

Westwood: The Building of a Legacy

“What became Dune II started out as a challenge I made for myself.”

– Brett Sperry

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As Will Wright, founder of Maxis and creator of the *Sim* game phenomenon, said in a presentation about game design, the realm of all video games can be visualized as existing in a game space. Successful games can be visualized as existing on a peak. Once a peak is discovered, other game designers will not venture far from these peaks, but rather cling tightly to them. Mr. Wright points out, however, that there are an infinite number of undiscovered peaks out there. Unfortunately, most game designers do not make the jump, and the majority of these peaks are left undiscovered. It is only on very rare occasions that a pioneer makes that leap into the game space in hopes of landing on a new peak. This case study will examine one such occurrence, when a designer made such a leap and found himself on one completely unexplored, unlimited, and completely astounding peak – a leap that changed the landscape of gaming forever.

This case history will explore how Westwood Studios contributed to the creation of the real-time strategy (RTS) genre through its pioneering game *Dune II: The Building of an Empire*. Although there have been several other RTS games from Westwood Studios, I have decided to focus on *Dune II* specifically, because it was in this project that Westwood Studios contributed most to the RTS genre and the future of computer gaming.

Background Information

The Founders

Growing up in Newington, Connecticut, Brett Sperry knew little about computers and computer games, but he did find himself constantly demonstrating his creativity and curiosity. In an interview with the online publication *Gamespot*, he recalled that “a

constant theme running through my life was creating and building, even at the age of four. I loved to create order in worlds, whether it be through train sets or building blocks.”

Upon graduating from high school, Sperry enrolled in Arizona State University, where he studied psychology and architecture. He never had any plans to create computer games as an adult, but his fascination with computers inevitably led him to his destiny:

I was always interested in computers in high school, but they were just going to be a hobby. You know, I had to go off to college to discover what I really wanted to do for a career. And even back in the high school days I was interested in game design, but purely as a hobby - something I'd toy around with at night.

In 1979, after Sperry finished college, his family moved to Las Vegas, where he began work at a very small educational software company. It was during a meeting at this company that Sperry met Louis Castle.

Castle's investiture into computer programming sprang from a very different fascination – art. As a student studying fine arts and computer science at the University of Nevada at Las Vegas, he found the computer to be his perfect medium for art. Castle recalls:

In art school, you find out pretty quickly that no matter what you come up with, some guy who died hundreds of years ago already did it. Creating fine art on computers, however, was this vast, uncharted territory.

To make ends meet, Castle used to his computer skills to work as a freelance programmer. During a meeting with other programmers, he met Sperry, and their friendship blossomed.

The Company

There was something very serendipitous about that fateful day in 1984 when Sperry and Castle had their chance encounter. What began as a seemingly trivial meeting to borrow a printer ended up as a partnership that would forever impact the world of computer gaming.

At the time in 1984, Louis Castle had signed up with Epyx to write a game called *Dragonfire*. Castle, who needed to make a printout for the publisher once the project was completed, asked Sperry if he could use his printer. Once Castle arrived at Sperry's home, the two began talking and Castle showed Sperry his work on a demo based on *Dragon's Lair*. Castle was able to create a scene that seemed three dimensional, when in fact it was 2D emulating 3D. It was at this point that Sperry realized his programming experience and Castle's artistic talent complemented each other quite well.

Shortly thereafter, Sperry convinced Castle that they should team up and form their own company. They initially named their venture Brelous Software, an amalgamation of both of their names. Quickly realizing that the name left a bad aftertaste, they soon abandoned it and decided on a new name: Westwood Associates. Explains Castle:

OK, so where did Westwood come from? Brett and I used to drive out to Westwood, California, all the time just to see movies, shop, and hang out in the cool coffee shops. But there were also lots of law firms in the city. It struck me that Westwood was the right name that was close to Hollywood, to youth culture because of the University of California at Los Angeles, and to business. Brett added the "Associates" because both of us were tired of working for people who knew nothing about our business and we wanted to work with people who shared our passion. We did not like being considered second class for being "employed." We felt being an associate was far better than an employee.

The duo went to Epyx and landed their first deal, for *The Temple of Apshai Trilogy*. It was a part of an existing game on the Macintosh platform. As a two person team, they lacked the financial resources and the programming experience to create their own game

from scratch. Their level of programming experience at that point is best illustrated by the fact that Castle had to read 1700 pages of *Inside Macintosh* before he could begin work on the project.

Acquisition

In the early 1990s Sperry and Castle were nearing completion of a game that would forever change the direction of Westwood Studios. Up until that point, Castle felt that their games were targeted only towards hard-core players. He recalls looking at the 8-bit Nintendo: “All these developers [were creating] great games with two buttons. Why did we need all these Shift-Alt combinations on the PC?” Their answer to this was *The Legend of Kyrandia*, an adventure game with a completely novel and extremely simple point-and-click interface. With this new game in hand, they approached Ken Williams at Sierra - who was at the time enjoying incredible success from their own *King's Quest* series of adventure games - in hopes that Sierra would publish *Kyrandia*. Recalls Sperry:

We gave him a demo of it, and we really thought it blew him away. Little did we know that Sierra had King's Quest V in development at the same time, using the company's own icon-driven interface. So after our demo, Ken shows us King's Quest V. You can only imagine what our faces looked like! It was a huge letdown moment.

While Sperry and Castle were recovering from their blow during the meeting, Ken quickly followed with a second one:

Still, Ken really liked what we showed him, and he actually asked Lou and me if we would be willing to sell Westwood to Sierra. I was taken aback by his question. Lou and I weren't really ready to sell the company. We wanted freedom and control. Screw that!

At the time, they really didn't think much of the offer and continued on their search for a publisher for *Kyrandia*. They eventually settled a deal with Virgin Interactive. It was here that Sperry casually mentioned to Martin Alper of Virgin that Sierra's Ken Williams

had made them a business offer. Martin, not one to be standing idle, said that he, too, wanted to make an offer for Westwood.

It was at this point that Sperry and Castle began seriously considered selling their company. They began to see the benefits of being bought by a larger, more established game developer/publisher. They had wanted to produce games that pushed multimedia and programming might to the very limits available. Selling out to such gaming powerhouses seemed like the perfect solution. As Castle recalls:

The bottom line for me was that I was tired of having to put so much of our retained earnings into a product beyond what a publisher would advance us. Basically, we were betting our home mortgages on each and every title. We did not make any huge mistakes, but it only would have taken one to do us in.

After much discussion with the two companies, the final decision was left to Sperry and Castle. Although Sierra offered more money for the sale of Westwood, Virgin promised more independence for Westwood. With that, the decision was quite easy to make, as Sperry recalls, “Virgin offered us complete creative freedom if we met financial goals; they put that in writing. Combine that with being taken off the hot seat personally, and I was sold.”

Indeed, that deal helped Westwood to become the company that Sperry and Castle truly wanted it to be, as illustrated by one of their first games together: *Dune II*. In 1990, Virgin had obtained the licensing rights in order to create a Dune game. The development was done by a company called Cryo Interactive Entertainment and was mostly a first-person adventure game based on the settings in the book, *Dune*, by Frank Herbert. The game was not very innovative, for game play was very tedious; nor was the game very

successful. Virgin decided to take another shot and this time handed the development to its newly acquired company, Westwood Studios.

The Game

Dune II is very loosely based on the series of books written by Frank Herbert. Like the first *Dune* game, the story-line takes place on the planet Arrakis – also known as Dune – where the most valuable commodity in the universe can be harvested – the spice Melange. That, however, is where the similarity between the first *Dune* game and *Dune II* ends.

The storyline of *Dune II* is as follows: Three different houses, or “races,” have arrived on the planet to fight for control of the planet: Atreides, Ordos, and Harkonnen. In *Dune II*, the player can choose to play as any of the three houses. Each of the three houses possesses unique characteristics as well as different strengths and weaknesses. Depending on the player’s personality or mood, he or she can opt to represent the “noble,” “insidious,” or “evil.”

The “Noble” Atreides



The Atreides home planet is called Caladan. It has a warm, calm climate and the lands are lush and green. The rich soils and mild weather combine to make it an agricultural planet. During recent centuries, industrial and technological growth has added to the prosperity

of the Atreides.

The Atrides have been a prominent power for thousands of years with a long tradition of being just administrators. Their people are loyal, hard working, and peaceful. The Atrides leaders are intelligent and noble and the Atrides have a great devotion towards duty. The Atrides were one of the first Houses to come to Arrakis and are well prepared for the conditions they will have to face.

The “Insidious” Ordos



to make their profits.

The home planet of the Ordos is a frigid ice-covered world. It is believed that the Ordos import their agricultural and technological goods from nearby star systems. Acting as traders and brokers, the Ordos produce no physical products, but instead rely upon their merchandising skills

The Ordos are represented by a group of wealthy families who banded together for greater security. The Ordos have little conscience and seem to gain strength through sabotage and terrorism. They are protected by their immense wealth, and their status as a great House is unaffected by their long history of deception.

This is the first *Dune* fans have seen of the Ordos, as they are not mentioned in the *Dune* books by Frank Herbert.

The “Evil” Harkonnen



House Harkonnen comes from the dark planet of Giedi Prime. They have spread across

the universe using evil tactics. The Harkonnens are a cruel people and can be ruthless towards both friend and foe in their pursuit for control of Dune.

House Harkonnen is the most savage House in the universe. The Harkonnens have a history of using violence and fear to achieve their objectives. Status for the Harkonnens is taken rather than given. If a Harkonnen soldier kills his commander, he assumes that position and is respected by all.

The Harkonnens have spent most of their time assembling a large military force and are by far the strongest force on Dune. They are very dangerous, as their main desire is to conquer the other Houses.

Goals

The goal of the game, as previously stated, is to ultimately gain control of the planet. This is accomplished by defeating each of the other houses and then the Emperor in multiple battles, or stages. In order to win a battle, the player needs to build up a base and an army. This must be done while harvesting the spice. This is how the player is able to “make money” to build more units. The player then uses his or her army to engage the enemy in a battle.

Game Interface

The interface is a mouse-based point-and-click console that is divided into several sections, from which the player can accomplish certain tasks.



The detailed map is the section of the interface that the player interacts with the most. Here he or she is able to observe all units and structures, as well as the actions being taken by each. Any unit visible on the detailed map can be selected; upon selection, the damage as well as actions that can be taken by the unit or structure will appear in the unit command window. For most units, the actions available are typically attack, move, retreat guard. Some specialized units, such as the harvester, have specialized unit commands, such as harvesting.

Game Design

Game Play

A typical game proceeds as follows. The player begins the mission with a simple construction yard, a few infantry units and a few light vehicles. The only portion of the map that is visible is the area that immediately surrounds the construction yard. In order to reveal the rest of the map, the player may send out units - either infantry or vehicles - to “scout out” the terrain.

The player’s first task is to build the most essential buildings that make up a functioning base. A windtrap is built to provide power to its buildings. Next, a refinery is built, which will allow the player to make more money. Then, an outpost is built, which activates the radar map. With these essentials, the player can begin to gather and build resources necessary to build an army.

The player can then allocate his or her resources to building up offensive and defensive forces. The primary way to fortify one’s base is to build walls and turrets, which attack enemy forces. In order to build up an offensive force, the player builds barracks and factories, which in turn train or manufacture combat units such as infantry or vehicles.

Throughout the game, the player engages the enemy for various reasons. Sometimes, the player is forced to fight the enemy solely for defensive reasons, such as if the enemy approaches the base for scouting purposes or to attack the base. More commonly, however, the player must fight the enemy in order to claim areas of the map with spice. There are only limited quantities of spice, which are typically located in very open parts of the map. This makes the harvester very vulnerable to enemy attacks. In order to get more spice, however, the player must protect such areas by sending out many fighting units.

Once the player feels that his army is large enough, he or she launches an attack against the enemy base. Successful battles require a sufficient amount of planning. For example, the most efficient way of destroying the enemy units is by creating certain formations of units based on their long range or short range capabilities. The level ends once one side has destroyed all units of the opposing side.

In subsequent levels, the player is given a wider variety of structures and units, and the opponent becomes correspondingly more difficult to defeat.

Strategic Depth

As mentioned above, *Dune II* has a great deal of strategic depth. A game is not won simply by creating the most units and attacking. *Dune II* requires strategies to be used against each of the enemies. Since the game is so open-ended, there is no single best way to beat any given level.

For example, one strategy, from the *Dune II FAQ*, is essentially to “starve” the enemy. This is accomplished by guarding all of the spice and destroying the enemy harvesters as they approach. Eventually, the enemy will run out of resources. At this point, the player can attack the enemy base. The enemy, depleted of all resources, will be unable to repair or rebuild any of units or structures under attack.

Another strategy that can be employed involves infiltration of the enemy’s resources. As soon as the game begins, the player builds up multiple barracks, and trains as many light infantry units as possible. The player does not worry about any defenses or a properly balanced army. The main concern is to train as many soldiers as quickly as possible. Once this is done, he or she sends every single unit towards the enemy’s construction yard. As expected, most of the units will die on the way. But if approximately

five units are able to make it inside the construction yard, the enemy base will be “captured.” At this point, since the enemy recognizes this structure as an “enemy,” its own units will proceed to destroy it. This leaves the enemy without a construction yard, thus leaving it without the ability to build any more structures. Defeating the enemy simply becomes a matter of destroying what the enemy has built up to this point.

In many ways, strategic planning in *Dune II* is very similar to real battlefield planning. Players are given the opportunity to plan out their own strategies. They are then able to execute it in the game, no matter how unnatural it seems. The computer then reacts accordingly, even though the player’s actions are not considered prior to the battle.

The Impact of Dune II

The Birth of a Genre

Few in the computer gaming community would disagree with the assertion that Westwood Studios has had the greatest effect on the real-time strategy genre, both in terms of its creation as well as its development. In fact, it was Brett Sperry himself who coined the term “real-time strategy:”

A lesser-known fact was the official genre naming that was going to be used to explain the game to the press and players. It wasn't until some time after the game was in development that I decided to call it 'real-time strategy'--it seems obvious now, but there was a lot of back and forth between calling it a 'real-time war game,' 'real-time war,' 'wargame,' or 'strategy game.' I was deeply concerned that words like 'strategy' and 'wargame' would keep many players from even trying this completely new game dynamic. Before 1992, wargames and strategy games were very much niche markets--with the exception of Sid Meier's work--so my fears were justified. But in the end, it was best to call it an 'RTS' because that is exactly what it was.

As any game that pioneers a new genre does, *Dune II* became a legacy for all future RTS games. The design elements of all subsequent RTS games – from Westwood’s own *Command & Conquer* series, to Blizzard’s *WarCraft* and *StarCraft* games, and others –

can be neatly traced back to *Dune II*. The basic interface, for example, in any given RTS game can be expected to be divided roughly into three sections: the detailed map, the radar map and the command bar; much like in *Dune II*. No matter what the story-line or setting is, each battle begins with the player having a few basic units, a simple construction yard of some sort, and a large, undiscovered map. The player must then explore the map, collect resources, build structures, and train units. Every single game also uses the concept of structure dependencies. That is, to produce harvesters and tanks, for example, you have to build a heavy factory. But to build a heavy factory, you need a light factory, etc.

Additionally, *Dune II* introduced the idea that different sides can have different units and weapons, another concept universally used in all modern-day RTS games. For example, the key weapon of House Atreides is the Sonic Tank, which none of the other houses have. But they each possess their own key units as well.

In creating *Dune II*, Westwood hit the Wrightian peak so accurately that it left all other game developers very little room to innovate. Over the years, RTS games have not expanded much beyond the programming content of *Dune II*. Thus, the success of all future RTS games can be attributed to *Dune II* as well.

The Technology

In order to make it feasible for a player to command large armies in real-time, it was necessary to program AI for each of the individual units. That is, once given a command to go somewhere or attack someone, the unit would need to execute the task dynamically without any additional input from the user. It would be much too tedious if the player needed to instruct each individual unit about how to get to its destination. This concept, known as pathfinding, was one of the many breakthroughs that programmer Joe

Bostic accomplished in the creation of *Dune II*. At the time, there was neither a pathfinding algorithm that was dynamic - possessing the ability to constantly recalculate a path due to a moving target - nor was there one that was efficient enough to be used by hundreds of units at the same time on the computers available at the time.

Joe Bostic has been highly celebrated in the programming communities for his contribution to pathfinding algorithms.

Business Impacts

The business effects of Westwood's creation of the RTS genre reach much farther and deeper than just those resulting from *Dune II*. The games that followed *Dune II*, such as *Command & Conquer*, have become successful enough to be listed in the *Guinness Book of World Records* as having sold the most copies out of any computer or video game in history.

In other countries, RTS games have had a significant economic impact. One such example is South Korea and its ubiquitous "PC bangs." A PC bang is much like an Internet Café in the United States, except it is devoted solely to online gaming ("bang" in Korean means "room"). These PC bangs are typically located where other commercial businesses are located, such as streets, malls, or large office buildings. PC bangs have anywhere from 30 to 500 high end computers all connected to a broadband Internet connection. In 1998, there were approximately 100 PC bangs. That number quickly mushroomed to over 15,000 PC bangs in 2001, mostly due to *StarCraft*. Estimates Douglas Kim, an ING Barings analyst in Seoul: "PC bangs took in about \$4 billion in revenue during the 2001 fiscal year."

Cultural Impacts

With RTS games so popular in countries such as South Korea, it is not very difficult to observe the impact that they have had on culture. To say that RTS games have become a social norm in South Korea would be an understatement. Idol, a popular Korean pop music group, sings about *StarCraft* in its albums. One of the group's music videos shows its two members playing a game of *StarCraft* to settle a dispute over a girl.

There is also a cable TV game channel in South Korea called *Game Broadband* that is solely devoted to gaming. It first gained popularity by broadcasting StarCraft matches between the highest-profile players in the country. The term "highest-profile" goes far beyond just the gaming community. The best gamers in Korea are commonly seen on regular television commercials for common consumer products such as Cheetos and instant noodles.

Dune II.I

For a game that is now by and large credited with revolutionizing the landscape of gaming, *Dune II* began with a very humble premise. Recalls Sperry, "What became *Dune II* started out as a challenge I made for myself." It is this that encapsulates the spirit of the gaming pioneer.

One can only speculate about what lies on the horizon for this revolutionary pair. Imagine a modified version of *Dune II*, with a new type of unit called "Sperry and Castle." Once this unit is trained, the player gives the duo a command - "stand guard," perhaps. But they do not. Completely oblivious to the player's orders, and even to the primary battle, the unit acts on its own. It immediately sets off on foot, leaving the safety of the base without any reinforcements. "Where are those two going?" the player shouts incredulously, as he

or she watches the unit wandering aimlessly. The pair's journey spans the corners of the map, revealing areas that the player would otherwise never have known or cared about.

The main battle will either be won or lost, but the outcome remains unknown and unimportant to this "Sperry and Castle," for they are far too busy exploring on their own. They are discovering things that the rest of the world, engrossed in everyday battles, rules, and conventional wisdom, will never know.

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