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Preface

As a casino-game designer, former table-games manager for a distributor, and owner of my own game-design company, I've worked with countless casino-game designers, both new and veteran. In a sea of game submissions, I've consistently found widespread design errors and a general lack of knowledge impeding some fine original game ideas.

I've seen great game ideas not make it. I've also seen poor game ideas get too much good money thrown after bad, due to a lack of critical information, perhaps because no broad and essential resource, such as this book, was available.

Whether the reason came down to, "I should have known something at a certain point in order to succeed, but I didn't," or, "I wanted to know, but had no idea how or where to look," doesn't matter. The sad truth is that many, if not most, aspiring game designers are working on their projects in good faith, even passion, but also in pockets of ignorance, and paying excessively for it. To me, they seem to be stretched out along the same road, with blindfolds on, not knowing how to proceed or what turns to make, or whether to abandon or continue the journey.

If that's you, you've come to the right place.

I wrote this book primarily for the game designer, both aspiring and current. Anyone designing his or her first game needs every shred of information about the process, while the journeys of veterans could have progressed more smoothly and less expensively had there not been gaps in their knowledge.

The larger audience includes two industry groups: casino operators and casino-game manufacturers. Both must know what to look for in a game, how and why it was designed, and how it can be accurately projected to perform for them. Both frequently misjudge and misevaluate games, whether they're acquired from outside designers or developed in-house; they release and install a lot of duds, justifying them with, "Well, it's a game of numbers." This is true, but casinos and game manufacturers can afford to release way more flops than gems—in order to get to the latter. The kitchen-table game designer often can't afford a miss, having only one real shot at it.

Most casino table-game literature is geared toward how the player can gamble to minimize losses and maximize enjoyment. Authors such as Michael Shackleford, the Wizard of Odds, explain playing strategies backed by valid and factual math. Other books reveal advanced "advantage play" for professional gamblers and game-protection techniques for casino managers; the two factions face off in a graduate-level casino cat-and-mouse game.

Also available in small numbers are books that give general design advice outside of any in-depth development examinations and walk-through details for new games. This is what *The Essentials of Casino Game Design* specifically addresses: It reveals and comprehensively explains the whys and hows of game-design techniques and strategies in terms of the specific needs of the game being designed for the *real* drawing board. I not only introduce you, the prospective or current game designer, to the tools to use, but I also spell out how to properly use them and for which circumstances, in order to create the best casino table-game product with the greatest chance of success in the real world.

The list of table games that have appeared in live and approved casino play regardless of longevity or ultimate quality, and considering only the ones surveyed and reviewed at Shackleford's casino-game compendium website (wizardofodds.com), now consists of:

- 48 blackjack variants
- 74 poker variants
- 24 "alien" games (faro, red dog, Screw Your Neighbor, Zero, et al.)
- 26 Asian games
- 43 dice, wheel, tile, and other device-based games
- 13 keno-type games
- 14 "other" main/primary games
- 78 blackjack side bets
- 20 baccarat side bets

This totals approximately 340 separate table games prominent enough to be reviewed by Shackleford's site, many on just a good field trial alone, others being tagged as notable new games, all mixed in with the existing hits. Altogether, 930 games have been approved in the history of casino gambling in Nevada, of which just 16 were original legacy games grandfathered in from the start, such as craps, basic blackjack, roulette, etc.[1]

This leaves approximately 914 sponsored, proprietary, and inventor-attempted efforts. More people have climbed Mount Everest (about 4,000) than ever had their games installed for live play in the epicenter of gambling, Nevada. Perhaps 200 game designers made some headway, earning them back their investment, plus some profit, by achieving 40 or so "installs" (tables with actual player participation on the casino floors) in various niches, with a couple of dozen doing really well, meaning that about 700 games in the history of this gambling state crashed and burned. Who's ever heard of or played China Doll, Benny's Roulette, China Town, Bar-Boot Dice, Catalina Dice, Deluxe 21 Madness, Tommy's Way Pai Gow Jackpot, and the like, compared to games that we've all heard of and played, such as Ultimate Texas Hold 'em, Lucky Ladies, the craps Fire bet, Crazy 4 Poker, and Blackjack Switch?

The point is that the differences between Benny's Roulette

[1] See: gaming.nv.gov to access the Nevada list in Excel or PDF.

and Ultimate Texas Hold 'em are in the design effectiveness based on forethought, directed technique, and expert review—practices generally unknown to most wish-to-be designers operating in a trial-and-error vacuum. This is how you end up with something marginal that's destined to be shot down.

Furthermore, the gaming mathematician, patent attorney, and gaming-approval agent don't judge or critique the quality of your game idea or work. They simply provide you with the math report, the patent filing, and the field-trial date of your game, letting the market sort out your effort. They'll never say anything like, "Dude! This game is garbage! Don't waste your money." They'll instead tell you, "You'll have your math report/patent-filing receipt/field-trial confirmation by May 17"—along with the invoices declaring how much you owe them for services rendered. Gaming will tell you, "You might be approved after the field trial, based on how well it does." (In other words, "We'll see.") Also, be aware that your game may perform adequately enough for official gaming approval, but not well enough over the long haul for commercial success.

Then there's the table-games manager who's considering installing your game. He might be under pressure to put some new games on the floor or figure that if yours gets hot and shows some good numbers, a promotion won't be far behind, so he gives you a go the first time around. More commonly, he doesn't know the difference between false flash and true potential, no matter how valid the math report (or how pretty the artwork). Casino managers often don't know and are being honest when they tell you, "Call me when you get an install somewhere else." This is routine, especially from managers who've been burnt before. If your game does well somewhere else, he'll call you back wanting to pick it up (at which point you can offer him some special lease pricing in recognition of his earlier consideration). But again, even if he can't recognize a gem, he might inadvertently green-light one by luck, so you have to be ready with the real thing. In other words, if you play your cards right, *you do have a shot*.

Ultimately, though, provided your game proceeds past all earlier hurdles and gatekeepers, it's the gambler who makes the final call as to whether your game lives or dies. By the time the gambler sees it, all the technical challenges have been overcome, so if it works for the gambler, it'll now work for all involved.

The Essentials of Casino Game Design is the only manual in existence that shows you how to design, develop, market, and safeguard a new casino table game, so you can have your chance to hit the jackpot by getting it installed on the casino floor. I cover all the game-design areas, which are linked to development histories of, and solutions for, games that either made it into casinos or failed, with the reasons for one or the other dissected and explained.

In closing, let me say that I've tried my utmost to write a book that will provide you with a good foundation for game-design essentials, put you on a precise and detailed path to the table-game jackpot, and in the process be as entertaining as it is informative.

Let's get started.

CHAPTER 1

Why Take the Leap?

Why try to create a new game? Why sit at your kitchen table with a deck of cards and a cheap white tablecloth all marked up with a Sharpie to look like a casino game layout?

For most, the upside of success in this business is so alluring and satisfying that the game improvement they invent becomes the undertaking: Mount Everest is there; now watch me climb it.

For a few, it's precisely because the odds are so stacked against them that they take on a seemingly insurmountable task, perhaps if only to find that it is doable in the end. They reason, other people have done it, why not me?

Whatever your reason, if you take the leap, it has to be a commitment. The cocktail-napkin sketch of a great game idea is only the first step on the long hard road to the casino-floor Promised Land. By commitment, I'm referring to the usual Big Two: time and money.

While you don't spend all your time on it (in fact, you can see and evaluate your game better when you're not always immersed in it and leading a normal life in the meantime), you spend enough time to address all the issues I cover in this book, many of which you can't even imagine when you get started.

You're also willing to spend money, a lot more, possibly, than you initially might have thought (or you're prepared to try to secure backing from investors, whom you'll repay in good faith and gratitude). Game development isn't, as some believe, like screenwriting, where you need to invest only in script-formatting software, ink and paper, and a filing fee, so you can try and try again if at first you don't succeed. Here, you're paying

for mathematicians to run computer simulations of your game, lawyers to protect your intellectual property (IP), designers and graphic artists to assemble your game kit, travel, time off from work, and the like. Again, unlike a screenplay, you can't simply rewrite patent and math-laboratory work you've already paid for. A rejected script is a ream of paper and a learning experience. A field-trial result represents $20,000 by the time you're either accepted onto or pulled off of the casino floor.

Looking realistically at the upside, if your game does well after introduction and grows to, say, 100 installs (which is considerable, as it represents tens of thousands of gamblers playing your game), you can expect to make, via a distributor, $100 per table per month times 100 tables, or $10,000 a month, a cool $120,000 a year.

However, your chance of succeeding big after your first install is about 1-in-50. As explained in the Preface, the vast majority of new games seldom outperform the staples of the casino floor.

But a game that makes it to the floor has an expected value, or a current value from *possible* future earnings at this point, of $24,000. Here's how that's figured. A new game that's ultimately successful can expect to make $1.2 million for the inventor ($120,000 a year times a good 10-year run), but has only a 1-in-50 chance of hitting that jackpot. Hence, a game that makes it to "Live Day One" has an expected or potential value of 1/50 of $1.2 million, or $24,000. That's a $4,000 profit above the $20,000 spent to develop it, assuming an *efficient* game-design process.

A game that makes it six weeks to the end of its field trial (the minimum field-trial length, where a new game is examined in live performance by a gaming authority for its legal approval) or its six-week casino intro (where a field trial isn't needed as it's a simpler side bet or game variation) with good patronage is worth, perhaps, $100,000. This is because only one out of four brand new games genuinely looks promising six weeks or so in when scrutinized by the casino offering it to the players and industry analysts passing a "live-or-die" judgment on it. The vast

majority of new games are pulled by the casino for performing worse than what's already on that casino's floor. In this regard, a field trial or game introduction is a technical examination, not a commercial guarantee, as most games complete a field trial regardless of patronage and are later (and quickly) removed.

A new game that's removed is clearly unsuccessful, but it still might have some value. New games are often pulled for political reasons or because of some other one-off mitigating factor, such as a badly designed paytable, which is an easily fixable snafu. In other words, having a new game uninstalled is often, but not always, fatal. The powerhouse game of Three Card Poker was removed from Atlantic City in its early days (again, because of one bad paytable), but was quickly fixed and re-introduced to great success in Mississippi, to later dominate the gaming world.

A successful game has 50 or more installs two or three years down the road with only a few (say, 10%) removed, while still increasing its install numbers. *Now* your game has its big value. Examples of healthy games that have passed the test of time include Ultimate Texas Hold 'em, High Card Flush, EZ Baccarat, EZ Pai Gow, Blackjack Switch, and more recently DJ Wild, where four out of these six were designed by independent game designers, not gaming-industry execs. Every rock star was once in a garage band, not a staff studio musician.

So yes, it's doable.

Of course, the learning curve is steep. But if you take it seriously, work hard, and see it through, your expenses are essentially paid for, an even shot. It's the poor efforts, and the failure to recognize them, that are genuinely costly.

Looking realistically at the downside: You can bail out at the last moment, right before the full patent and math-laboratory expenses kick in, saving yourself $18,000 or so of the $20,000. In other words, you had a hobby that could have turned professional, you gave it a go, and you washed your hands of it before you blew the household finances and precipitated a divorce. The game might even look good in terms of its math, patent/IP

security, and artwork, but it might not play up to par and you see and admit that.

Knowing all this, you're probably asking if this is a reasonable, practical, or intelligent undertaking. My answer is: maybe. Perhaps it's not, but you might convince yourself that it is and you might be right. The proof, as always, is in the result. If you succeed, then certainly it was an intelligent and lucrative thing to do. But practically speaking, you're not really doing this to be reasonable and intelligent. Developing a casino table game from scratch is a definite gamble; you take it on to occupy yourself with something of interest at least and with an out-and-out passion at most. Either way, you have to be convinced in your reason, because if there's any hesitation in your leap, then you'll crash and burn. In this regard, it's about the shot at success via a prescribed process: If the process is done right and with a hunger to do it, a successful result is possible.

So now, ask yourself why you're undertaking a game design project. I can think of three reasons:

- Money. It'll feel so good to see my name on the front of a royalty check and signature on the back. It'll also be a kick to have a big bank balance.
- Status. I want to be a big shot in this arena, as very few people can join such an elite club. And I like the game-design conventions in Vegas.
- The casino games I play (or oversee, or deal) are missing some juice and I can isolate and define exactly what it is to bring about the needed improvement. In a nutshell, I can do it right—for the gamblers, as well as for myself.

I don't want to be a jerk over here and say that the first two reasons are wrong; they aren't. But the crux of game development boils down to reason number three. You're not an inventor unless you actually make something better, in this case, a casino game. And only if you have this notion in your heart will

your mind, hands, and feet follow suit, so to speak, by creating a better game within the finite realm of casino-pit real estate. So you shoot for making things better, because if you do, you'll then become the inventor you wish to be.

A more realistic way to think about your game's possible upside (if you're going to focus on that) is to reframe the question: "How much will I have to *spend* to get a game to the point in the process where I have a shot of seeing a return?"

The answer isn't pretty. The average cost for a first game design, where plenty of mistakes are made, is about $50,000. Subsequent games are about $20,000, because the game designer can work much more efficiently, knowing the process.

Also notice in reason number three is the clause: "and I can isolate and define exactly what [the improvement] is." This is key, as game design isn't random trial and error as much as it's working to discard the chaff and refine the true wheat into the porridge payoff with known technique and directed purpose. This is the main work: knowing the good from the bad in game-play "mechanisms." (Mechanism, as I use it throughout this book, is a specific and identifiable characteristic, feature, or gimmick of a casino table game. For example, in craps, the basic mechanism is the 7-out, versus making a point; in EZ Pai Gow Poker, the mechanism is the queen-high push; and in Blackjack Switch, the mechanism is a push when the dealer busts with 22.)

I can't tell you how many times I've been in the presence of wannabe game designers (some of whom are actually gaming executives) who have said, "Something's not right about this game. I know something's wrong …" snapping fingers near forehead, as if to pluck an answer out of thin air, "*but I don't know what the hell it is!* So let's mess around with it and see if we can find it!"

True, that's a starting point, but barely. It's the "messing around with it" approach that sends prospective game designers storming off in the wrong direction.

Messing around isn't the hard work successful game development entails. To sit around and randomly throw ideas

against the wall to see if anything sticks isn't a solution in game design, it's one hell of a waste of time. Rather, you have to be able to readily spot and isolate *exactly* what's wrong in order to fix it by knowing the tool kit. You'll need to grab onto steel handles, not straws, for any traction in this process. Learning about the tool kit is key, as opposed to just hacking away at it, which is how 99% of game designers do it, in my experience. This is the craft: Having effective game-review sessions requires you to know what to look for in a casino game, so you can fix what's wrong without breaking anything else in the process.

So you'll examine table games (especially your own) and run through a reasonably well-developed checklist, such as: a) hit frequency of the bet is wrong; b) dealer qualifier kicks in too frequently to provide the needed house edge; c) the side-bet structure too closely overlaps the main bet's structure; d) the game's defining mechanism, called the "humdinger," returns too little to the gambler in game-play action (also known as weak "juice" in terms of the game's premise); e) strategy is too complex or not obvious; and much more—all of which I cover in the following chapters; this is just the warm-up.

However, "d)" here, the defining mechanism or humdinger, is the starting and ending points, the *raison d'etre*, of what makes a new game *really* new and better. The humdinger isn't so much a gimmick, but the premise, the basis, the very foundation that makes the game new, improved, and worthwhile. It isn't any sort of new and improved game if it doesn't incorporate That Better Way.