GAME DESIGN
From Blue Sky to Green Light

DEBORAH TODD
WITH A FOREWORD BY JON LANDAU
Game Design
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Deborah Todd
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For Jason
Acknowledgments

A book, like a game, is a collaborative process. It is only possible because of the stellar efforts of many. I owe a great deal of thanks, and have a very deep sense of gratitude, to the following people for their contributions to this book. To each of you, you know what you did, and I thank you immensely for it. It was great fun!

Jason Todd • Mike Hernacki • Corey Bridges • Jon Landau • Danielle Cane • Jill Marsal • Elisabeth James • Sandra Dijkstra • Kevin Jackson-Mead • Deanna Novak • Alice Peters • Rob Swigart • Danielle Trudeau • Jennifer Omholt • Ty Roberts • Ellen French • Paul Kreider • Karen Johnston • Lavelle Jones • Victoria Naramore • Tony Cox • Carlos Garcia • Richard Teel • Tom Disher • Chris Van Buren • Susan Maunders • Jenna Walden • Noah Walden • Justin Hayward • Charles Balas • Dennis Wixon • Curtis Wong • Ardice Faoro • Rudy Geronimo • Rob Huebner • Clyde Grossman • Bob Jacob • Matthew Karch • Denis Dyack • Noaka Feth • Noah Falstein • Hal Barwood • Annie Fox • David Fox • Ron Gilbert • Ken Goldstein • Roger Holzberg • Susan Cordell • Terry Borst • Susan Gerakaris • Sally Richards • Mark Mishkind • Conall Ryan • Madeline DiMaggio • Kathy Fong-Yoneda • Pamela Wallace • Mark Young • John Vorhaus • James Brightman • Lori Dolginoff • Matt Costello • Tim Willits • Wendy Zaas • Mark Lamia • Mike Mantarro • Adrian Wright • Mike Sellers • Riley Cooper • Tracy Fullerton • Dave Grossman • Dan Conners • Greg Land • Mary DeMarle • Tom Grega • Alex Rigopulos • Greg LoPiccolo • Jason Amone • Sandra Lim • Chris Ferriter • Joe Morrissey • Mike Mika • Chris Charla • Elizabeth Eggleson • Roger Eggleson • Drena Large • Sydney • Chan
A very special thank you with my deepest gratitude to all of the companies that provided confidential design documents, sketches, concept art, screenshots, and other images for Game Design.

To the individuals within these companies who made this happen, you know who you are—you rock.

Backbone Entertainment
Crystal Dynamics
Eidos Interactive
Foundation 9 Entertainment
Harmonix Music Systems
id Software
Multiverse
Nihilistic Software
Splash Damage
Telltale Games
Treyarch
Ubisoft
Wardog Studios
The Century of the Video Game

It’s been said that the motion picture was the quintessential twentieth-century form of entertainment. It is very possible that it will be said that the twenty-first century belonged to the video game.

Both art forms strive to deliver an immersive experience that breaks down the barrier between the medium and the audience. But the result of this immersion is very different for each medium. With film, greater immersion makes the experience *voyeuristic* because you’re always in third-person mode, watching. It’s critical that you identify with someone or something on screen, but you don’t control them. In games, though, greater immersion makes the experience *personal*. You control the action, you become a participant. It’s arguably a more powerful personal experience.

For both games and movies, technology is a critical component of creating an immersive experience. Working with James Cameron, I have a healthy respect for the role of technology in entertainment. In our case, we constantly challenge ourselves to find technologies that we can apply to stories, e.g., *Titanic* and *Avatar*, that could not otherwise have been told.

But the danger, in both movies and games, lies in confusing technology with content. For all the attention you can grab with special effects, if the movie is poorly written, or the game is poorly designed, all you’ll end up with is a good-looking (and expensive) flop. Let the technology enable you, but use it in service of the theme. I’ve learned that a successful movie must have a theme that’s bigger than the genre. You leave the plot and the effects in the theatre, but the theme you take with you. You think about it as you walk to your car. You talk with your friends about it the next day. And just maybe it opens up a new avenue of self-discovery. The same is true for a successful game: the theme is bigger than the game. That only happens with great game design.
Hence this book and Deborah Todd. Deb is uniquely qualified to guide you through this topic. She’s not just an entertainment-industry veteran—she’s a veteran of two entertainment industries: Hollywood and video games. Throughout her career, Deb’s constantly innovated new ways to deliver entertainment through gameplay. Along the way, she’s targeted almost every conceivable demographic with almost every kind of property: from preschoolers to teens to CAD engineers, with original concepts and licensed franchises, from engaging educational content to pure entertainment. And from the start, she’s spoken and written about the right ways to marry technology and entertainment to create great games.

As you immerse yourself in this industry, you’ll find it both challenging and rewarding. It’s a wide-open frontier, but Deb can guide you only so far; so always be thinking of new ways to create engaging, cutting-edge entertainment that makes a lasting impression on your audience. This is where hard work meets heady fun. It’s where your collaboration with a team results in something that’s far greater than the sum of its parts. Keep your wits and your will, and you’ll be able to tell your grandkids that you were there at the start, helping make this the century of the video game.

—Jon Landau

Jon Landau is an Academy Award®-winning producer and COO of Lightstorm Entertainment, Inc. In addition to producing James Cameron’s Titanic, Landau is the former Executive Vice President of Feature Film Production at Twentieth Century Fox. Landau and James Cameron are on the board of advisors for The Multiverse Network, Inc., which is building the world’s leading network of massively multiplayer online games (MMOGs) and 3D virtual worlds.
Chapter 1
The Games Industry in All Its Glory

“I can’t find Joe anywhere, but you guys have to come look at this thing in the kitchen!”

—Chris Charla, Executive Producer, Development, Foundation 9
Searching for lead designer Joe Morrissey and instead finding a giant Snickers bar

So you want to be a game designer? Well, the good news for you is that it takes a lot of people to make a game. And the even better news is that this industry is huge—it surpassed Hollywood in terms of megabucks years ago, and depending on whom you ask, it is now a $40 billion-a-year industry (or at the very least will be by 2008, 2009, or 2010). So things are good. And they’re looking up!


More and more the industry is looking at designing games that will hook people who have never played before and are now suddenly hot to try them. Adult people. Business people. Professional people. Then there are the little people—children, who constitute an evergreen market that sees new game players getting into the mix every year and new potential game players being born every year. All in all, there is a whole lot of gaming going on.

1 In 2003, Compiler, “A monthly magazine for technologists worldwide,” ran the headline “Global Gaming Industry Now a Whopping $35 Billion Market,” and declared “gaming is now a mass-market form of entertainment, and no longer something that is enjoyed solely by computer ‘geeks’…” This by the magazine written for, uh, what was that again? Oh yeah, technologists worldwide, a.k.a. computer geeks.

2 In September 2004, an article about the conditions of working in the industry was published online by Builder AU, and declared this a $40 billion industry. The Sydney Morning Herald tells us on September 7, 2006, that this is a $40 billion industry. The Aussies at least are consistent.

3 BBC News Worldwide.

4 According to Western Knight Center for Specialized Journalism.

5 That would be the prediction of Slate Magazine. By 2011, according to a GameSpot article on the analyst predictions from DFC Intelligence, the industry will be at $44 billion.
And so it is. Big industry. Growing market. Increased need for content. That’s where you come in.

**Do What You Love…**

Switch gears with me for a moment to May 7, 2006, when an article appeared in the *New York Times* entitled “A Star is Made: The Birth-Month Soccer Anomaly.” A Florida State University psychology professor named Anders Ericsson revealed his marvelous discovery, namely why the world’s best soccer players are born in the first three to six months of the year.

Stick with me. It’s pertinent to you.

More specifically, he and his colleagues discovered the magic secret to what makes someone really good at what they do. By running an experiment on memory with a person of only “average” memory, i.e., the ability to repeat a pattern of seven digits, Ericsson was able to increase their memory capacity to 20 numbers after 20 hours of training, and to more than 80 numbers after 200 hours of training.6

What Ericsson and his team ultimately discovered was that excellence on the soccer field comes not from birth date, but from the result of what the kids with those earlier birth dates were getting from their coaches. Since they were a little bit older, and had an edge on motor function, they had the inherent ability to play slightly better. This showed up looking like natural talent. And because they appeared more gifted, their coaches paid more attention to them and gave them more constant and directed feedback.

What Ericsson discovered was the concept of “deliberate practice,” which he defined as setting specific goals and getting immediate feedback on both technique and results.

And this is what you do when you play video games.

You have a goal. You start playing. You’re singularly focused on accomplishing your goal, and you keep playing no matter how many times you’re annihilated—you come back again and again, sharpening your skills and refining your gameplay, getting better and better until you’re killer at your game.

It’s now scientifically official, thanks to Ericsson’s work: practice does make perfect, if it’s deliberate practice and includes immediate feedback. This technique works extremely well for musicians, surgeons, and the aforementioned soccer players, to name a few. And it also works well for gamers. Obviously.

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6 How much time have you spent playing video games?
So how does that relate to you and your love of games and your burning desire to become a game designer? Ericsson’s research says it best. According to the article, Ericsson confirms that “When it comes to choosing a life path, you should do what you love—because if you don’t love it, you are unlikely to work hard enough to get very good.”

Understand what I am telling you. “When it comes to choosing a life path, you should do what you love…”

**Play as Work**

So you’ve just been given scientific backing to become a game designer. And now you want to know what it takes to actually do it.

There are some common skills that everyone I interviewed agreed are necessities. But first, let’s start with the trait that is universally cited as the most important if you want to get into game design: you have to love games.

Nice how that coincides with Ericsson’s findings.

Riley Cooper, lead developer at Crystal Dynamics in Menlo Park, California, shares this sentiment: “Most of us go into the industry because we love games.”

True love and passion for games are the *essential building blocks* for your career in the industry, akin to the kind of foundation you’d want for your house—solid and strong and able to withstand a 6.2 on the Richter scale. And I do mean the *essential* components. Because things can get pretty shaky when you’re trying to put together a title and get it out on time.

Remember, the good Dr. Ericsson said if you don’t love it, you’re not going to get very good at it. I’m here to tell you that if you’re not very good at it, the job *and* your teammates will eat you alive.

Or, to put it in the words of Mike Mika, studio head for Backbone Entertainment, “…shipping a game can break people.”

**Crunch Happens**

We’ve all heard stories of the companies that work their teams 15- to 20-hour days during “crunch.” And, yes, you’re on salary so, no, you don’t get more pay. You live like a sequestered juror, only you don’t get regular meal breaks, and you never know when your day is going to end.

Or, if you have a really good attitude about the whole thing, you can think of it as if you’re living in a Vegas casino—you’re stuck inside, you’re having fun, and you have absolutely no idea what time it is or what’s going on in the world at large.
Here’s a sample crunch routine:
You start out for work early in the morning when it’s still dark outside. Once you arrive at work you don’t get to leave the building during daylight hours, which means you are deprived of the natural elements and you never know if there’s been any sort of catastrophe in the real world.

I once worked on such a team, and after nearly three weeks straight of this craziness, a few of us decided we needed to take a walk in honest-to-god sunshine. We got about five blocks away when, literally from out of the blue, dark clouds descended and the skies opened up and drenched us. We had no idea that freaky weather involving spontaneous rainstorms was predicted. We did the only thing we could do—went back to work, wet clothes, soggy shoes, dripping hair and all. That’ll teach us not to appreciate fluorescent lighting.

And yet there’s more! In this surreal sequestered Vegas-esque day-for-night-and-night-for-day atmosphere, people you’ve never seen before (people who are free to come and go as they please) bring you food and drinks at seemingly random times throughout your sojourn so you’ll stay put and keep throwing your assets on the table. This can go on for weeks or, dread, months (in the above-mentioned case, we did it for six weeks).

But at some point every day, after hours of sun deprivation, natural-air deprivation, and being denied of the basic instinct to hunt down and buy your own food, you finally have to stop and sleep. If you’re lucky, you’ll get to leave the building and go home (or to your hotel) for a few hours (as opposed to collapsing on the floor in the corner to catch 40 winks, which is about all you’ll get on cement floors no matter how well they’re carpeted), only to discover that just as REM is starting to kick in it’s time once again to get up and go back into the abyss of artificial lighting, recycled climate-controlled air, and no contact with normal people. Just like in Vegas.

In the games industry, we all either (a) know someone who has lived/ worked through this or (b) have lived/worked through it ourselves.

“Probably the most esoteric thing, or potentially the least practical advice I can give is to make sure that you have a wide range of life experience and skills before getting into the games business, because the games business tends to be very confining, and defining of your lifestyle.

“The amount of hours that are required always makes people gasp when I tell them how many hours I work at certain periods in the project. During those periods, there’s what you would assume about the social life of anybody who works 90 hours plus-or-minus a week. That’s what I mean by defining. In this industry the time required can restrict other portions of your life, so as such you need to have a good sense for life outside of that line of work.

“There are a lot of folks who come in and work all hours of the night and come in on weekends. In the short term that might seem good for the project. But immediately I think that any project really benefits in the longer term from people going out on the weekends and not letting the project take over your entire life.

“It’s a tough one. I have a tough time with it, because I’m often wanting to come back in and do those tweaks and make something look just how I’d like. I’m always wanting to give it that extra little bit. But that means an extra hour. Or two. Or three.”

—Justin Hayward, Level Designer and Artist, Halo 3
Now for the Good News

Fortunately, companies are growing up. It’s no longer considered all that much fun to go through crunch after you’ve done it, oh, once. And game design is much more of a systematic process than it was in the early days of the industry, when companies were making it up as they went along and everybody had a wild enthusiasm for rolling up their sleeves and doing anything and everything it took to get the game out on time. It was great fun. And then enough was enough.

Today, game design is in large part becoming more of a well-tuned engine. Processes are in place. Teams are bigger. People have lives and they demand to live them. And budgets and schedules are much more thought out, precisely measured, and adhered to during development. Crunch still happens, but I hear it repeatedly—for the most part, as an industry, we’re getting better at making it manageable.

Beyond love and passion, there are other elements that surpass the initial enamored stage of “Wow, this is so cool and fun that I could spend the rest of my life doing it.” Because the truth of the matter is, if you want to work in the games industry the key word to keep in mind is “work.”

Riley Cooper discloses what he calls “a weird ironic truth about the industry.” You get into the business because of your passion for games, “but you work so much that it’s difficult to find time for other games. A lot of people will tell you they used to play games like crazy, and then when they got in the industry it stopped.”

And yet, he sees this trend as somewhat dissipating. “As the industry evolves, this is changing,” he says. “We crunch less and less because we develop smarter.”

Better systems mean less craziness around shipping.

What I Really Want to Do Is Design

Nearly every conversation with every game designer I’ve ever had about “when” they started working in the biz began like this: “I got into the industry in (pick a date), but really I was designing games all my life, from the time I was a little kid…”

Take, for instance, Hal Barwood, whose background in the movie business gave him a strong foundation for his career as a designer and writer, when he was lured to the games side by LucasArts in 1990.

“The practical advice I would give, if you have absolutely no experience in the games industry, is to work on mods. That’s a great way to get an idea if this is really something you want to do for a living, because many mod groups can be just as organized, with similar timetables, schedules, and politics as an actual production team. You get a real feeling for the structure that’s required to work in this business.”

—Justin Hayward
“Before I became interested in games and went to work in this business, I had been building video games for nearly ten years, and building paper games for myself for amusement since I was a kid.” Barwood’s first professional gig in games was on *Indiana Jones and the Fate of Atlantis*. “It was my first game at LucasArts, but by no means my first game,” says Barwood.

“I’m a self-taught assembly language programmer, and I did some games for the Apple II. My background is not in engineering or computer science. In particular, I had cut my teeth on doing long, elaborate adventure games. I built a game called *Space Snatchers* that was a tile-based action-adventure game where you’re a tiny character kidnapped by UFOs and held prisoner in a zoo and you have to get home by co-opting the aliens to help you. It was a one-man project, and it was really elaborate.”

So when Barwood went into the business professionally, he was primed for the adventures of Indy. He went on to do *Indiana Jones and the Infernal Machine*, *Rebel Assault II*, and many other games during his nearly 14-year tenure at Lucas.

And then there’s Noah Falstein, who started in the business in 1980 right out of college and has had a stellar career ever since. “It’s easy to point at when I started in the business professionally, but to some extent I was making games as a child, so it was a smooth transition to get paid to do it.

“One of the first ones I remember—a lot were war-inspired, liked military strategy games—one of the early ones I did was because I had seen the movie *Sink the Bismarck*. Because of this movie, I made a cardboard ship profile and sat it on the linoleum floor in the kitchen, and a cardboard airplane model with a slot cut into it, and I put coins in the slot and that would be the torpedo bombers, and there were different scores for hitting different parts of the ship.

“I’d play this with a friend of mine and we would get tired of taking turns, so I decided I would make an interceptor with marbles, and while one person tried to sink the ship the other got to try to defend it. Other games I made were pretty traditional board games. I made a really elaborate game once, much like *Empire* or one of my favorites, *Advance Wars* on DS, with simple rules to keep track of fuel and ammunition and stuff.”

Matt Costello also began creating games well before he achieved rock-star status for his breakout CD-ROM game *The 7th Guest*. “I really got started in college when I decided to more or less stop going to classes and stay up all
night playing board games. We played things like Monopoly and Risk, but we invented rules and changed things. I’d stay up till dawn, until the bread man came, playing Psycho Monopoly and Bizarre Risk.”

Chances are, everyone who designs games for a living started out making up their own games as a child. The difference is that we’ve seemed to keep this trait alive into adulthood.

Our industry “want ad” could read: *Creativity required. Apply outside the box.*

As a relatively new industry, I think we’re all relieved that we now have many people who have been in the biz for over a decade, and some masters who have more than 20 years under their belt. It’s our first glimpse at longevity. Finally. And it’s a very, very good thing.

We also now have people coming into game design who have been playing games almost their entire lives. It’s second nature to them now. There’s no learning curve. No fear of technology. They know what good games are. And they know it on a nearly cellular level.

So we now have a winning combination:

**Instinct + Intuition + Experience + Skill**

The next generation in game design is you. And according to the pros who are in the thick of it, a fundamental understanding of all of the elements discussed in this book is important to your game-design success.

All of the people on the team are also important to your career. And yes, I do mean all.\(^7\)

### The Team

When Rob Huebner, CEO of Nihilistic, started his company, it was with a group of 11 other guys who had all worked together on a little project at Lucas called *Star Wars Jedi Knight: Dark Forces II*. A blockbuster game. This team of superstars decided to form their own company to see if they could sell an idea for a game they wanted to make on their own.

“We had a couple of pages of design on paper, and it was primarily the strength of the team we had assembled from LucasArts that sold it,” says Huebner. “It was much easier, then, to start a team with no demo or tangible assets. We were lucky as far as that goes.”

Gone are the days when a handful of people can get together, jot down some ideas, and get a major publisher to back them. Now it takes a village

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\(^7\) And yes, that includes marketing.