

# BORN DIGITAL

UNDERSTANDING THE  
FIRST GENERATION  
*OF*  
DIGITAL NATIVES

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## CREATORS

**I**N OCTOBER 2006, *THE NEW YORKER* FEATURED A STORY ABOUT A MOVIE STAR who won an Oscar. It was not someone particularly famous—not Helen Mirren or Judi Dench or Meryl Streep, not Cate Blanchett. In fact, this Oscar winner is well-known only to those who spend a lot of time on YouTube. Her name is Stevie Ryan.

Stevie received her first “Oscar” when she was twenty-two. Like many people, she grew up dreaming of Hollywood stardom. Rather than succeeding in the way that her parents’ generation might have, Stevie has become a star without the help of powerful, big-name movie producers. Stevie struck out on her own in Hollywood in the classic fashion, but it was in cyberspace that she found an audience. She created a character named Cynthia, an eighteen-year-old Latina woman from East L.A., who becomes better known as Little Loca. Stevie’s “Oscar” arrives not on the Academy Awards but on YouTube, a few minutes into about the fortieth video she created. Her videos have been viewed well over a million times. New editions regularly attract an audience of tens of thousands of viewers. Stevie is in the top 100 video producers on YouTube of all time in terms of the number of regular viewers who subscribe to her channel.<sup>1</sup>

YouTube and the creation of online video has become a central part of Stevie's life. Shooting Little Loca videos and posting them to video-sharing sites became a full-time activity for her. Stevie Ryan has created a series of online personae for herself, as Cynthia (in the Little Loca videos) and as Stevie (on her own "tv" site). Little Loca is irreverent, self-assured, and appealing to her young audience, many of them Hispanic like Cynthia. The Oscar she received, it appeared, was real, stolen from a bar by a friend of Stevie's. The stolen Oscar, introduced to viewers on a couch in a YouTube video by a foul-mouthed young actress (who says in the video it was "heavy"), marked a shift underway in the manner that media is created and shared by young people.<sup>2</sup>

Stevie's not alone. The Internet has unleashed an explosion of creativity—and along with it thousands of new forms of creative expression—on a vast scale. These new forms of expression are unlike anything the world has ever seen before. Digital Natives are increasingly engaged in creating information, knowledge, and entertainment in online environments. Creating one's own TV shows, like the ones that Stevie specializes in, or making digital remixes of popular media are among the more spectacular examples of user-created content.

The creations of Digital Natives, however, are quite often limited to the thoroughly unspectacular: a new personal profile on Facebook, a posting on twitter.com ("Weather's nice here in Munich"), digital photos uploaded onto Photobucket or Shutterfly. Many Digital Natives are offering up contributions that fall somewhere on the spectrum between the mundane and the magnificent: editing an article on Wikipedia or programming a new Facebook application.

Approximately 64 percent of online teens in the United States have created some sort of content on the Internet.<sup>3</sup> (Older people aren't doing so badly in this dimension, either. Among adults, about a third of Internet users have created and shared user-generated content such as text, audio, video, categories or tags, and networks.<sup>4</sup>) The "power users" among young digital creators—age-wise, often clustering in their early to mid-twenties—engage extensively in blogging, creative forms of online game-playing, instant messaging, and the like.<sup>5</sup>

The phenomenon is truly global: In Hungary, Denmark, Iceland, Finland, Norway, Germany, Poland, and Luxembourg, for instance, a majority of young people have posted messages to chat rooms, online newsgroups, or forums.<sup>6</sup> Similarly, data for Asian countries show that home pages, blogs, and social network sites are extremely popular. Millions of Japanese write blogs and participate in social networking. About half of Korean Internet users have created websites or blogs. In China, blogs, bulletin boards, online communities, instant messaging, and the like are on the rise.<sup>7</sup> In our travels, we have found digital creators in every culture we have encountered. The phenomenon is one of the hallmarks of the emerging global culture of Digital Natives.

Of course, not all Digital Natives are participating in the creative renaissance that is happening online. The vast majority of kids are not rushing home after school to do anything so dramatic as to make political satires in the form of digital remixes. Only about one in four young people say they remix content of any kind into their own artistic creations such as artwork, photos, stories, videos, or the like.<sup>8</sup> Most digital creativity is of the unspectacular sort. What stands out to us is not the absolute (and relatively small) percentage of Digital Natives doing the most creative things online, but the extent to which this creativity represents an opportunity for learning, personal expression, individual autonomy, and political change. These examples of self-expression through digital media point toward greater engagement in remaking content, even in modest ways. This trajectory is particularly important for how we ought to be educating our kids in a digital era.<sup>9</sup>

A Facebook page is not, of course, an act of creation on par with the paintings of Leonardo da Vinci. Certainly, not all of the creations posted online—indeed, probably only a very small fraction of them—deserve the label “creative.” It’s therefore important to distinguish between “creation” and “creativity.” “Creation” relates to any digital content made by a Digital Native, ranging from an apparently trivial update on Facebook (“Mike is . . . tired today”) to an artistic video clip. “Creative,” in contrast, is a differentiating term that has a qualitative connotation. The word suggests that the

respective content created by the user is unique, useful (at least at the margins), and organized.<sup>10</sup> Consequently, a snapshot of the Notre Dame cathedral made by a French kid with her camera phone and uploaded directly from her mobile phone to the Internet is a creation, but not necessarily a creative one.

The Internet nevertheless has tremendous potential as a creative medium, particularly by comparison with other electronic media, and many Digital Natives have used this potential to create something more than snapshots from their camera phones. Television, for instance, is a noninteractive, one-to-many medium with a remarkable ability to transform everyone within sight into a couch potato. The only way we participate in it is by turning the television on or off, by switching the channel, or by changing the volume. At best, we might record something for viewing at a later time, perhaps omitting the commercials in the process. There is no easy way to interact with the content broadcast on a traditional television channel. Nonelectronic media are often designed with passive consumers in mind. Even in the case of a book—still among the most valued and revered media forms in the world—the activity level usually doesn't go beyond the sensorial, cognitive, and other neuropsychological processes that are necessary to perceive and process its content (what we call “reading”).

In contrast, many of the most popular Internet applications require a much higher level of interactivity among users, applications, and with digital content. Today, there's little doubt that user activity that goes beyond mere consumption of content is a design feature of the Internet. In fact, the latest iteration of the Internet, the participatory Web (Web 2.0), is all about the millions of people who are becoming creators of digital content. Marketers call the output of these creators “user-generated content” (UGC) or “user-created content” (UCC). In combination with the social networks, this phenomenon of user-generated content is what the Web 2.0 buzz is all about. In its pure form, this shift moves us away from a world of largely passive consumers of content produced by a few powerful professionals toward communities of increasingly active users—often amateurs—who can produce and share their own TV shows on YouTube, publish their own

news, or collaborate with others to rewrite online encyclopedias. In our view, that's a very good thing, and something that we ought to find ways to encourage.

Many Digital Natives are "creators" every day of their life. When they write new text for profiles of themselves in a social software environment, they are creating something that many of their friends will see later that day. If a college student updates his picture in Facebook or writes something on the profile page of a friend, a "news feed" is issued to all his friends to check out the changes on the relevant page. This combination—the ease of updating a personal page and the ability to send out a feed of those changes—has been wildly successful. It's what drives people from all around the world to visit billions of pages on Facebook per day.

Some Digital Natives also engage in more sophisticated acts than just updating their profiles. When they post video, when they make and share music, when they post and point to news, when they tag and bookmark stories on the Web, and when they make or ply new networks, they are creators. One of the most alluring, and often very creative, contributions of Digital Natives—and, to be sure, many Digital Immigrants as well—is their use of a new art form, a type of digital collage called the "remix" (sometimes also called a "mash-up"). Most people who use the Internet have encountered remixes, often forwarded by friends because they are funny or satirical. The remixes that mashed together Howard Dean's infamous scream in the primary election in January 2004 with music or other video clips are still on many people's iPods. Most popular television shows are remixed regularly as content creators use them to poke fun at characters or to make a point about a social issue.

Remixes allow Digital Natives and others to interact with cultural objects in a way that affects how cultures develop and are understood. Damien Randle, a financial adviser from Houston, Texas, formed a hip-hop group called "The Legendary K.O." along with his partner Micah Nickerson. The Legendary K.O. has successfully produced music at home and distributed it over the Web. After the rapper Kanye West spoke off script at the NBC Concert for Hurricane Relief and complained: "George Bush

doesn't care about black people," they put together a song to express their view on the matter. Damien and Micah used samples from West's song "Gold Digger" and his speech on TV and added their own critical lyrics about the disastrous Katrina relief efforts. They say this whole process took them thirty minutes. Twenty-four hours later, the song had been downloaded 10,000 times. Later, it reached gold status with more than half a million downloads. Since then, the song has been turned into a series of videos that have been shared widely over the Internet.<sup>11</sup>

The point is that the new world of digital media gives users the opportunity to interact not only with peers, but also with content. Text, images, videos, and audio files are not only shared with peers, but also easily manipulated. Mixing and mashing have become common practices in cyberspace. Digital Natives have developed excellent research skills when it comes to digging up digital materials that can be remixed—young people variously call it ripping, chopping, blending, mashing, or just manipulating it—to create new forms of expression. The creative efforts of Digital Natives build upon the rich tapestry of digital content already spread across cyberspace.

Sampling, like the remix, also demonstrates this type of engagement with digital media. Sampling was popular with hip-hop and R&B artists long before the Internet came along. "Sampling" a song means to take a portion of one song and reuse it as an element in a new recording. "Mash-up"—a.k.a. "Bastard pop"—is a popular musical genre in which the vocal of one song is laid over the music of another. Among the most famous mash-ups to date has been D.J. Danger Mouse's *Grey Album*,<sup>12</sup> which uses the vocals of J-Z's *Black Album* and mashes it with a rearranged version of the Beatles' *White Album*. Although the legality of such mash-ups is often contested, some artists encourage their fans to remix songs from one album to combine them with tracks from another (for instance, David Bowie with his "David Bowie Mash-Up Contest"). Other forms of digital expression are "cut-ups" (humorous or satirical pieces of reconstructed spoken words and video materials, such as Johan Söderberg's "Endless Love," featuring G.W. Bush and Tony Blair),<sup>13</sup> spoofs (including political parodies, such as JibJab's "This Land"),<sup>14</sup> and "machinima," a technique of using video games or virtual worlds to develop narratives and short films.<sup>15</sup>

Along with remixes and sampling, fan fiction has become a promising new creative pursuit among Digital Natives. In “fan fic” stories, Digital Natives use characters from their favorite TV shows, movies, books, cartoons, and the like and develop new plots, settings, or situations for them. The fan-fic authors then post these stories online, often on fan sites. One of the most popular fan-fiction objects is Harry Potter. The Harry Potter fan-fiction site, [www.harrypotterfanfiction.com](http://www.harrypotterfanfiction.com), allows anyone to contribute by posting an individual story about life at Hogwarts. And many people do so—the website currently features more than 45,000 stories, according to its live ticker, and it gets some 40 million hits a month. Sharing these stories on fan-fiction sites with peers is an important part of the experience—and often, posters and other fans get together in person at informal “meet-ups” and even at full-blown conferences.

Mash-ups, fan fiction, and sampling: Each is a way of creating art based upon the works of others. The law labels these new art forms “derivative” works, meaning that they are new works derived from the copyrighted creativity of people who came before. What they have in common is that they build on existing creative works, like songs, videos, and text, to form a new creation. This “rip, mix, and burn” culture—with a hat-tip to Apple for the slogan—is at the core of the unfolding creative revolution in cyberspace.

These new creative forms are inherently in tension with existing copyright laws, and it is hardly surprising that they have garnered the attention of legal departments in big media companies. YouTube has been sued by Viacom for alleged copyright infringement by YouTube’s users, many of whom have posted segments of television programs online without permission. Sometimes, these postings are straight rip-offs of the original files. Other times, they are creative rearrangements of songs, texts, pictures, and movies. These practices—creative and noncreative alike—are already generating litigation, and we can expect much more litigation before the legal issues surrounding these derivative works become clear. For the time being, this means that the way Digital Natives are interacting with digital media leaves them at risk for ongoing copyright liability.

Take the Harry Potter fan-fic site. Let’s say a Digital Native posts a Harry Potter story on the Web that either Harry Potter author J.K. Rowling or



the publisher of the Harry Potter books happens to disapprove of. Could the copyright owners do something against it?

The answer is most likely yes. Copyright law protects characters like Harry Potter and related forms of literary expression. The crucial point here is that copyright law grants the right holders of Harry Potter the *exclusive* right to make reproductions or so-called derivative works from it, so long as one of a few defenses, such as the fair use doctrine, does not apply. Derivative works are creations that are substantially copied from a preexisting work. Since fan fiction is all about the imitation of the original characters, their names and habits, and the like, the fan-fiction author is at risk of being sued for infringement of copyright law. In one case of Harry Potter pornography, a London-based law firm on behalf of Rowling and Warner Brothers sent out a so-called cease-and-desist letter and required a fan-fiction site to remove the pornographic story.<sup>16</sup>

The explosion of creativity online has given rise to new forms of expression and extended others, like sampling, to a broader population of creators. Creative reuse of the materials of others can lead to problems, though, in terms of copyright risks to the creators. When we combine this challenge to existing copyright law with the common practice of illegal file-sharing of music and movies, which we take up in detail in the next chapter, we see the makings of a legal trainwreck. And it is Digital Natives and traditional copyright holders who will be facing one another down.

Not all creative activity online involves the appropriation or reappropriation of other people's material without express permission. The movement toward digital creations and online creativity is about sharing. It is inherently social and collaborative. In many respects, it's about the power of *communities*.<sup>17</sup> The collective efforts of thousands of contributors—many of them Digital Natives—to build the world's largest encyclopedia, Wikipedia, is the most prominent example of collaborative content creation on the Internet.<sup>18</sup>

Jimmy Wales is a successful former commodities trader and digital entrepreneur. You'd be forgiven if you thought he was nuts when he created Wikipedia with the express goal of making it the world's greatest encyclopedia—free and online. The idea that an encyclopedia written by

tens of thousands of people, none of whom were paid to contribute their work, could actually amount to anything remotely credible would have seemed absurd just a few years ago.

Wikipedia is not without its faults, many of them extremely relevant to the story of Digital Natives. But by nearly any measure, it has been wildly successful. It's the clearest example of the trend that online culture has made possible: We're shifting from a world of consumers to a world of creators of information. In contrast to the *Encyclopaedia Britannica* and other traditional encyclopedias, Wikipedia is not written by experts. (The experts, in the *Britannica* case, incidentally, are "professionals" who are paid to write their sections, and they claim copyright on those sections, unlike their Wikipedian counterparts.) Wikipedia is written collaboratively by an army of volunteers. These volunteers may well be experts in some areas, but they contribute to the project outside of their professional routines. And they include not only people born before the digital age but hordes of Digital Natives as well.

Wikipedia is built on an incredibly simple, powerful technology called a "wiki." A wiki is a website that functions more or less like an online Microsoft Word document that anyone can edit. On a wiki, any user can make an entry at any time. Users can also edit articles written by other people. If you're intrigued by the technology and want to play with a wiki, we encourage you to practice on the wiki we've created as we've written this book, found online at <http://www.digitalnative.org/>. Just be prepared to get hooked. Wikis are addictive, as the success of Wikipedia makes clear.<sup>19</sup>

The Wikipedia project started in 2001 with a single English-language edition. Today, Wikipedia contains over 6 million articles in 249 languages, including more than 1.6 million articles in English alone. These numbers are remarkable. More impressive, however, is the number of volunteers who have contributed to the project. As of September 2006, more than 280,000 users—a.k.a. "Wikipedians," or, as some would have it, "Wikimaniacs"—from around the world had made at least ten contributions each to Wikipedia.

An even more active group of 10,000 Wikipedians makes at least 100 contributions per person per month. Most of these active users have a

subspecialty, a general area of interest and expertise where they focus their efforts. Some are interested in technology, so they edit the pages about software programs. The Windows Vista operating system has been a hot topic on Wikipedia since 2003, which was many years before its public release, and the full range of open-source technologies that are constantly evolving, such as the Linux operating system, likewise attract constant editing. Other digital creators, with online identities like “Scoobyirish”—a person who is clearly very into rock ‘n’ roll—focus on the extensive pages related to individual songs (“[I Can’t Get No] Satisfaction” has a frequently updated page, for instance) and bands, both old and new (the band Wilco, for example, which hit it big online, has a substantial and well-edited page).

It’s not just the number of authors and articles in Wikipedia that is astonishing. In our research, what struck us as most important is the extent to which so many young people have come to rely upon Wikipedia as a source of information. Wikipedia ranks among the top twelve most visited sites in the world. Its content is even cited by U.S. courts—and increasingly so. The creative, social, online habits of Digital Natives—and many older people as well—are fueling and being fueled by Wikipedia.

Wikipedia points both to the promise and to the peril of the Do-It-Yourself online culture in which Digital Natives are growing up. On the one hand, it’s extraordinary that young people, among many others, are participating in the making and aggregating of human knowledge in digital form. It’s crucial to note that this trend enables individuals to exercise greater autonomy through their ability to affect directly how narratives are told and retold. On the other hand, there are real concerns about cheating, plagiarism, lack of credibility, defamation—and much more—to which Wikipedia gives rise.

Music and encyclopedias have been around for a long time, but virtual worlds and Massively Multiplayer Online Games (known online as MMOGs) are new to the Internet. In each of these cases, Digital Natives are creating much of the content.<sup>20</sup> Digital Natives have created entire virtual worlds online. World of Warcraft, EverQuest, Second Life, Active Worlds, Entropia Universe—these are all computing environments that support

thousands of Digital Natives who might play simultaneously, each controlling one character in the game. (Many players frequently edit their virtual appearances—their “avatars”—to change their roles in the game, or play multiple roles within the virtual world.) These MMOGs range from Crazyracing Kartrider, a South Korean game in which players race cars against one another, to games in which players shoot people (“killing games”), or even serious, real-world simulation tools aimed at training professionals. They are “games,” in a way, but to stop there would miss much of the point. These are entire worlds, where much of the content and the experience itself is created not by some game designer but by the users.

Several million accounts have been created in Second-Life, an always-online, persistent, Earth-like fantasy world that is inhabited, all day and every day, by as many as 25,000 users simultaneously. Altogether there are hundreds of thousands of active residents, from many parts of the globe, who fly or walk around this world, sometimes for hours on end, exploring and developing this exotic environment. Sometimes they meet other residents and chat, much like they would in any other online chat room. Sometimes they participate in group activities, like musical events or the trading of virtual property. Most important for this story, residents of Second Life spend their time creating virtual items—buildings, furniture, machines, clothing, or artwork.

Second Life is, for the time being, not a scary environment. Its founders have established a world that is, by and large, conducive to self-expression and creativity, without excessive fear. There are some explicitly safe neighborhoods set up in Second Life to encourage younger Digital Natives to participate in this creative environment. A parallel world has emerged, set up especially for teens aged thirteen to seventeen. Teen Second Life (the “Teen Grid,” or TSL) is screened for adult content. As in the Adult Grid, TSL users are creative, collaborative, and interested in self-expression. They become community leaders, entrepreneurs, game designers, DJs, and socialites.<sup>21</sup>

The key point about these worlds—and the link to creativity—is that they are built not by software developers, but by the people who “live” there, some of whom are Digital Natives. Second Life is a user-defined world. The residents themselves create most of the content. The developers at Linden

Lab, the makers of Second Life, provide three-dimensional modeling tools and a scripting language. These tools empower Second Life residents to create avatars, houses, landscapes, vehicles, machines, plants, and the like as parts of the virtual world. The creative part is left up to the inhabitants. Young people are erecting buildings based on original architectural designs; establishing islands, cities, and ports; and creating characters who themselves become famous “in-world.” Though the percentage of young people in virtual worlds is modest, the creativity demonstrated by those who are in them is staggering—and inspiring.

**W**hat is it about the Internet that has made it such a fertile ground for creativity?

Certainly, one crucial factor is that users incur very low costs and can potentially reach enormous audiences. Unlike the cost of producing a traditional movie or record, the art forms that Digital Natives are pioneering cost very little. Theirs is a culture of creativity powered by ultra-simple, cheap technologies. Take the music industry, which has been transformed by the (intentional) sharing of music online. The availability of low-cost recording devices, cheap storage space, and affordable editing software, along with the availability of high-speed Internet connections to upload larger media files, has made it possible for individuals and bands to create and distribute their music without needing fancy equipment and expensive studio time.<sup>22</sup>

Another factor in this creative explosion is the technology infrastructure that allows people to access and then remix digital content. Half of the populations of rich regions like North America, northern Europe, and East Asia now access the Internet through a fast pipe—a broadband connection that can handle big files like video and audio content.<sup>23</sup> Affordable multimedia editing software suites such as Apple’s popular iLife, for instance, are literally only a few mouse-clicks away. Apple’s software includes, among other things, everything you need to edit and share photos, create and edit movies, record music and podcasts, and design and publish websites and blogs. Similarly, it’s easy and relatively cheap to buy,

say, a digital camera over an auction site like eBay in the United States, or Baazee.com in India, that allows you to shoot digital photos or video clips as raw materials for creative expression on platforms like Photobucket or YouTube.

New technologies also make it easier for Digital Natives to enjoy their friends' works. Young people who like to watch remixes, mash-ups, spoofs, cut-ups, and documentaries created by their peers depend on advanced infrastructure such as broadband connectivity, increased computing power, and greater storage capacity to interact with digital content. Applications and services that help users to search for peer-created content and then organize ("tag") it according to their own preferences have had a positive effect on this creative culture as well. "Tagging" functions as a demand-side, technology-enabled driver of user-created content. Here, "consumers" of user-created content are themselves increasingly turning into creators. More than a quarter of all online Americans (and especially younger users) have used the Internet to tag content, such as news stories or photographs they like, on social bookmarking sites such as Del.icio.us or Flickr. The tags are used to organize digital content such as photos or videos and make the images searchable by others.<sup>24</sup> Tagging is a creative act in itself, through which Digital Natives are adding context to online content. It makes works easier to find in the vast online environment, and because it is user-friendly, it encourages people to create and share content.

While computer processors, storage devices, and communications capacity help to enable large-scale production of information, knowledge, and culture on the Internet, social factors matter, too. Online interactive tools, combined with the willingness to share content and contribute to communities, change the media-consumption habits of Internet users significantly. Taken together, these factors will be among the most important drivers of user-created content in the years to come.<sup>25</sup>

Let's begin with the Digital Natives themselves. What motivates them to create and share digital content like videos, songs, and podcasts? Why are they writing fan fiction, creating mash-ups and spoofs? Why are hundreds of thousands of people working together for no pay to build up a virtual world or compose an online encyclopedia?

The motivations for digital creativity aren't any different from the motivations for other kinds of creativity. Young people have been creative since the dawn of time. The motivations for this creativity will sound very familiar.

In some cases, Digital Natives are motivated by the possibility of financial reward. Not all of the creative work happening online is happening for free. Consider, for instance, Anshe Chung, a virtual land baroness in *Second Life* who became the first real millionaire—in terms of real U.S. dollars. (Her name in real space is Ailin Graef.) She is the first, but by no means the only, person to make a small fortune by creating buildings and spaces within a virtual world for others to use. Anshe Chung Studios has grown into a business employing eighty people in the real world to create things for others in the virtual world.<sup>26</sup>

Other digital creators are looking for fame. Think of Stevie Ryan, who became famous by playing *Little Loca* on YouTube. Sites like YouTube, MySpace, and others that host user-generated content have helped a great many Digital Natives establish themselves as artists and propelled them to real fame. Some are karaoke champs; others are folk singers or lyricists, or contribute videos, photos, or other art forms. And not all of the people generating content are young people: One widower, at almost eighty years old, confessed via webcam that he was addicted to YouTube.<sup>27</sup> Platforms such as Sumo.tv, a TV channel that broadcasts user-generated content, or BBC's "Your News," featuring clips sent in by nonprofessional producers, are reasonably perceived as "talent auditions." While only the very lucky (or talented) few are able to translate their online creativity into real-world fame and fortune, these opportunities inevitably motivate many users to express their creativity.

The vast majority of Digital Natives are dreaming of neither fame nor fortune when they create online. Often, they simply want to express themselves, just as human beings have wanted to do since they first began painting in caves more than 30,000 years ago. The desire to express one's own beliefs and opinions—to share them with others—is central to human nature. Advancements in digital technologies have enabled practically any user with basic digital literacy skills and fast Internet access to engage in self-expression in creative ways and at low cost. The impulse is nothing

new, but the forms of expression are. And the impact on cultures and on how they are understood will be vast.

The creative revolution in cyberspace is not only about who gets to say what to whom. It is also about the question of who gets to control the shaping of culture, the making of “meaning.” This is one area in which the Internet is living up to its hype. The Internet, by giving people the ability to shape and reshape cultural understanding through digital creativity, has introduced something that is truly different. And it is Digital Natives who are best poised to engage in this process.

Consider again the story of Stevie Ryan. Stevie—regardless of her talent—would have faced extraordinarily long odds in striving to reach an audience of 25,000 viewers per week if she had to rely on Hollywood studios to get her there. Similarly, bloggers with audiences running in the tens of thousands today may never have gotten the chance to become star columnists with the *New York Times* or commentators on even local TV news stations. It is no longer the case that Rupert Murdoch and Katie Couric are the only ones who can tell the rest of the world how something happened. In the digital era, thousands of people describe the important moments and create the icons of our culture. And new gatekeepers, like Google and Baidu, Microsoft and DailyMotion, the companies that develop the technologies and offer the services, are emerging to fill the shoes of the old news conglomerates.

Digital technology gives everyone the means to express themselves, and it empowers them to speak—and to be heard by others, including those in power—in ways that previous generations could only have imagined. Creators no longer need to rely on the old gatekeepers like professional agencies, editorial boards, and producers. Digital technology allows creators “to route around” the traditional intermediaries by using the hardware and software in their dorms and homes.<sup>28</sup>

What’s different about Digital Natives, compared to older Internet users who are participating in this creative revolution, is that they take the breakdown of the old hierarchy for granted. Nevertheless, they are proving their ability to exploit the new hierarchies that are emerging in place of the old ones. Digital Natives are growing up in a brave new world in



which the decisions about what will or will not be produced no longer lie with a small number of content-industry professionals. Unlike older generations, which grew up relying on a small cluster of networks, newspapers, and film studios, Digital Natives presuppose their role as shapers of culture.

The fact that so many people can participate in the online cultural commons and make contributions to it has led to a culture that is far more diverse than it was even a few decades ago. And diversity matters. Diversity—wide distribution of information from a great variety of sources, each competing for the scarce commodity of attention—matters because it enhances democratic processes and democratic deliberation. Diversity provides people with the opportunity to access a wider range of perspectives. It draws people into public conversations by presenting ideas and forms of expression that may attract, challenge, or even repel them. In turn, diversity helps to drive participation, by young people and others, in public conversations.

Diversity matters also from a cultural perspective. A rich body of art and literature, varying lifestyles and ways of living together, and different languages, value systems, traditions, and beliefs doubtlessly make our lives more interesting. It's not all good—diversity can lead to too much information and information of dubious quality; there may be too few intermediaries to help us to choose, and we might face social fragmentation over time as multiple perspectives gain acceptance. But on balance, information diversity, with greater participation by young people, is a positive development that we believe will be good for the long-term health of our society.

**T**he transition to “digitally loaded” art forms and types of discourse is not free of challenges. Many parents and teachers, for instance, fear that the Internet will replace other valuable forms of content creation—traditional forms, such as writing a short story on a blank piece of paper by using a simple pencil, or painting a picture with watercolors. This concern needs to be taken seriously. Our own observations suggest that the In-

ternet does not *replace* traditional forms of content creation but rather *adds* to the long list of forms available. Of course, it is up to us to determine whether digital creativity will supplant other forms. Much depends on the choices that we as parents and teachers are making—whether, for instance, we encourage our children to use paper and crayons to make their first drawings or sit them in front of our PCs and let them draw with the mouse. Both from a developmental and cultural perspective, we should certainly be encouraging Digital Natives to use a broad range of media to express themselves—including low-tech media such as pens, crayons, watercolors, and paper, among others.

There are qualitative issues as well, of course. Many parents and teachers worry that the Internet, with its “rip, mix, and burn” culture, only fosters those forms of creation that are based on the practices of mixing and mashing, while neglecting other, more original modes of creativity. There can be little doubt that a large portion of the user-created content is based on previous work; in that sense, some of these derivative works aren't particularly “creative.” But that critique ignores the extent to which creators of all sorts inevitably build on the shoulders of others.

Take Shakespeare as an example. No one would disagree that Shakespeare was a brilliant and creative mind, right? But it's common knowledge among Shakespeare experts that he adapted most of his plays from known, preexisting sources—and in the same way, dramatists, poets, novelists, filmmakers, and other artists later used his texts as the basis for their own adaptations. The point is that even the most creative works are often based on previous ones—creativity very often involves reference to, or even imitation of, one's predecessors.

There are few, if any, examples where Digital Natives have used digital technologies to generate something that is certainly of such creativity and beauty that it represents work for the ages, like a Shakespearean drama. But when photography was first introduced, it was dismissed by many as inartistic by comparison to painting, on the grounds that photography was merely documentary and couldn't improve upon nature. No credible source would say that today when looking at images by Weegee, Robert Mapplethorpe, Man Ray, or Richard Avedon. The video camera seemed like a hobbyist's toy until Thomas Vinterberg produced *The Celebration* in

1998. New information technologies do often give rise to creative new art forms. Though most of what is created today on YouTube or shared on Photobucket may seem worthless at first blush (and much of it may well be on second blush, too), there's ample evidence to suggest that extraordinary works of digital art lie in our future. Digital Natives are likely to be the artists who break us in and show us where this genre is heading.

The increasingly diverse digital universe places more of a burden on the so-called audience in several ways. This participatory digital environment requires all of us to become more media literate. It means that we will increasingly have the opportunity to evaluate news, music, and fiction, and all the other cultural forms that are emerging, for ourselves. It forces us to make choices, and in doing so, it stimulates us to develop the skills and routines we need to navigate the new media landscape.<sup>29</sup> The process of choosing itself is becoming a more and more important skill—and though it is intuitive to most Digital Natives, it is much more challenging to others.

In this future of digital creativity, certain canons are certain to collapse. In a world where an unviewably, unlistenably large number of videos and songs are available at any given moment, no single set of artists is going to dominate the way they used to. Viewers and listeners already face a tyranny of choice. They will have to decide for themselves whether to watch a Fellini film or YouTube videos of cats playing the piano (or, perhaps, a critique of the Fellini film that features piano-playing cats). But, as ever, it's the role of schools and parents to help shape the filters that young people apply to how they spend their time. Meanwhile, given the range of works of entertainment available now, our kids' tastes may well look very different from our own; perhaps we can learn from them as much as they can learn from us.

The most important point is that a participatory cyberspace presents great opportunities for Digital Natives to learn how to create and enjoy new expressive works. This process of creating happens with others and causes us to learn from others, often not in the home or the school but in networked publics online. Digital Natives are learning these lessons every day. And they are open to teaching the rest of us, at least any of us who are

ready to listen. We need to pay attention, because the implications of this participatory culture are substantial for democracy, markets, and the law of intellectual property. If Digital Natives engage more critically with the cultures in which they are growing up, they stand a chance to remake those cultures in unprecedented ways.

The primary benefit of moving to a global online culture that is more participatory and that requires higher digital literacy skills is that it may lead to stronger democracies. This process of strengthening is not of the sort that we usually have in mind—like getting more people to vote on election day. This stronger democracy will stem from more people becoming engaged in the making, interpreting, and remaking of meaning in the culture. That's what Digital Natives are up to when they remix our culture. It could be what they are up to when they decide which news blogs and other sources of information they enjoy—but only if we manage to teach digital literacy effectively. The hardest question we'll have to answer is whether we will attempt to thwart this burgeoning online creativity in Digital Natives in the name of protecting crumbling institutions, or foster it, and the participatory culture it can lead us to.