

What is a Game

Philosopher [Ludwig Wittgenstein](#) in the 1940s was the first to argue that elements of games, such as play, rules, and competition, all fail to adequately describe the totality of what games are and as a result leave a definition undefinable.

However [Bernard Suits's](#), in his 1974 book *The Grasshopper: Games, Life and Utopia*, asserts that Wittgenstein's view is nonsense and proceeds to give us a perfectly sensible analysis of playing a game as, to quote his summary statement, "*the voluntary attempt to overcome unnecessary obstacles.*" Suits not only argues that games can be meaningfully defined; he also suggests that playing games is a central part of the ideal of human existence, so games belong at the heart of any vision of Utopian society.

Computer game designer [Chris Crawford](#) (founder of The Journal of Computer Game Design), has attempted to define games using a series of five dichotomies or contrasting perspectives:

1. Creative expression is *art* if made for its own beauty, and *entertainment* if it is made for money.
2. A piece of *entertainment* is a *plaything* if it is interactive. Where interaction dynamically changes the rendering of the storyline. Consequently, movies and books are specifically cited as examples of non-interactive *entertainment*.
3. If no goals are associated with a *plaything*, it is a *toy*. (Crawford notes that by his definition, a toy can become a *game element* if the player must interact with it using *rules*, consequently he claims The Sims and SimCity are toys, not games.) If a *plaything* has discernible goals, it becomes a *challenge*.
4. If a *challenge* has no "active agent against whom you compete," it is a *puzzle*; if there is one, it is a *conflict*. (Crawford admits that this is a subjective test. Video games with noticeably algorithmic artificial intelligence can be played as *puzzles*; these, for example, include the patterns used to evade ghosts in Pac-Man.)
5. Finally, if the player can only outperform the opponent, but not attack them to interfere with their performance, the *conflict* is a *competition*. (Competitions include racing and figure skating.) However, if attacks are allowed, then the *conflict* qualifies as a *game*.

While many games rely on [emergent principles](#), video games commonly present simulated story worlds where emergent behavior occurs within the context of the game. The term "emergent narrative" has been used to describe how, in a simulated environment, storyline can be created simply by "what happens to the player." However, emergent behavior is not limited to sophisticated games. In general, any place where event-driven interface occurs emergent behavior will exist. For instance, take a racing game in which cars are programmed to avoid crashing, and they encounter an obstacle in the track: the cars might then maneuver to avoid the obstacle causing the cars behind them to slow and/or maneuver to accommodate the cars in front of them and the obstacle. The programmer never wrote code to specifically create a traffic jam, yet one now exists in the game.

Digital Games Industry

The digital game business is exploding with new game platforms from Xbox and Playstation, plus new apps and mobile/social games. In fact, games are now the primary digital media market influencer, surpassing movies, music and books in market size.

Demographics

The November 2005 Nielsen Active Gamer Study, taking a survey of 2,000 regular gamers, found that the U.S. games market is diversifying. The age group among male players has expanded significantly in the 25–40 age group. For casual online puzzle-style and simple mobile cell phone games, the gender divide is more or less equal between males and females. Females have also been found to show an attraction to online multi-player games where there is a communal experience. More recently there has been a growing segment of female players engaged with the aggressive style of games historically considered to fall within traditionally male genres (e.g., first-person shooters). According to the [Entertainment Software Rating Board](#) (ESRB) almost 41% of PC gamers are women.

The [Entertainment Software Association](#) (ESA) provides the following summary for 2011 based on a study of almost 1,200 American households carried out by Ipsos MediaCT:

- The average gamer is 30 years old and has been playing for 12 years. Eighty-two percent of gamers are 18 years of age or older.
- Forty-two percent of all players are women and women over 18 years of age are one of the industry's fastest growing demographics.
- Today, adult women represent a greater portion of the game-playing population (37 percent) than boys age 17 or younger (13 percent).
- Twenty-nine percent of game players are over the age of 50, an increase from nine percent in 1999.
- Sixty-five percent of gamers play games with other gamers in person.
- Fifty-five percent of gamers play games on their phones or handheld device.

Game Sales

The four largest 2012 producers of and markets for computer games **with an expected total global value approaching \$100B in 2018** are (in descending order):

1. North America (US and Canada),
2. Japan,
3. United Kingdom and
4. Germany.

Other significant markets include Australia, Spain, South Korea, Mexico, France and Italy. India, China and southeast Asia in particular are considered emerging markets in the digital game industry and sales are expected to rise significantly in the coming years. The Irish are presently the largest per capita consumers of digital games in the world.

The [NPD Group](#) tracks computer and video game sales in the United States, it reported in 2004 that:

- Console and portable software sales: \$6.2 billion, up 8% from 2003
- Console and portable hardware and accessory sales: \$3.7 billion, down 35% from 2003
- PC game sales: \$1.1 billion, down 15% from 2006

PC games that are [digitally distributed](#) either directly or by networks such as [Steam](#) are not tracked by the NPD, and [Valve](#) does not list sales numbers for downloaded games through their

service. Gabe Newell, creator of the digital distribution service Steam, formulated the advantages over physical retail distribution as such:

The worst days [for game development] were the cartridge days on the NES (Nintendo Entertainment System). It was a huge risk – you had all this money tied up in silicon in a warehouse somewhere, and so you'd be conservative in the decisions you felt you could make, very conservative in the contracts & IPR you signed, your art direction would not change, and so on. Now it's the opposite extreme: we can put something up on Steam, deliver it to people all around the world, make changes. We can take more interesting risks. [...] Retail doesn't know how to deal with those games. On Steam [a digital distributor] there's no shelf-space restriction.

Unauthorized distribution is also rampant on the PC. Another growing factor that is difficult to account for is the expansion and popularity of independent games, which typically bypass traditional developer/publisher relationships to instead market directly to the consumer. Sales figures are generally in dollars, not units, Unit shipments for each category were higher than the dollar sales numbers indicate, because more software and hardware was discounted than in 2003. But with the release of the next-generation consoles in 2006, these numbers increased dramatically. The game and film industries are also becoming increasingly intertwined, with companies like Sony having significant stakes in both. A large number of summer blockbuster films spawn a companion game, often launching at the same time to share the marketing costs.

The global market for console games has seen an average of 6.9 percent compound annual growth rate (CAGR) and is expected to become a \$34.7 billion market in 2012.

Online game sales are expected to grow at a faster rate of 16.9 percent (CAGR), escalating from \$6.6 billion in 2008 to \$14.4 billion by 2012.

The largest channel for growth, however, is in mobile gaming with a growth rate of 19 percent (CAGR); estimated to grow from \$5.6 billion in 2008 to \$13.5 billion in four years.

Roles

Producer

Development is overseen by internal and external managers generally known as producers. The producer working for the developer is known as the internal producer and manages the development team, schedules, reports progress, hires and assigns staff, etc. The producer working for the publisher is known as the external producer and oversees developer progress and budget. Producer's responsibilities include [public relations](#), contract negotiation, liaising between the staff and stakeholders, schedule and budget maintenance, [quality assurance](#) and test management plus regionalization. This role may also be referred to as project manager, project lead, or director.

Publisher

A game publisher is a company that publishes digital games that may have been developed either internally or by an external game developer. As with book, movies or DVD publishers digital game publishers are responsible for their branded product's manufacture and distribution, including market research and all aspects of advertising and marketing.

Publishers usually finance the development, sometimes by paying a game developer and sometimes by paying an internal staff of developers called a studio. Consequently, they also

typically own the Intellectual Property Rights or IP of the game. Large game publishers also distribute the games they publish, while some smaller publishers instead hire distribution companies to distribute the games they publish.

Other functions usually performed by a publisher include deciding on and paying for any licenses that the game may utilize; paying for regionalization like language translations; layout, printing, and possibly the writing of the user manual; and the creation of marketing graphic design elements as used on a box design.

Large publishers may also attempt to boost efficiency across all internal and external development teams by providing services such as design and code requirements for commonly needed functionality.

Because the publisher usually finances development, it usually tries to manage development risk with a staff of producers or project managers to monitor the developments progress, review and critique ongoing development, and assist as necessary. Most video games created by an external video game developer are usually paid for with periodic advances on royalties. These advances are made when the developer reaches certain stages of development, called milestones.

Independent game developers create games without a publisher and may choose to digitally distribute their games.

Development Teams

Developers can range in size from small groups making casual games to housing hundreds of employees and producing several large titles. Companies divide their subtasks of game's development. Individual job titles may vary; however, roles are the same within the industry. The development team consists of several members. Several members of a team may handle a single role; similarly more than one task may be handled by the same member. Team size can vary from 3 or 4 to 100 or more members, depending on the game's scope and team experience.

On average, the key team members include designers, artists, followed by programmers and then audio specialists, with one or more producers performing in management roles. These people are usually employed full-time but exceptions to this can arise as is the case with consultants and contractors. Other positions, such as testers, may be employed only part-time. Salaries for all these positions can vary widely depending on both the experience and the location of the employee. An entry-level programmer can make up to \$70,000 annually while an experienced programmer can make \$125,000 annually.

A development team often includes these roles or disciplines:

Designer

A game designer is a person who designs gameplay, conceiving and designing the rules and structure of a game. Development teams usually have a single lead designer who coordinates the work of other designers. They are the main visionary of the game. Supplemental roles for a designer often include being a writer and employed part-time to conceive of a game's narrative, dialogue, commentary, cutscene narrative, journals, game packaging content, hint system, etc. In larger projects, there are often separate designers for various parts of the game, such as, game mechanics, user interface, characters, dialogue, etc.

Level Designer

A level designer is a person who creates [levels](#), challenges or missions within a computer game using a specialized set of programs. These programs may be commonly available commercial 2D or 3D design programs, or specially designed and tailored as [level editors](#) for a game.

Level designers work with both incomplete and complete versions of the game. Game programmers usually produce level editors and design tools for the level designers to use. This eliminates the need for designers to access or modify game code directly. Level editors can involve custom high-level scripting languages for interactive environments. As opposed to the level editing tools often available to a wider community, level designers generally work with placeholders and prototypes aiming for consistency and clear layout before required artwork has been completed.

Artist

A game artist is a [visual artist](#) who creates digital game art. The art production is usually overseen by an art director or art lead, making sure their vision is followed. The art director manages the art team, scheduling and coordinating within the development team.

The artist's job may be [2D](#) oriented or [3D](#) oriented. 2D artists may produce concept art, sprites, [textures](#), environmental backdrops or terrain images and user interface. 3D artists may produce models or volume [meshes](#), animation, 3D environment and cinematics. Artists sometimes occupy both roles.

Programmer

A game programmer is a [software engineer](#) who primarily develops video games or related software (such as [game development tools](#)). The game's software [codebase](#) development is handled by programmers. There are usually one or more [lead programmers](#), who implement the game's starting codebase and overview future development and programmer allocation on individual modules. Individual programming roles include:

- Physics – the programming of the [game engine](#), including simulating physics, collision, object movement, etc.
- [Artificial Intelligence](#) – producing computer agents using game AI techniques, such as statistics, machine learning, rule-based heuristics, etc.
- Graphics – the managing of graphical content utilization and memory considerations; the production of graphics engine, integration of [models](#), textures to work along the physics engine
- Audio – integration of music, speech, effect sounds into the proper locations and times.
- [Gameplay](#) – implementation of various games rules and features (sometimes called a generalist)
- Scripting – development and maintenance of high-level command system for various in-game tasks, such as AI, level editor triggers, etc.
- [UI/UX](#) – production of user interface (UI) and user experience (UX) elements, like option menus, [HUDs](#), help and feedback systems, etc.
- Input processing – processing and compatibility correlation of various input devices, such as keyboard, mouse, gamepad, cameras, interial sensors, etc.

- Network communications – the managing of data inputs and outputs for local and internet gameplay
- [Game tools](#) – the production of tools to accompany the development of the game, especially for designers and scripters.

Audio engineer

Sound engineering is responsible for [sound effects](#) and sound positioning. They sometimes oversee [voice acting](#) and other sound asset creation. [Composers](#) who create a game's [musical score](#) are also members of a game's sound team, though often this work is outsourced.

Tester

The [quality assurance](#) is carried out by game testers. A game tester can either methodically analyzes digital games manually or develop automated test software to document defects as part of a quality control plan or do both. Testing can be a highly technical field requiring computing expertise, and analytic competence.

The testers ensure that the game falls within the proposed design: it both works and is entertaining. This involves testing of all features, compatibility and regionalizations. Although, necessary throughout the whole development process, testing is expensive and is often actively utilized only towards the completion of the project.

Top Tips

Game Designer - David Cage began his career as a professional musician for film, television and games, before founding the French games studio *Quantic Dream* in 1997. Over the past 15 years, he has written and directed a range of innovative and influential games, including the BAFTA award-winning *Heavy Rain*, and the hugely successful *Beyond: Two Souls*. Recently, he has collaborated with actors like Ellen Page and Willem Dafoe and the composer Hans Zimmer to create interactive and innovative games with a focus on storytelling.

1	If you want to design games, play them	<p>I got started in the business 17 years ago. First of all, I was a gamer. I've been playing video games since I was 10 years old and I think it's important to play games if you want to design them yourself.</p> <p>I was an avid gamer when I was a kid and a teenager, but I never thought it would become my job. I became a composer and then I started composing music for video games.</p> <p>I started writing a game that I was dreaming of playing, hired a bunch of friends to make a prototype and that was how <i>Quantic Dream</i> was born 17 years ago.</p>
2	Trust your instincts	<p>We worked on that prototype (later released as <i>Omikron: The Nomad Soul</i>) for six months. The story took place in a city in real time 3D, which was really a premiere from the technical point of view.</p> <p>I invested pretty much all of the money I had made as a musician into the project because I thought it could work. But there has never really been any business thinking behind any decision that I've made.</p> <p>I think you have to just trust your instincts and follow what you want to do with your life, this is really what has led to all of my decisions up to today.</p>
3	Be patient	<p>A game like <i>Beyond: Two Souls</i> is definitely a big game. It's about 200 people working for three years. It is hard work and you need to be patient.</p> <p>It's a year in the writing, it's a year in the shooting and it's a year in post-production. We create games that would usually be qualified as indie games, because they are not in one of the classic genres.</p> <p>We don't make shooting or sports games, our games are about allowing a player to play a story. If you want to do something like this you need a lot of luck and <u>you need to find a publisher that will trust you and that in turn you trust.</u></p>
4	Get a proper education	<p>If this is what you want to do, you need to go to school for as long as possible, that's the first rule. Sometimes kids come to us and say: "I want to work in games, I love games and I play so many."</p> <p>That's great and you do need to be passionate, but if you don't have the right diplomas, it's a waste of your time, this is a competitive industry.</p> <p>So go to school, be passionate, be creative, be crazy! You are the future, so don't try to recreate the past. You are supposed to have new ideas and lead this industry forward.</p>

5	Constantly reassess what you think you know	<p>When you watch a film, you just want to watch something and be passive. When you play a game you want to be the actor, you want to be in the shoes of the guy making the decisions so it's a very different type of experience.</p> <p>You always need to reassess what you know, or what you think you know, because the technology and the concepts are always changing.</p> <p>You also need to imagine what is going to work tomorrow, not just what worked yesterday. You have to be enthusiastic and you have to have passion.</p>
6	Choose the right actors (partners)	<p>It was my idea to have Hollywood actors in <i>Beyond: Two Souls</i>, it was not a marketing decision.</p> <p>So we met with Ellen Page and Willem Dafoe because we felt they were the best possible actors for the parts that we had written.</p> <p>I'm so happy with the performance that they delivered. I really got what I was looking for, which was talent. It was important to me and I really think that the game is better with them.</p>
7	Understand the importance of music	<p>The music is also very, very important for a game. It can be very challenging because we are not talking about 90 minutes of film, we are talking about ten or twelve hours of music. It's a lot of work.</p> <p>When we met with the composer Hans Zimmer and his team, their first reaction was that they weren't very interested in video games because they're all pretty much the same.</p> <p>We explained that this one would be different, we sent them the script and talked about the characters.</p> <p>The music was incredibly important because of the emotional dimension of the game and the intentions that we had. They said "yes" and they really helped to make the game better.</p>
8	Learn the rules before you break them	<p>You have to know the rules before you can break them. It's something that has a special meaning in games because we are a very young industry and I don't think the rules are clearly established yet.</p> <p>I played games myself for years and my gut feeling was that we had reached the limit of what the rules allowed us to do. If you want to go further you have to do something different.</p> <p>It is always challenging to invent new rules and new ways of doing things because you need to convince other people that it is time to leave the old paradigms and find new ones.</p>
9	Really think about story and emotion	<p>To me, story and emotion are very important. I always felt that when you watch a film, what you love isn't so much what you see, it's what you feel.</p> <p>For me it's the same thing in a game. When you play a game it shouldn't matter so much which button you are supposed to press, it should be about what the game makes you feel.</p> <p>I try to make the player feel things they don't normally associate with video games, like feeling sad or uncomfortable.</p> <p>I try to explore these grey emotions, there is no black and white, it's not about laughing or crying, it's about all the different shades of grey in between.</p> <p>For me, a game should be an emotional journey. You want ups and you want downs and what is interesting is what you feel between the two, that's what I'm really looking for.</p>

10	Decide what you want out of life and go for it	<p>If your goal in life is to just have a job, have some money at the end of the month and not have too many problems, then there are jobs out there for you.</p> <p>If you want to be someone who will try to be creative, try to have ideas, try to shape things and take all the risks attached with that, then you will take a different approach.</p> <p>You need to think what people are going to like two years or five years from now, then try to work on that, even if it means that nobody will understand you today.</p> <p>Trying to do things differently can be really exhausting and extremely risky. I'm really happy with what I do and the position I'm in, but if I had maybe been a little more pragmatic, it might have made my life easier.</p> <p>I don't have any regrets, I always did my best based on what I knew at the time. I love what I do, I like to explore new ideas and that is a reward in itself.</p>
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Animator / Leader - Ed Catmull is an award winning computer scientist and president of Walt Disney Animation Studios and Pixar Animation Studios. As a computer scientist, Catmull has contributed to many important developments in computer graphics and digital animation yet it has been his innovative role as a leader of creative organizations that possibly holds his most lasting legacy.

1	Communications needs to be between anybody at any time.	<p>Every organization's foundation is built on the bedrock of communications from within. Communications should be separate from the structural hierarchy of an organization - out of order, and among anyone within the company, anytime.</p> <p>While many companies work well within a hierarchy of responsibilities, communication shouldn't follow the same rules. "Communication needs to be free flowing" Catmull says, which means it needs to happen outside of the corporate structure and out of order.</p> <p>Managers don't like to give up of control, it's often taken as a sign of disrespect if you go into a meeting and learn something for the first time. But such open lines of communication are necessary if you want to form a creative environment where good ideas can be freely shared without worry that things have to go through proper channels.</p> <p>That may sounds like chaos to managers, whose job it is to keep the team coloring inside the lines. "You've got to get over it," Catmull says. "If you want people to be let loose, then you can't over-control them."</p>
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2	Candor is everything	<p>A hallmark of any healthy creative culture is that its people feel free to share ideas, opinions, and criticisms. Our decision making is better when we draw on the collective knowledge and unvarnished opinions of the group. Candor is the key to collaborating effectively. Lack of candor leads to dysfunctional environments.</p> <p>One of Pixar's key mechanisms for influencing its creative processes is the “brain trust”, which we rely on to push us toward excellence and to root out mediocrity. It is our primary delivery system for straight talk. Even today “The Braintrust” is not a foolproof Pixar institution, God forbid, but when we get it right, the results are phenomenal.</p> <p>From Pixar’s earliest days, the first “brain trust” gave us a solid model for a highly functional working group. They were funny, focused, smart, and relentlessly candid when arguing with each other but ultimately driven by love. Love for the art and craft of it all, love for their colleague’s skill, talent and inspiration and ultimately love and respect for themselves.</p> <p>Most crucially, they never allowed themselves to be thwarted by the kinds of structural or personal issues that can render meaningful communication in a group impossible.</p>
3	Let Your Ideas Suck	<p>Candor could not be more crucial to Pixar’s creative process. Why? Because early on, all of our movies suck. That's a blunt assessment, Catmull acknowledges, but he chooses that phrasing because saying it in a softer way fails to convey how bad the first versions really are.</p> <p>Catmull is not trying to be modest or self-effacing. Like most creative endeavours Pixar films are not good at first, and Pixar’s job is to make them so - to go, as Catmull says, "from suck to not-suck."</p> <p>Pixar movies have multi-layered, compelling stories and are beautifully put together. The process that these movie ideas go through, starting with a story that often bears no resemblance to the final product. All that anyone sees is the final product and there’s almost a romantic illusion about how you got there.</p> <p>For example, the first version of the movie <i>Up</i> included a king in a castle in the clouds. They threw everything out from that first idea except a bird and the word “up,” from there it went through several other iterations with a little more of the final story emerging each time. They had to make a lot of mistakes and have a lot of failures along the way to get that final great product, he said.</p>
4	Truly Creative Processes Aren’t Quick nor Easy	<p>“<i>People would like to be done quickly,</i>” Catmull explained, which is a product of what he calls the need to “<i>feed the beast.</i>” A phrase he heard when he first joined Disney, he explained that “<i>the beast</i>” is the majority of people who are making the film (or building the product) - they are concerned with generating the revenue and making sure things get completed. While those goals are important, creative leaders have to recognize that initially things will be a mess and they need to protect that creative process.</p> <p>But, Catmull acknowledges, “you can’t protect something forever because at some point you have to make a product.” Getting it right is a balancing act, “If the beast engages too early, it screws it up, and if we let a project wander along too long then we screw it up, so you have to find a middle ground. There is nothing about this that is easy but the ever lasting temptation is to try and make it easy.” Resist this temptation.</p>

5	Pay Attention to Group Dynamics	<p>Pixar is known for its creative “brain trusts” - groups that work well together to solve problems and hone ideas. But an effective brain trust is more that just a group of smart people, or even a group of people who get along, according to Catmull.</p> <p>After studying what made his most effective brain trust so successful he realized it was that no one in the group had authority to change the project. “It allowed the director to listen,” he explained, “if someone in the room had the authority to override him then it meant that they had to defend their project, which isn’t healthy in the greater scheme of things. So by removing the power you let them listen.” This way, he said every member of the group has a vested interest in each other’s success.</p> <p>Catmull asserts the value of creating a space where it’s safe for people to say something stupid without fear of being chastised. But he stresses that it’s the job of managers “not to judge what they are talking about but to look at the personal dynamics of the room.” There will be people who want to impress everyone, and people who don’t want to hear the truth, it’s your job as a leader to notice that and create a new group to get dynamics that work.</p> <p>“The problem isn’t finding ideas,” he said, “it’s finding a team that works well together. You can’t judge the product you have to judge how they are working together, how they interact with each other--the laughter in the room.”</p>
5	In a team, patience and trust are everything	<p>To understand why teams are so central to Pixar, you have to start with a basic truth: <i>People who take on complicated creative projects often become lost at some point in the process.</i> It is the nature of these things - in order to create, you must internalize and almost become the project for a while, and that near-fusing with the project is an essential part of its emergence. But it is also confusing. Where once a movie's writer/director had perspective, he or she loses it. Where once he or she could see a forest, now there are only trees.</p> <p>How do you get a director to address a problem he or she cannot see? The answer depends, of course, on the situation. The director may be right about the potential impact of his central idea, but maybe he simply hasn't set it up well enough for the Braintrust. Maybe he doesn't realize that much of what he thinks is visible on-screen is only visible in his own head. Or maybe the ideas presented in the reels he shows the Braintrust won't ever work, and the only path forward is to blow something up or start over. No matter what, the process of coming to clarity takes patience and trust.</p>

6	Ideas must emerge from within	<p>At Pixar, we try to create an environment, a community really, where people want to hear each other's notes (even when those notes are challenging) and where everyone has a vested interest in one another's success. We give our film makers both freedom and responsibility. For example, we believe that the most promising stories are not assigned to film makers but emerge from within. With few exceptions, our directors make movies they have conceived of and are burning to make. Then, because we know that this passion will at some point blind them to their movie's inevitable problems, we offer them the counsel of the Braintrust.</p> <p>The Braintrust's notes, then, are intended to bring the true causes of problems to the surface - not to demand a specific remedy. We don't want the Braintrust to solve a director's problem because we believe that, in all likelihood, an offered solution won't be as good as the one the director and his or her creative team comes up with. Consequently, The Braintrust has no organizational authority to demand anything of a film's creative team although it often commands deep influence within the larger Pixar community. Yet there have been times, inevitably, when a rare "completely lost" project team has had to be rebuilt or an occasional Braintrust's re-mixed.</p>
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Entrepreneur - Richard Branson left school at the age of 16 to set up Student Magazine with one of his friends. He went on to start Virgin Records in the 1970s through which he discovered and published Mike Oldfield's wildly successful *Tubular Bells*. Today, Branson is the founder of the Virgin Group within which in the 1980s he formed Virgin Atlantic airline and the 1990s saw the arrival of Virgin Mobile and Virgin Trains. He is one of the most successful businessmen in the UK and an icon of global entrepreneurship. His latest project is Virgin Galactic, which he hopes will become a space tourism company.

1	Follow your dreams and just do it	<p>Follow your dreams, get involved in life, in the things that interest you. If you are going to create a business, make sure it is your hobby, your passion or something that you really enjoy.</p> <p>You will live a much better life that way. Don't just set out to do something for the sake of making money.</p> <p>I think lots of people have lots of great ideas, but very few people actually go out and try to put them into practice.</p> <p>There are lots of people who think that somebody must have done that before, or you'll never raise the money or you shouldn't take a risk in life.</p> <p>It's the people who say I'm just going to do it, that end up having a chance of having a much more exciting and rewarding life.</p>
2	Make a positive difference and do some good	<p>The first thing to do if you want to become an entrepreneur is basically to have an idea that is going to make a positive difference to other people's lives. A business is simply that.</p> <p>If you're running a business you are in a position where you can make a hell of a difference in this world.</p> <p>I also think it's great for the staff of a company that they can feel good about a company that is actually getting out there and doing good.</p>

3	Believe in your ideas and be the best	<p>You definitely need to believe in your idea. There's really no point in doing something in life unless people feel really good about it and proud about it. You've got to have passion for it and you've got to be able to inspire other people to have a passion for it too.</p> <p>If an idea is a good idea you should be able to pitch it in two or three sentences and two or three sentences fit very neatly on the back of an envelope.</p> <p>There was no point creating a new airline unless it was going to be palpably better than every other airline in the world, you've got to make sure that every aspect of what you do is better than the competition.</p>
4	Have fun and look after your team	<p>I 100% believe that it's important to have fun and if you're not having fun anymore, it might be time to move on. You should have fun from the top down and create the kind of environment that's pleasant to work in.</p> <p>Make sure that you've got the kinds of people running your companies who genuinely care about people, who look for the best in people and who praise and don't criticize.</p> <p>People are not that unlike flowers. If a flower is watered it flourishes and if a flower is not watered it dries up and dies and I think the same applies to people.</p>
5	Don't give up (ever !)	<p>It's extremely important not to give up. There have been situations in my adventures, like crossing the pacific in a balloon, where the odds were stacked very heavily against us surviving.</p> <p>As Churchill once said, <i>“Never give in — never, never, never, never, in nothing great or small, large or petty, never give in except to convictions of honour and good sense. Never yield to force; never yield to the apparently overwhelming might of the enemy.”</i></p> <p>Being an entrepreneur is not that dissimilar to being an adventurer. You have plenty of situations where your back is right up against a wall and you've just got to work day and night to make sure you overcome the difficulties a particular company finds itself in. Brush yourself down the next day, adapt and move on.</p> <p>Another Churchill quote suggests, <i>“Success is going from failure to failure without a loss of enthusiasm”</i></p> <p>I think I'm reasonably good at dealing with failure and not letting it get me down for more than an hour or two as long as I put everything I can into avoiding it.</p> <p>Finally, one of my favourite quotes from Winston offers, <i>“To improve is to change. To be perfect is to change often.”</i></p>
6	Make lots of lists and keep setting yourself new challenges	<p>I make copious lists because I think it's the little details that make for an exceptional company over an average company. Details are very important and I think it's important to keep setting yourself new challenges and targets.</p> <p>I do believe that the first of the year is a good time to write down your goals for the year. Unless you actually organise yourself and write down the kinds of things you want to achieve, there's a danger that as time slips by, you don't achieve a lot.</p>

7	Spend time with your family and learn to delegate	<p>One of the early things you have to do as an entrepreneur is learn the art of delegation. Find people who are better than you to run the companies on a day-to-day basis, freeing yourself up to think about the bigger picture and spend time with your family.</p> <p>That's very important, especially if you've got children, they are what's going to be left when you're gone.</p> <p>I know I'm a good entrepreneur, but I'm not sure that I'd be a very good manager and there is a difference. My mind is always thinking ahead and wanting to create new things.</p> <p>I just think once I've set something up, it's better if someone else runs it. I can dive in and out and be a pain occasionally, but the day-to-day business is better for somebody else to do.</p>
8	Try turning off the TV and get out there and do things	<p>My mum brought us up very much to get out there and do things, don't watch other people do things, and avoid watching television. I think that was a good way of bringing up kids. With my own kids, we've spent quite a lot of time in the Caribbean and we never watch television there.</p> <p>I think I am capable of switching off on Necker Island which is where we sort of pull up the drawbridge. But what I'm doing I see as so fascinating, so rewarding, so interesting that I don't ever really want to switch off too much because I find myself in such a wonderful, challenging position that I don't want to waste that position and there are just so many important challenges going on.</p>
9	When people say bad things about you, don't seek petty revenge, just prove them wrong	<p>There are people who hang onto the coat tails of successful people and try to sell a few books on the back of their name. It's unpleasant but you know that if you sue them or kick up a fuss, all it will do is publicise the book. So I've had to learn the art of ignoring people like that.</p> <p>I think the best thing to do is just to prove them wrong in every single way. This particular book, (Branson: Behind the Mask by Tom Bower), says that our spaceship programme is a white elephant, later this year we will prove them wrong.</p>
10	Do what you love and have a sofa in the kitchen	<p>You only live one life, so I would do the thing that you are going to enjoy. When life boils down, this might sound like a little much coming from me, I do have my own little island in the Caribbean, but when we are on that island, we tend to just live in the kitchen.</p> <p>The truth is, so long as you've got a kitchen which has space for a sofa, and a bedroom, and a partner that you love, you don't necessarily need the add-ons in life.</p> <p>Then, if you're doing something that really interests you, it will result in a much more enjoyable life rather than just doing something for the sake of making money.</p>

Product Designer - Emma Bridgewater started her own pottery company in Stoke-on-Trent in 1985, when she couldn't find a suitable gift for her mother. Today the company, which she runs with her husband Matthew Rice, employs more than 200 people, and is perhaps best known for Emma's polka dot and pink heart designs.

1	Get a job	<p>Try and get a job in any capacity in your industry and with a creative company that interests you. I did that for 18 months and what I learned during that time was kind of everything.</p> <p>That opportunity to be inside a creative company, see what's happening, feel the excitement of it, straight out of college, that's the best possible thing you can do. And don't hang around.</p> <p>I personally think you should be paid for it, but it doesn't matter how menial a capacity you are employed. Take any job at any price in order to get into a company that interests you.</p>
2	Have self-belief	<p>I knew I was going to be successful. When I first had the idea, I didn't know anything about the ceramics industry, so I came to Stoke-on-Trent in a haze of utter ignorance, but with conviction. I walked around and I could see very definitely that this great big Victorian factory was going to be making nothing but Emma Bridgewater designs one day.</p> <p>I do have a feeling that in your work, as with the whole of your life, if you can imagine the solution you want, that's half the job. But without it, you won't probably get anywhere much.</p>
3	Start small, but stay ambitious	<p>I started off with just four shapes. A mug, exactly like the one I am drinking from now, a bowl, a milk jug and a dish. My "polka dot" and "hearts" designs are both really good examples of designs that are almost incidental.</p> <p>These nice, simple, pleasing shapes were a very good way of making a pattern that wasn't too "patterny". People have got to be feeling committed to the idea of decoration to buy roses and jolly animals and things. With spots you can just kind of sneak by someone, it's a pattern that doesn't daunt.</p>
4	Keep having new ideas	<p>I'm completely dedicated to the traditions of making pottery in Britain. So the way we do it dominates what our range of pottery looks like. Inspiration is all around - from books that Matthew and I buy, to antique shops and flea markets, to the sort of hinterland of my upbringing.</p> <p>When you've got an idea, when you've got the shapes and the colours, there is a very nice thing that happens organically. There's a sort of hum that you build up that makes the genesis of new designs possible. It makes a fertile ground for new designs to pop up in. It's vital to keep having new ideas.</p>
5	Be passionate - you've got to love it!	<p>Don't set out to do something that you are not absolutely passionate about because, to get through the hard work of it, you have got to feel passionate and I think probably for me, a big saviour has been the cause of Stoke.</p> <p>I think at times, if it had just been about making money, I probably would have seriously doubted my intention to carry on. Whereas the feeling of caring about the industry and the city and the people who work here and their skills, the passion for that has been a great driver. I think to try and sell widgets all your life would probably be terrible, you've got to love it!</p>

6	When the idea comes, go for it	<p>I studied English at University and pretty much thought I was going to go into publishing. Maybe as a literary agent, something like that. Then after I graduated, I had a clear idea in my head that I was going to start my own company. It was going to be fun, but it was going to be orderly and it was going to make money.</p> <p>My cousin and I were making canapés for people's drinks parties. We didn't kill anyone, astonishingly, and I was sleeping on her sofa. It was all very uncertain and then I had a wonderful, wonderful moment in a china shop when I was trying to buy Mum a birthday present.</p> <p>It struck me absolutely, straight between the eyes, that there was a great big yawning gap where the right pottery for her way of life should be. It's strange, isn't it? But I just knew it was going to work.</p>
7	Choose a good name	<p>It's completely vital to have a good name for your brand. I think it's a very simple and single issue: If the company bears your name, there is a connection. You can embody the brand in a very direct way and I think Cath Kidston shows that in the most extemporary fashion.</p>
8	Work hard but know how to switch off	<p>People get where they get by all sorts of different roads but I don't know many successful people who take lots of holidays. For years and years, Matthew and I and the children only ever took two or three days off at a time. There is no point dressing it up, it is blindingly hard work and if that seems daunting it isn't worth doing.</p> <p>I find it quite hard to switch off. If I'm on my own, I make a very conscious effort to listen to music or a play or an audio book rather than spend the whole time on the telephone. It's vital to have a nice home to escape to.</p>
9	Be prepared to make sacrifices	<p>I work with my husband. For a lot of people the very idea of it is the third circle of hell, but it's worked for us. There's plenty of scrapping but we tend to have found that very productive. I'm sure our children would say it's been a nightmare!</p> <p>My family have been a huge influence. You do it for your family and then frankly you feel tremendously guilty that the work you're doing, for their benefit, means that you're never there.</p> <p>Matthew's parents have been massively involved, they've done a huge amount, more school concerts and school runs than me. There's a sort of inherent uneasy dynamic for most working women, I think, which I don't have a secret answer to. Compromise is all there is... and common sense.</p>
10	Don't have regrets	<p>I feel constantly dissatisfied with things I haven't done, rather than pleased with the things that I have. If people ask me whether I regret how hard I've worked its always "yes, no, yes, no, yes, no!" The answer I always end up giving is "no". Like most working women, I think, I probably spend a lot of time on that particular guilt treadmill.</p> <p>But when you step away from it and think about making jobs in an industry that has taken the most appalling knocks; and think about making lovely things that people really, really enjoy giving to each other - those are important things and I think the children do all inherently understand that and think that it is a good thing, too. But they might give you some quite funny answers first about me not ever knowing what their teachers are called!</p>

Writer - Although she didn't publish her first novel until she was 42, Phyllis Dorothy James (aka PD James) has been writing since childhood. Now a celebrated and world renowned crime writer, she has penned more than 20 books, including *The Children Of Men*, and the *Adam Dalgliesh mystery series*. At the age of 93, she says she wants to write just one more detective novel.

1	You must be born to your profession	<p>You can't teach someone to know how to use words effectively and beautifully. You can help people who can already write to write more effectively and you can probably teach people a lot of little tips for writing a novel, but I don't think somebody who cannot write and does not care for words can ever be made into a writer. It just is not possible.</p> <p>Nobody could make me into a musician. Somebody might be able to teach me how to play the piano reasonably well after a lot of effort, but they can't make a musician out of me and you cannot make a writer, I do feel that very profoundly.</p>
2	Be creative around what you know	<p>You absolutely should write about what you know. There are all sorts of small things that you should store up and use, nothing is lost to a writer. You have to learn to stand outside of yourself. All experience, whether it is painful or whether it is happy is somehow stored up and sooner or later it's used.</p> <p>I love situations where people are thrown together in unwelcome proximity. where all kinds of reprehensible emotions can bubble up. I think you must write what you feel you want to write because then the book is genuine and that comes through.</p> <p>I believe that someone who can write, who has a feeling for words and knows how to use them will find a publisher. Because after all, publishers do still need to find new writers. We all get old and we die and that's that and there have to be successors.</p>
3	Find your own routine	<p>I think all we writers are different. It's interesting, isn't it, how different we are?</p> <p>Some people have to have the room, the pen and others do everything on a computer. I write by hand and I can write more or less anywhere as long as I've got a comfortable chair, a table, an unlimited amount of biros to write with and lined paper to write on. And then the next day when my PA comes, which she does at 10 o'clock, then I've got quite a lot to dictate to her and she puts it on to the computer, prints it out and I do the first revision.</p> <p>In a sense, therefore, I revise as I go. It's important to get up early - before London really wakes and the telephone calls begin and the emails pile up. This is the best time for me, the time of quiet in the morning,</p>
4	Always be aware that your business is changing	<p>Goodness gracious, how the world of publishing has changed! It is much easier now to produce a manuscript with all the modern technology. It is probably a greater advantage now, more than ever before, to have an agent between you and the publisher.</p> <p>Everything has changed and it's really quite astonishing, because people can self-publish now. I would once have thought that that was rather a self-defeating way of doing it but actually publishers do look at what is self-published and there are examples of people picking up very lucrative deals.</p>

5	Do what it takes and don't daydream!	To write well, I advise people to read widely. Practice, see how people who are successful and good get their results, but try not to copy them. And then you've got to write! We learn to write by writing, not by just facing an empty page and dreaming of the wonderful success we are going to have. I don't think it matters much what you use as practice, it might be a short story, it might be the beginning of a novel, or it might just be something for the local magazine, but you must write and try and improve your writing all the time. Don't think about it or talk about it, just do it.
6	Enjoy your own company	A creative career is undoubtedly a lonely career, but I suspect that people who find it terribly lonely are not writers. If you work creatively in small teams then finding team members that resonate and are productively synchronized with you is a Godsend - cherish them, nurture them, hold onto to those people for as long as possible. Yet if you are a writer you realise its mostly a singular task and how valuable the time is when you are absolutely alone with your characters in complete peace. I think it is a necessary loneliness for most writers - they wouldn't want to be always in the middle of everything having a wonderful life. I've never felt lonely as a writer, not really, but I know of people who do.
7	Choose a good setting	Something always sparks off a novel, of course. With me, it's always the setting. I think I have a strong response to what I think of as the 'spirit of a place'. I remember I was looking for an idea in East Anglia and standing on a very lonely stretch of beach. I shut my eyes and listened to the sound of the waves breaking over the pebble shore. Then I opened them and turned from looking at the dangerous and cold North Sea to look up and there, overshadowing this lonely stretch of beach was the great, empty, huge white outline of Sizewell nuclear power station. In that moment I knew I had a novel. It was called <i>Devices and Desires</i> .
8	Never go anywhere without a notebook	Never go anywhere without a notebook because you can see a face that will be exactly the right face for one of your characters, you can see a place and think of the perfect words to describe it. I do that when I'm writing, I think it's a sensible thing for writers to do. I've written little bits of my next novel, things that have occurred to me. I've got the setting already. I've got the title, I've got most of the plot and I shall start some serious writing of it next month, I think.
9	Never talk about a book before it is finished	I never talk about a book before it is finished and I never show it to anybody until it is finished and I don't show it to anybody even then, except for my publisher and my agent. Then there is this awful time until they phone. I'm usually pretty confident by the time I've sent it in but I have those moments when I think, <i>'well I sent it to them on Friday, by Saturday night they should be ringing up to say how wonderful it is!'</i> I'm always aware that people might have preferences and think that one book is better than another.

10	Know when to stop	<p>I am lucky to have written as many books as I have, really, and it has been a joy. With old age, it becomes very difficult. It takes longer for the inspiration to come, but the thing about being a writer is that you need to write.</p> <p>What I am working on now will be another detective story, it does seem important to write one more. I think it is very important to know when to stop.</p> <p>Some writers, particularly of detective fiction, have published books that they should not have published. I don't think my publisher would let me do that and I don't think my children would like me to. I hope I would know myself whether a book was worth publishing. I think while I am alive, I shall write. There will be a time to stop writing but that will probably be when I come to a stop, too.</p>
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