lot of kids who are good at this are not good at other things," she said. "This mastery experience is very important." But when the video game industry bloated and crashed in 1983, so did the rhetoric—for the time being.

Ten years later, on the morning of Thursday, December 9, 1993, Senator Lieberman reignited the cause with the first federal hearings on violent video games. The hearings were filled with impassioned statements by expert witnesses who decried the new scourge. Dr. Eu-

gene Provenzo, a professor who authored a book called *Video Kids: Making Sense of Nintendo*, proclaimed that "video games are overwhelmingly violent, sexist, and racist." Robert Chase, president of the National Education Association, suggested that games incite real-life violence. "Because they are active rather than passive, [video games] can do more than desensitize impressionable children to violence," he said. "They actually encourage violence as the resolution of first resort by rewarding participants for killing one's opponents in the most grisly ways imaginable."

Later, Howard Lincoln, the executive vice president of Nintendo of America, and William White, vice president of marketing and communications for Sega of America, took their brawl over Mortal Kombat to the stage. Lincoln portrayed Nintendo as the martyred defender of family values. White argued that the industry was simply growing up, with more and more games being played by people over the age of eighteen. Lincoln bristled at that notion. "I can't sit here and allow you to be told that somehow the video game business has been transformed today from children to adults," he said to the panel. "It hasn't been."

After much debate and media fanfare, the hearings ended at 1:52 P.M. on December 9. Senator Lieberman declared that the video game industry had one year to develop some kind of voluntary ratings system or the government would step in with its own council. He would call a follow-up meeting in February to determine how the publishers and developers were coming along. The gamers had been warned. It was time to change their ways.

The next day, id Software released Doom.

Two hundred feet under Waxahachie, Texas, inside the U.S. Department of Energy's Superconducting Super Collider Laboratory, Bob Mustaine flew back in his chair. The government man was terrified. He wasn't the only one. Across the room, his colleagues also twitched and screamed. This had become a daily occurrence at lunchtime. In all their days studying particle physics at the country's most ambitious research facility, they had never seen anything quite as shocking as the fireballs erupting on their computer screens. Nothing—not even the multibil-

lion-dollar subatomic shower of colliding protons—blew them away like Doom.

Several states away, in Fort Wayne, Indiana, a crowd of students convulsed in the computer lab of Taylor University. Brian Eiserloh, a gifted math student who worked as the lab supervisor, had once again unlocked the doors earlier that night to let the mob of gamers in. The lab, like most around the country, sported the fastest computers available. As a result, he and the other computer enthusiasts had been skipping sleep, class, and food to sit in front of their PCs playing the game. As programmers, they were awed by the graphics, the speed, the three-dimensional views. And as regular dudes, they had never chased each other down with shotguns before. "Oh my God!" Brian exclaimed, checking the clock. "It's seven A.M. again!" That semester, Brian, previously an A student, would get all F's.

A few thousand miles away, Nine Inch Nails' rock star Trent Reznor sauntered off a concert stage as the crowd roared. Security guards rushed to his side. Screaming groupies pushed backstage. Trent nodded and waved, heading back through the crowd. He didn't have time for this. There were more important things waiting. He stepped onto his tour bus, forsaking the drugs, the beer, the women, for the computer awaiting him. It was time again for Doom.

Scenes like these had spread around the world since the game crashed the University of Wisconsin's network on December 10. Without an ad campaign, without marketing or advance hype from the mainstream media, Doom became an overnight phenomenon in an on-line domain that, as fate would have it, was simultaneously beginning to explode.

Though a global network of computers had been around since the 1970s—when the U.S. government's Defense Advanced Research Projects Agency, or DARPA, linked networks of computers (the DARPAnet and, later, the Internet) together around the world—it was just starting to seep into the mainstream. This evolution began in 1989, when a computer researcher in Europe named Tim Berners-Lee wrote a program that linked information on the Internet into what was called the World Wide Web. Four years later, in 1993, two University of Illinois hackers named Marc Andreessen and Eric Bina created and re-

leased Mosaic: a free "browser" program that transformed the Web's unseemly data into more easily digestible, magazinelike pages of graphics and text. With this new user friendliness online, commercial services such as CompuServe and America Online helped court the masses. Among the earliest pioneers, not surprisingly, were gamers—the same ones who had been on online discussion groups and bulletin board systems like Software Creations for years. And all of them, it seemed, wanted to play Doom.

Schools, corporations, and government facilities blessed with fast computers, high-speed modems and, most important, people familiar enough to make them work were overtaken by the game—sometimes literally. Over the first weekend of Doom's release, computer networks slowed to a crawl from all the people playing and downloading the game. Eager gamers flooded America Online. "It was a mob scene the night Doom came out," said Debbie Rogers, forum leader of AOL's game section. "If we weren't on the other side of a phone line, there would have been bodily harm."

Hours after the game was released, Carnegie-Mellon's computer systems administrator posted a notice online saying, "Since today's release of Doom, we have discovered [that the game is] bringing the campus network to a halt. . . . Computing Services asks that all Doom players please do *not* play Doom in network-mode. Use of Doom in network-mode causes serious degradation of performance for the player's network and during this time of finals, network use is already at its peak. We may be forced to disconnect the PCs of those who are playing the game in network-mode. Again, please do *not* play Doom in network-mode."

Intel banned the game after it found its system swamped. Texas A&M erased it from its computer servers. Doom was such a problem that a computer lab supervisor at the University of Louisville created a special software to remedy the problem. "People sprint in here falling all over each other to play the game," he said, "[so] we have a nice little program that goes through the system and deletes Doom."

Early reviews echoed the gamers' glee. *PC Week* called Doom a "3-D tour de force." *Compute* said it signaled a new era in computer

gaming: "The once-dull PC now bursts with power: . . . For the first time, arcade games are hot on the PC. . . the floodgates are now open." Others expressed a mix of shock and allure at the game's unprecedented gore and brutality. "The follow-up to Wolfenstein 3-D is even more brilliant, but even more disgusting," wrote a reviewer for *The Guardian* of London. "This is not a game for children or anyone sensitive to violence." As another explained, "This game is so intense, and so genuinely frightening that the deeper you venture into these shadowy chambers the closer your nose gets to the screen—an indication, I believe, of how much you, the player, enter this adventure game's other reality." Despite the pleas of his wife, the reviewer couldn't keep himself away; Doom was, he confessed, a "cyberopiate."

It was also a cash cow. The day after Doom's release, id saw profit. Even though only an estimated 1 percent of people who downloaded shareware bought the remaining game, $100,000 worth of orders were rolling in every day. Id had once joked in a press release that they expected Doom to be "the number one cause of decreased productivity in businesses around the world." The prophecy was true everywhere, it seemed, including their own.

"food night, monkey!" Romero yelled. "You better fucking hop down! Fuck you, motherfucker! Suck it down!" Shawn Green hunched over his computer at id, his sweaty hand twitching his mouse as this barrage of insults screamed through the wall. Ostensibly Shawn had been hired to handle tech support for Doom, but it wasn't long before a more demanding job—sparring partner—took over. With the bordering office, he was regularly challenged by Romero—the ultimate gamer: the Surgeon, as Tom Hall had christened him back in the Wolfenstein days—to a round of Doom deathmatch. Shawn had quickly subsumed and surpassed Tom's role as Romero's sidekick and gaming pal. And now, to his shock, he was paying the price.

"Come on, monkey fuck!" Romero screamed, pounding his fist on the wall. "Who's your fucking daddy? Let's go!" Shawn checked his watch. It was 8:00 P.M. again. Holy shit! he thought. Another day

wasted playing deathmatch. The games with Romero were taking over everything—work time, playtime, mealtime, bedtime. And now Romero was turning this into a deranged sport, hurling insults like a trash-talking jock after school. The most aggressive thing people usually did when they played video games was roll their eyes. But Doom, Shawn realized, called for something more. After winning the next round, he punched the wall back and screamed, "Eat that, motherfucker!" Romero cackled approvingly. This was how games were meant to be played.

The violent revelry was not limited to Romero. Office destruction was even more a part of daily life. Keyboards smashed against tables. Old monitors crashed into the floor. The influx of sample America Online disks and computer sound cards ended up embedded like Chinese throwing stars in the walls. One day even Carmack joined in the action.

This happened after Romero accidentally locked himself in his office. Hearing the pleas, Carmack gave the knob a twist, paused, then deduced the most obvious and immediate solution. "You know," he said, "I do have a battle-ax in my office." Carmack had recently paid five thousand dollars for the custom-made weapon—a razor-edged hatchet like something out of Dungeons and Dragons. As the other guys gathered around chanting, "Battle-ax! Battle-ax! Battle-ax!" Carmack chopped Romero free. The splintered door remained in the hall for months.

Id was on a high. Though Doom had not penetrated the mainstream like Mortal Kombat or Myst, it was the hottest game in the computer underworld since, well, Wolfenstein and Keen. The guys at id were the indisputable rulers of the shareware market, heading toward a year of multimillion-dollar earnings. And that, they soon discovered, was just the beginning. With the help of a New Yorker named Ron Chaimowitz, they were going to conquer retail.

Like the id guys, Ron had hustled his way into the computer industry. Short, balding, and in his forties, he entered the entertainment business by launching the industry's first Hispanic record label in Miami in the eighties. His big coup was to sign an up-and-coming bar mitzvah band called Gloria Estefan and the Miami Sound Machine. He

also broke Julio Iglesias in the United States. Naming his company Good Times, he pursued the emerging market for home videos with low-priced, twenty-nine-minute workout tapes starring Jane Fonda. This product landed him a big deal with the Wal-Mart chain, whose executives urged him to explore what they thought was another virgin marketplace: budget computer software. Ron expanded his company into Good Times Interactive, or GTI.

Good Times Interactive first published a Richard Simmons "Deal-A-Meal" CD-ROM and a Fabio screensaver. But that was hardly enough to fill Wal-Mart's shelves, so Ron went looking into the computer game world. At first he cut deals with well-known publishers like Electronic Arts and Broderbund to repackage previously released games that had outlived their shelf life. What would be more lucrative, he realized, would be to publish his own budget games. To do this, he needed budget developers—untapped by the Electronic Arts of the world. He found them in shareware.

Shareware makers were like a farm league, he thought. He just needed to find the right team to release a retail product. Id Software, he discovered, had done gangbusters with Wolfenstein 3-D and now was causing an even greater firestorm underground with Doom. Yet Doom, to his amazement, had no retail representation. Ron had found his next Gloria Estefan.

After flying to Texas to meet with the young millionaires at id, he was surprised to find a group of long-haired kids in shorts. The office was trashed with broken computer parts, rancid pizza boxes, and an artillery of crushed soda cans. But these appearances belied a true business savvy, Ron quickly learned. After he gave the guys the big pitch about his company and his exclusive deal to shelve 2,200 Wal-Mart stores, id played it cool. The guys knew that by selling shareware they were able to eliminate all middlemen and get full dollar value for their product. Furthermore, after the lackluster performance of the Spear of Destiny retail game, they weren't about to throw the shareware model away. Why, they wanted to know, did they need GTI?

Ron didn't relent. "Look," he said, "maybe you'll sell a hundred thousand copies of Doom in shareware, but I believe if you give me a

retail version of Doom and, let's call it for lack of a better term, Doom II, I think I could sell five hundred thousand or more units," Id remained unmoved. Ron went back to New York but returned to Texas two more times to plead his case. Finally, they told him their terms. If they were going to do retail, they didn't want to be treated like ordinary developers. They wanted complete creative control. They wanted to own their intellectual property. And they wanted to be featured prominently on all the merchandise so that people would know the game was coming not from GT1 but from id. Ron agreed and committed to a marketing budget of $2 million for Doom II. Two million dollars was more than id had spent to develop *all* its games combined. Doom, despite its success, was still relegated to the computer underground. Doom II, which they started working on immediately, would take them mainstream.

For id, Doom II also fit into the now established and unique formula of putting out a retail product based on a shareware release, just as they had done following Commander Keen and Wolfenstein 3-D. It was the best way to milk Carmack's new graphic engines for all they were worth. Doom II would simply be a new set of levels built with the original Doom engine. While the artists and level designers worked on the sequel, Carmack could be free to research his next great graphic engine.

With the influx of cash from Doom and the promise of Doom II, the guys didn't wait long to start spending their money. They were philanthropic. Adrian bought his mother a new house in a safer neighborhood than where she had been living. Romero gave his car, a Cougar, to the manager of a local Mexican restaurant he frequented and paid for a Las Vegas vacation for his grandparents. Carmack bought $3,200 of computer equipment for his former computer teacher at Shawnee Mission East grade school. "I wanted to buy them things that will allow them to explore other areas," he said, "not just what's in books." He also put aside $100,000 to bail an old high school friend out of jail.

Mainly, though, the guys at id spent money on their cars. Kevin bought a Corvette. Adrian bought the Trans Am sports car he'd always wanted. Dave Taylor got an Acura NSX. (The guys even chipped in

and bought a new leather couch for the office so, in part, Dave could have something nice to pass out on next time he got what was now widely known as Doom-induced motion sickness.) Carmack and Romero themselves celebrated by going Ferrari shopping.

At a showroom, they admired a gleaming new Testarossa that listed at $90,000. Carmack was treating cars like he treated his games; he had already grown somewhat tired of his current engine. What he really wanted was one of these: "Oh my God," said Romero. "Holy shit! Now *that* is a car. That is fucking daddy car right there! Dude, I can't believe you're getting that car." Carmack paid cash for a red one to match his 328. Romero bought a "fly yellow" Testarossa for himself. They parked them side by side in id's lot—just in the right place so that, during work, they could gaze down at their ultimate machines.

But Carmack's Ferrari didn't stay in the lot for long. Within days he drove it over to Norwood Autocraft and started on the modifications—he wanted to get the car, which ran at four hundred horsepower, at least twice as strong. Bob Norwood, who had become Carmack's automotive mentor, had a master plan: to install a twin turbo system that would not just double but triple the car's horsepower. For added energy, they put in a computer-controlled device that would inject a burst of nitrous oxide. While Romero was enthralled enough by the pure aesthetics of the Ferrari, for Carmack the cars were now less means of a joyride than new engineering materials to be modified to his liking.

As the id guys soon discovered, Carmack wasn't the only gamer who liked getting under the hood.

"**Hey,**" Romero told Carmack one day at the office, "there's something you have to see." He booted up Doom—or at least what was *supposed* to be Doom—on his computer. Instead, the trumpeting theme of the *Star Wars* movie began to play. The screen filled with not Doom's familiar opening chamber but instead a small, steel-colored room. Romero hit the space bar, and a door slid open. "Stop that ship!" a voice commanded from within the game. Carmack watched as Romero jolted down the hall past bleeping droids, white Stormtroopers, laser guns,

the deep bellows of Darth Vader. Some hacker had completely altered Doom into a version of *Star Wars*. Wow, Carmack thought. This is gonna be great. We did the Right Thing after all.

The Right Thing was programming Doom in such a way that will-ful players could more easily create something like this: StarDoom, a modification, or mod, of their original game. It was an idea hatched after seeing the early modifications that players were creating for Wolfenstein 3-D. That small phenomenon had caught Carmack by sur-prise, even though he had long hacked games like Ultima himself. The Wolfenstein modifications were different, however, because players weren't just finding the code that they could change to increase their characters' health; instead, they were changing their characters alto-gether, replacing the bosses with Barney.

Though Carmack and Romero were intrigued and inspired by these actions, they were concerned over the destructive quality of the mods. Players had to erase the original Wolfenstein code and replace it with their own images; once a Nazi was changed into Barney, there was no way to bring the Nazi back quickly. For Doom, Carmack orga-nized the data so players could replace sound and graphics in a nonde-structive manner. He created a subsystem that separated the media data, called WADs (an acronym suggested by Tom Hall, it stood for Where's All the Data?), from the main program. Every time someone booted up the game, the program would look for the WAD file of sounds and images to load in. This way, someone could simply point the main program to a *different* WAD without damaging the original contents. Carmack would also upload the source code for the Doom level-editing and utilities program so that the hackers could have the proper tools with which to create new stuff for the game.

This was a radical idea not only for games but for any media. It was as if a Nirvana CD came with tools to let listeners dub their own voices for Kurt Cobain's or a Rocky video let viewers excise every cranny of Philadelphia for ancient Rome. Though there had been some level-editing programs released in the past, no programmer—let alone *owner*—of a company had released the guts of what made his proprietary program tick. Gamers would not have access to Carmack's graphical engine, but the stuff he was making available was more than just subtly

giving them the keys. It was not only a gracious move but an ideologi-cal one—a leftist gesture that empowered the people and, in turn, loos-ened the grip of corporations. Carmack was no longer a boy dreaming of computers in his Kansas City bedroom; he was the twenty-three-year-old owner of a multimillion-dollar company, and he could do what-ever the fuck he wanted. He could live the Hacker Ethic big time.

It wasn't a popular way to rule. With the exception of Romero, the only other hacker-minded programmer at id, Carmack's generosity caused much consternation at the company—especially among the more conservative-minded businessmen, like Jay and Kevin. "This is a *crazy* idea," Kevin said. "No one's ever given away their tools to make new content. And we have to worry about legal questions. What if someone takes our content and combines it with their product and re-leases it? What if someone takes all the content that's developed on the Internet and sells it on the shelf and suddenly we're competing with our own product?"

Carmack rolled his eyes. They didn't get this at all, he thought, be-cause they weren't programmers so they didn't *get* the hacker joy of it. They weren't really gamers either. They weren't part of the gaming community that was growing up there. To Carmack's appreciation, Ro-mero came loudly to his defense. "Dudes," Romero told the others, "we're not going to lose that much money. We're making a ton of money right now. Big deal. Who cares?"

Even before Doom was officially released, plenty of people cer-tainly did care about the ability to modify it. One group was so eager, they hacked the leaked alpha version of Doom. As the official release approached, Carmack had e-mailed the Wolfenstein mod makers about the new faculties in Doom. He didn't anticipate how far these gamers would go. In only a matter of weeks after Doom's release, hackers began releasing crude level or map-editing programs. These tools let players modify existing rooms of the game, say, adjusting walls, moving around floors, or making other minor adjustments.

On January 26, 1994, the hackers got all the more real. A student at the University of Canterbury in New Zealand named Brendon Wyber uploaded a free program called the Doom Editor Utility, or DEU. Wyber had created the program with the help of an interna-

tional online coalition of gamers who, through bone-breaking hack work, had found a way to break-apart Doom's code. Though Carmack had provided source code, he gave no clue of how actually to tear the goods apart. The DEU broke everything apart and explained how to make a level from the ground up. Soon a Belgian student named Raphael Quinet collaborated with Wyber to release a more readable version of the DEU, which hit the Net on February 16, 1994. "You can do almost anything to any level," they promised in the program, "move, add or remove monsters and powerups, change the wall colours and positions, create new lifts, doors, acid pools, crushing ceilings . . . or even create a new level from scratch!"

The DEU was a watershed. Suddenly, all those with the gumption could make a level of a game. They didn't need to be programmers or artists or anything. If they wanted they could just tweak what was there. Or they could dress it up, using their own sounds, images, ideas. There could be Doom Barneys, Doom Simpsons, Doom shopping malls, Doom subways. A University of Michigan student named Greg Lewis delved further into the netherworld of Doom code and created a program called DeHackEd. This software—also distributed for free— did the unthinkable by allowing a user to modify not the WADs containing the graphics, sounds, and levels but the very *core* of the game itself; known as the executable file. The executable contained all the technical information for how the game was played: how monsters behaved, how weapons fired, how text was displayed.

"DeHackEd is capable of heavily restructuring the way Doom works," Lewis wrote in the file describing his program. "Make fireballs invisible, make missiles do 2000 points of damage, make demons float! Edit the Ammo tables to help your struggling Marine with more ammo. Edit the Frame tables, and create new looking items, or extra-fast shooting weapons. And save your changes in patch files to distribute to your friends. Create new types of deathmatches, with plasma 'mines' and super-fast wimpy rockets. Wad developers can modify monster types to distribute with their levels . . . great new possibilities!"

Hacker tools for Doom became another means of immersion in what was already the most immersive game around. Doom immersed

players in a fast-action 3-D world. It immersed competitors in an arena of deathmatching where they could hunt each other down. The Doom mod tools immersed programmers as creators, as ones who could take this incredible world and sculpt it to their own divine desires. The game made them into little gods. Doom hackers began swapping their levels for free in forums on AOL, CompuServe, and across the Internet. Gamers who had been failing out of school because of deathmatching now had an even more addictive compulsion: hacking. They hacked all night. They hacked all day. They even hacked naked; at the Taylor University computer lab, gamers stripped down for regular "skinny-hacking" parties. Doom wasn't just a game, it was a culture.

And it was a culture that made the skeptics within id even more queasy. After much arguing in the company, Jay was granted permission to post legal terms for prospective Doom hackers. "Id Software requires no fees or royalties," he posted online. "You may require user payment for your work: Your utility *must* not work with the shareware version of Doom; You *must* represent that your utility is not an id Software product and id Software cannot and will not provide support for your product, nor for Doom after the data has been changed by your product; You may be required to include some *legal* text in your utility to make our lawyers happy; There may be more or some of the above may not be in the final document. It depends on my frame of mind at the time. :) . . . I am sorry to have to resort to the *post*," he concluded, "but . . . there is no other way to keep this process under control."

But control at id Software was all the more difficult to be found.

By the spring of 1994, id had a new answering machine message: "If you are calling to discuss some great idea you have on how you can make money with our product," it said, "please press five now."

As the Doom phenomenon grew, the big leagues began to take notice. Universal Pictures with Ivan Reitman, director of *Ghostbusters* and *Stripes*, optioned the rights for a Doom movie. Other companies, including George Lucas' LucasArts, began developing Doom-like games. Even Microsoft, the powerhouse of the industry, was en-

tranced; the company saw Doom as the perfect program to flaunt the bold new multimedia features of its upcoming operating system called Windows.

To show off Windows's potential, Microsoft enticed John Carmack to port a short demonstration of the game. The company ended up using the game at the Computer Game Developers Conference to promote the power of the platform. "Microsoft is committed to delivering top-notch multimedia functionality in Windows," said Brad Chase, a general manager of the personal operating systems division at Microsoft. He said games were one of the "largest, most important categories of multimedia applications."

Soon, however, many began to marvel at how id might make companies like Microsoft or IBM look obsolete. Id had taken the shareware phenomenon and transformed it into a recipe for addiction. Doom was so compelling that people just had to have the full dose. Some dubbed it "heroinware." Forbes magazine published a gushing article titled "Profits from the Underground" about how id, in fact, was making companies like Microsoft obsolete. "Privately held id Software doesn't release financials," it read, "but from what I can flush out about the company's profit margin, it makes Microsoft look like a second-rate cement company." The writer calculated that id's estimated $10 million in revenues would give them a profit margin that would rival Microsoft's. "What happens to this kind of business when the data superhighway arrives? . . .No sales force, no inventory costs, no royalties to Nintendo or Sega, no marketing costs, no advertising costs, no executive parking spaces. This is a new and exciting business model, not just for games, and not even just for software, but for a host of products and services that can be sold or delivered via an electronic underground."

The mainstream media picked up the ball. The New York Times, USA Today, and Variety—the movie industry's trade magazine—published articles about the business and cultural breakthroughs of Doom. Journalists came to Dallas to see who was behind the phenomenon and reveled in the idiosyncratic world of long-haired gamers and souped-up $200,000 Ferraris. Id wasn't just a company that made a killer game. It was the portent of something new, something unseen: rich, young, creative guys who were bucking all the sensible routes of traditional busi-

ness for this strange amorphous thing that, at the time, was not even widely known as the Internet. "Everyone is talking about the power of the information superhighway," Jay boasted to The Dallas Morning News. "We're the living proof." The industry needed a rock star, he realized; id was it.

Like any good rock stars, the company had an air of controversy. Because of the violence, China was considering banning Doom; Brazil, in fact, would later outlaw the game. Even Wal-Mart, which would be the major retail outlet for Doom II's release, was beginning to balk at the content. But just as Doom was becoming positioned as the next great scourge of violent games, a safety valve was pulled.

Since Senator Lieberman's federal hearings on game violence in December 1993, the industry had raced to find a response that would curtail the threat of government involvement. After another hearing in the spring of 1994, the result was the Interactive Digital Software Association: a trade organization representing all the major publishers joined for the purpose of self-regulation. By the fall of 1994, the IDSA had a voluntary system, the Entertainment Software Rating Board, which would assign ratings much as the movie industry did: T for Teen, M for Mature. The first game that would bear its mark would be Doom II.

Id not only escaped unscathed but found its bad-boy image further enhanced. The hearings had, ironically, heralded a new, meaner, more violent era in video games, and the gamers of the world couldn't get enough. Sega's Night Trap sold out around the country. With the ratings system in place, publishers felt freer to release edgier content. Even Nintendo joined in the party, making plans to release a version of Mortal Kombat II—gore and all. But no developer was positioned quite like id. Now, as the media and fans descended, all it needed was a face, someone they could pin their worship on. At id, there was no competition. When it came time for a lead singer of the band to emerge, John Romero wasn't only perfect, he was the only one who wanted the job.

"We're not worthy, we're not worthy, we're not worthy," the gamers chanted, bowing at Romero's feet. It was a scorching hot afternoon in Austin, Texas. Romero and Shawn Green were standing inside Austin

Virtual Gaming, a six-hundred-square-foot shop above a coffee shop on the main strip outside the University of Texas. Five Doom junkies from the school's zoology department and local high-tech companies had pooled their cash to open this place just a few weeks before. They figured they weren't the only ones in town hooked on id's demonic creation. So they networked a small fleet of personal computers with twenty-seven-inch screens and began charging gamers eight dollars per hour to deathmatch. The occasion this day was the game room's first official Doom tournament. And, to the elation of the few dozen gamers gathered around the red-pulsing monitors to play, Romero—one of the guys who *wrote the game!*—was here to fight.

Though few if any of the gamers had seen pictures of Romero, they figured he was the guy wearing the black T-shirt with the militaristic Doom logo on the front and the bold white words "Wrote It" on the back. The shirt was Romero's own modification. After id had printed up a bunch of promotional tees, he suggested they add the phrase "Wrote It" for their own. He even sent his mother a Doom shirt with the words "My Son Wrote It" on the back. (Carmack preferred his own favorite shirt—a yellow smiley face with a bloody bullet hole piercing the forehead.)

Romero had taken to wearing the "Wrote It" shirt everywhere—around the office, around town, around gaming conventions. The shirt had a Moses-like effect. Gamers would spot him in the shirt and do a celebrity double take, parting as he moved through the crowd. The brave few would venture forward with sweaty palms and shaky hands. It happened first outside a CompUSA when the clerk came sheepishly after Romero, who was getting into his yellow Testarossa, and asked for an autograph. Such displays were becoming a regular occurrence, especially when he donned the "Wrote It" shirt. Gamers began not only asking for autographs but literally falling to their knees and echoing the "we're not worthy!" refrain that *Saturday Night Live* characters Wayne and Garth bestowed upon rock royalty. The other guys at id couldn't believe it. In fact, they were embarrassed by it: *We aren't Metallica, we're gamers.*

But as the enigma around the company grew, the fans and media wanted more and more information about just who id *was.* In response,

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the guys created a news file that gamers could obtain by sending a message request or, in technical slang, "fingering" id's computers. They started posting regular updates about technical matters, but soon the news expanded into lifestyle, giving the skinny on, among other things, the status of Carmack's and Romero's Ferraris.

Fans began to build a sense of wonder about the company, which, as they discovered, was spilling over into real life. This was something new, as Jay described it—"nerd worship." And there was no one who liked being worshiped more than Romero. Not only had he printed up the shirts but he was starting to change his appearance, growing out his dark hair, wearing his contacts more often. But he didn't look at the bowing gamers as his minions. He saw them as his peers, his friends. Here were all these people, he thought as he looked down on their bowing skulls, who loved games as much as he did. As the Doom momentum built, after all, Romero was becoming as addicted to the game as his fans were. He and Shawn were now deathmatching on a regular basis, staying long into the night. When he wasn't playing Doom, Romero was talking about Doom. He was a regular attendant in the burgeoning Doom chat rooms and message boards and newsgroups, discussing the latest mods, deathmatch tourneys, and technical happenings. To the outside world, Romero *was* id.

This was as much the others' doing as it was his. The other owners had no interest in courting the fans or the press. Jay, id's "biz guy," did his share, but that came with the territory. When the press wanted to strut out one of the Doom gods, one of the guys who Wrote It, Romero fit the bill. And as Carmack, Adrian, and the rest readily acknowledged, Romero was *good* at it—funny, likable, bouncing off the walls with energy. He had been the company's biggest cheerleader from the moment he saw the Dangerous Dave in Copyright Infringement demo. When he hyped the company, it wasn't merely the hype of an owner, it was the hype of id's biggest fan.

The language of that hype was the language of deathmatch: confident to the point of egotism, inspired to the point of confrontation. Id was the ruler of the world, and Romero was quick to make everyone aware of just how great they were and how much greater they would become. "*The Plan,*" he posted online, "[is] to get the entire

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world running NeXTSTEP for development, get everyone connected on the Internet, and own a Testarossa TR512." Romero lashed out at the popular and emerging operating systems. "DOS blows. DOS-Extenders create developer *Hell. Windows sux.*"

By the time he showed up in Austin for the Doom deathmatch in the summer of 1994, Romero was exuding white-hot game-god heat. With the fans bowing, a reporter descended on him and asked why he had come to this tournament. Romero puffed out his chest and said, "So we can beat everybody!" Romero and Shawn found their seats while others played. It was silent except for the sounds of fingers rattling on keys. But all that changed as the id guys began to play.

Romero hurled a few shotgun blasts into an opponent and yelled, "Eat that, fucker!" The sheepish guy on the other computer looked up in fear. Shawn knew that look—the look of gamer who had never heard true, unbridled smack-talk, just like he'd been the first time he had heard Romero insult him during a game. But now Shawn was a pro and joined right in. "Suck it down, monkey fuck!" he called, after firing a few blasts from his BFG. The gamers cowered. They would learn.

Romero savored the long drive back to Dallas in his Ferrari. Life was good for the twenty-six-year-old. He had been beaten down by his father and stepfather, picked himself back up, and now, after all this time, finally arrived. He really was the Ace Programmer, the Future Rich Person. He had mended his relationship with his parents, who now had a new perspective on their son's wayward days at the arcades. He loved his new wife, Beth, and sons, Michael and Steven, who, though still in California, could proudly call him their dad. He had become the man he had envisioned all those years before.

One night back at the office, Romero decided to share his feeling of success. He stepped into Carmack's office to find his partner, as usual, sitting at his PC with a Diet Coke. Since Doom's release, Carmack had immersed himself in side projects: programming conversions or ports of Doom for other game platforms, including the Atari Jaguar and the new console from Sega. Id was getting good money for the gigs,

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$250,000 from Atari alone. But for Carmack it wasn't the cash that was intriguing, it was the opportunity to get back into the trenches. *This* was what he truly loved: the work, the rolling up of the sleeves, the challenging of his intellect. And he at least somewhat appreciated the rush of fortune and fame; on a recent trip home he told his father, the renowned Kansas City anchorman, that he would soon be as famous as he was. Like Romero, Carmack had found peace with his parents, who now admired and supported his work—his mother played Commander Keen in her spare time. He had even gone out on a few dates with a woman whose parents owned a Chinese restaurant he frequented. Still, he was spending the majority of his days and nights at id. Nothing pleased him quite like sharpening his chops with low-level programming work. He would need the skills, he knew, when he went off to create his next big game engine.

But while he had been here, he was beginning to notice, Romero was gone: deathmatching, doing interviews, corresponding with fans online. Something was changing; slipping away. And the work, Carmack thought, was beginning to suffer. Doom II was falling behind schedule. While Romero was out being the company rock star, the levels that he had promised to create were not getting done. In fact, the company was now relying on other level designers—Sandy Petersen and a new employee, American McGee—to get the majority of the levels done. Out of the thirty-two levels of Doom II, Carmack noted, only six were shaping up to be Romero's.

Romero had his explanation—the levels he made simply took more time. But Carmack suspected something else: Romero was losing his focus. In addition to the interviews and the deathmatching, Romero was now acting as executive producer on an upcoming game by Raven, the company they knew from Wisconsin. Romero had approached Carmack at one point with the idea to milk the Doom engine for all it was worth. "Let's make some more games using our technology," he said. "Let's get some stuff out there because we can get some money off of this. And Raven's a good group that would be perfect for licensing the engine and making a great game that we can publish." Carmack agreed but without enthusiasm. How much bigger did they need to get?

For Romero, though, it wasn't just about getting bigger, it was about fun. He loved playing games. He lived for playing games. And there was no game that was more fun than Doom. The deal with Raven would give him more games to play. This night in Carmack's office, Romero spelled out his new life code: It was time to enjoy id's accomplishments. No crunch mode. No more bloodshot nights. "No more death schedules," he happily said.

Carmack remained quiet. The cursor on his monitor pulsed. In the past, Romero would have stayed here by his side, experimenting with the engine on screen, testing bugs until the sun came up. Tonight, Carmack watched the guy in the "Wrote It" shirt walk out the door.

ELEVEN

Quake

veryone has unfulfilled dreams. Maybe the dreams are too costly or time-consuming: fly a plane, drive a race car. Maybe they're too far-out: fight an alien space war, stalk a vampire. Or maybe they're illegal: streak through the suburbs, hunt down the boss with a sawed-off shotgun. But the dreams are there, nonetheless, animating minds every day. This is why there is a multibillion-dollar industry that lets people explore these fantasies the best way technology allows. This is why there are video games.

Of course, video games don't let people really *live* their dreams. They let gamers live a developer's *simulation* of a dream. The action is digital. It's confined to a computer or a television or a handheld device. Players experience it through their eyes, ears, and fingertips. But when they're done careening down the Daytona Speedway or storming an interstellar military base, they feel as if they've really been somewhere, as if they've momentarily transcended their sac of fat and bones, their office politics, their mounting bills. Games let them escape, learn, recharge. Games are necessary.

This belief has existed since ancient Greece, when Plato said,