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Who's in charge of the future? You are. A look at how entrepreneurs are transforming the world.

By Andrea Cooper | Entrepreneur Magazine - May 2007

URL: <http://www.entrepreneur.com/magazine/entrepreneur/2007/may/177124.html>

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In the future, innovative entrepreneurs will fix the health-care mess--and cure cancer while they're at it. They'll solve the global warming crisis and uncover a new fuel made entirely of a blight on the Earth, like mosquitoes. They'll invent multipurpose facilities where their kids can take gymnastics or piano lessons while they pick up their dry cleaning, get takeout dinner, design their latest products via a 3-D video game, and in their downtime, figure out how to conquer al-Qaida.

Well, maybe not exactly. But plenty of experts and visionaries see entrepreneurs as key to the next wave of innovations in industries from transportation (air taxis, anyone?) to nanotechnology. "It's a spectacular time to be an entrepreneur, for people with the gumption," says Watts Wacker, futurist and CEO of [FirstMatter LLC](#) in Westport, Connecticut. The differences from past generations will lie in who is doing the innovating, how they do it and the fields in which they choose to make their money and their mark.

A Changing Economy

In the next decade, entrepreneurs will be "far more diverse than their predecessors" in age, origin and gender, according to January 2007's "Intuit Future of Small Business Report," conducted with the Institute for the Future in Palo Alto, California.

Generation Y, defined as those born between 1978 and 1995, will emerge as the most entrepreneurial generation ever, says Steve King, a co-author of the report and senior advisor at the Institute for the Future. Solo entrepreneurs--about 20 million in 2004, according to the U.S. Census Bureau--will increase in number. Women are growing businesses at almost twice the rate of all business owners, according to the Center for Women's Business Research. And immigrant entrepreneurs make up the fastest-growing segment of all, reports the Census Bureau.

Other basics about entrepreneurship are changing, too. Entrepreneurs might once have been successful focusing on the mass market, but that's become more and more difficult. "The 'average' person has one breast and one testicle. Show me that person," Wacker says. "That was a mass philosophy to do analysis by the mean, to do your research by what's at the center. It's not a route to success in a world where we've made niches."

Yet if Wacker is right that niche markets are critical to success, entrepreneurs will have to identify those markets in what's become a global economy where entrepreneurial innovations are coming from all over the map.

At Purdue University's Office of Technology Commercialization for Discovery Park in West Lafayette, Indiana, associate director Julie Goonewardene might meet with venture capitalists about a professor's new technology at the same time they are comparing it with a technology they've seen in New Zealand. "The positive [of that] is you might be able to come up with a much more sophisticated play if you marry what's happening in the two places," says Goonewardene, whose experience includes raising venture capital for a software company she founded and later sold. "The bad news for the entrepreneur is you've got to be really, really good."

That means the next Bill Gates might just as likely come from China or India as from the U.S. Like Gates, he or she may have dropped out of college or not attended at all. But the growing number of programs and classes for entrepreneurial students are finding audiences at American universities. "More entrepreneurs are going to college because they see the relevance of what they are studying," says King.

Those new entrepreneurs may find themselves in the unfamiliar position of being partners with corporations. "In the past, the big guys looked at the little guys as threats to be crushed," says Dev Patnaik, principal of Jump Associates, a consulting firm in San Mateo, California. "These days, [the little guys] are inspiration for new products or acquisitions."

Food companies such as General Mills and Kellogg's are asking entrepreneurs for ideas about partnering, says Andrew Aussie, 39, president of [Honest Foods](#), a Del Mar, California, natural foods company he co-founded with Mark Oliver, 58, that has been approached by major corporations. "How do you combine the creative ideas of the entrepreneur with the scale of a larger company?" poses Aussie, who led marketing for the natural-food brand Kashi for 11 years and anticipates sales of \$1 million this year for his new venture. "I think that's where there is a true opportunity for entrepreneurs."

Room to Grow

What fields will entrepreneurs transform? The fact that the next entrepreneurial stars might come from outside the U.S. also suggests opportunities in once unlikely places, such as China and India. "Those countries are expanding so fast in terms of generating gross national product," says Mark Rice, dean of the F.W. Olin Graduate School of Business at Babson College in Wellesley, Massachusetts. "The demand for infrastructure to support economic activity and the buying power of the middle class is exploding." Both countries are facing challenges with energy resources, water and the environment, so opportunities are ready for the right innovators.

In the U.S., the green agenda has hit the mainstream. Wacker says someday Americans may hire green consultants to inspect their homes, examine their daily practices and offer recommendations for lessening energy consumption. He also predicts more viable businesses devoted to heat conservation as well as solar and wind power.

There is tremendous interest in investment to help the country become less dependent on oil, says Duane Roth, a biotech entrepreneur and CEO of Connect link www.connect.org, a San Diego nonprofit that works with technology and life sciences businesses. "The reasons for doing it have gone beyond economic incentives," he says. "The mess in the Middle East, global warming—all these things put together would say this isn't a passing fad." Roth believes ethanol, a high-octane fuel produced from renewable resources, "is just starting to happen. The next phase will come much faster."

Energy-saving products have already started evolving. [Gaia Power Technologies](#) in New York City sells the PowerTower, a device designed to give homeowners and businesses enough electricity to run vital appliances and other equipment during power outages. The PowerTower runs off a high-capacity battery or alternative-energy source such as a fuel cell. Because it is charged off the electricity grid, it is an environmentally friendly alternative to a large generator, says Bige Doruk, 40, who co-founded the company with her husband, Ib Olsen, 44. "Generators are oversized, so they [don't] operate efficiently," she says. "By using our unit plus a smaller generator, it's more efficient and pollutes less." Clients who see the benefits include major hotel chains and a large coffee chain. The company projects sales of \$5 million to \$10 million this year.

Innovators are also studying new processes to curb global warming. At the University of Southern California Wrigley Institute for Environmental Studies, researchers are examining how bacteria found in the depths of the ocean might be used to absorb harmful greenhouse gases. Others at USC are exploring technology that could help capture carbon in the atmosphere. The USC Stevens Institute for Innovation, which works with USC faculty and students to get their ideas to market, helps professors and researchers patent and commercialize any resulting technology.

Another crisis that could benefit from creative entrepreneurial minds is health care. The aging of the population in developed countries such as the U.S., Germany and Japan, combined with the growing middle class elsewhere, means more people will have a greater need for health-care services. "Whoever shakes up the industry will take the complicated and make it simple," says Scott Anthony, president of innovation consulting firm Innosight LLC in Watertown, Massachusetts. He foresees more "retail-based kiosks in places like Target and CVS where people can get diagnostics done at very low prices."

As for treatments, genomics, or the study of genes, "will produce a series of breakthroughs," Rice believes. The discipline of nanomedicine, or medical intervention at the molecular level to cure diseases or repair damage, could enable health-care researchers and entrepreneurs to devise a way to send cancer drugs directly to a tumor without harming surrounding cells. Other innovations may include a way to connect ailing humans, such as patients with ALS, commonly known as Lou Gehrig's disease, with surface electrodes that would help them move and speak. Such research is currently underway by Melody Moore Jackson, an associate professor at Georgia State University in Atlanta, and Adriane Randolph, a GSU doctoral student and aspiring entrepreneur.

Randolph, 30, seeks to develop additional real-world applications of brain-computer interface devices, targeting people with ALS and other conditions that leave them "locked" in their bodies. Following her graduation this month, she hopes to obtain a faculty appointment and start a business with her husband, Royal Randolph III, an IT consultant in health care. They want to offer a suite of technology-centered solutions to improve quality of life for people in assisted living centers. "I consider it an outgrowth of my research work with families who need this technology," she says.

Then there's always the possibility of a computer that prods people to take care of themselves. Roth imagines that "feedback systems" will be more prevalent in the future. If someone wearing the system forgets to take his Alzheimer's medicine at 9 a.m., an alert will go off to let his relatives or caregiver know. Roth says such a system could extend to sending alerts if the patient doesn't fill a prescription. Sound like invasion of privacy? Roth believes people will accept the trade-off because they'll see the value in the new technology—as long as they feel the data can't be used to discriminate.

Can we fix the rising costs of health care and fix our bodies? Maybe what will change is the insurance companies. "In the world of insurance, more and more boutique firms are sprouting up, serving narrower niches because large companies are all converging on the mass market," says consultant Andy Birol, author of *The Five Catalysts of Seven Figure Growth*. Wacker also foresees some entrepreneurs creating self-insured circles, in essence acting as their own insurance companies.

Technology has influenced work and home in dramatic ways so far this century. Still, the more tech toys Americans get, the more we can see possibilities we want that could arrive in the next few years.

Let's say Jane Average has music on her computer that she wants to play on her stereo, coordinated with digital photos she wants to transfer to her TV. If she's a bit of a geek--and nothing breaks--she can set up such a system, says Len Rand, managing director of [Granite Ventures](#), a San Francisco VC firm that invests in software and communications. But Rand sees a tremendous opportunity for software that enables anyone to download music, photos, video and chat from one device, such as a computer, and access them from others, such as a TV or cell phone.

For all those frustrated Americans who have wanted to throttle the call-center tech support guy, Rand sees self-diagnosing and self-healing electronics in the future. At the very least, someday a support rep may be able to see inside a computer and repair it without moving it to another location.

A variation of that scenario is happening now with remote control technology designed by [Bomgar Corp.](#) of Ridgeland, Mississippi. Bomgar sells its products to software companies, which then connect to the end user's personal computer. Tech support people can see the screen, move the mouse and type on the keyboard. "It's as if they were sitting at the keyboard," says CEO Joel Bomgar, 27, who started the company with co-founders Nathan McNeill, 25, and Patrick Norman, 28. "The person with the problem can just sit back and watch." When the company introduced its technology in 2003, entrepreneurs offering tech support were able to expand their realm worldwide, says Bomgar, who had sales of \$5 million last year and projects 2007 sales to reach between \$10 million and \$12 million.

A stranger nosing in a computer might sound like a security disaster waiting to happen. But as a growing number of companies vie for the "third screen" (the cell phone), security problems magnify. Envision a cell phone or PDA packed with confidential data and left in a cab. "It could be delivered into competitive locations," says Mark Levine, managing director of Core Capital Partners, a private equity firm in Washington, DC. "That security needs to be upgraded before there is widespread adoption of enterprises to push data to mobile devices." Core Capital has invested in Trust Digital, a company specializing in mobile security.

A related field is fraud management, which can tell you that a specific computer has been used to steal 30 identities, run five credit card numbers or stalk a teen. "The next milestone will be authentication--knowing the guy on the end of the line is [who] he claims to be," says Greg Pierson, 40, co-founder and CEO of Portland, Oregon's [lovation](#), a company he launched with Jon Karl, 39, and Molly O'Hearn, 43. lovation's technology is designed to track and stop fraud, and it had sales of \$9.5 million in 2006. Eventually, says Pierson, "we think you are going to see much higher safety in the virtual world than you do in the real world in knowing who you are dealing with."

Those concerned about privacy could get into what Wacker calls "the next great business": privacy management. In the future, a la Wacker, "I will allow my information to be sold by American Express as long as I get a cut of everything they get out of it. Everything about your life will be chronicled and sold. Your kid will do that for the household starting at the age of 8."

Being someone else is sometimes the point in the world of gaming, where the fields of film, communications, engineering, computer science and fine arts are blending in new ways for new purposes. Alelo, a 12-person company co-founded by USC researchers Lewis Johnson, 49, Andre Valente, 42, and Hannes Vilhjalmsjon, 34, developed a video game-based course designed to educate military personnel in the languages and cultures of other countries. The course, which began as a research project at USC's Information Sciences Institute, provides an "immersive reality" that lets participants start learning communication skills within hours of playing, says Krisztina Holly, vice provost and executive director of USC Stevens. The U.S. Armed Forces currently uses a version for Iraqi Arabic and Pashto. Alelo brought in sales of \$2.2 million last year.

Gaming for fun will continue to grow, predicts Gautam Godhwani, 34, who sold his previous company, AtWeb, to Netscape and is now founder and CEO of the multimillion-dollar business [Simply Hired](#), a search engine for jobs that has received more than \$17 million in VC funding. The 45-person company, based in Mountain View, California, also runs MySpace Jobs, the job site for MySpace users. Not only will gaming's popularity grow, but the innovative technology behind it will also advance, says Godhwani. "Platforms like Wii and PS3 have incredible capabilities that have not been tapped," he says, "and titles like Halo and World of Warcraft have huge online communities." Gamers want bigger, faster and better technology--which means more innovation and development are still to come.

As disciplines merge, look for more innovators from the arts to employ their vision and skills to commercial enterprise. "Some people are talking about how the MFA [Master of Fine Arts] is the next MBA," says Holly. "Companies are looking for creative people to become more innovative."

An example is Jason Feffer, 36, former vice president of operations for MySpace. He recently launched [SodaHead](#), a new website for do-it-yourself polls, or "social voting," that helps people connect with others and compare opinions. (Companies can also use the site to ask consumers directly about products.) The site, which receives most of its revenue from advertising, has each participant create an account that documents his or her votes. The feature prevents stuffing of the electronic ballot box.

The site taps into what Wacker calls "the trend of neo-tribalism"--people's desire to meet others like themselves. Feffer, who developed SodaHead with co-founder Michael Glazer, 35, holds a Bachelor of Fine Arts from the USC School of Cinematic Arts. "Today's challenges can't be left to just scientists or engineers or artists or businesspeople," Feffer believes. "It will take a variety of them combined--people [with] a variety of experiences."

Of course, trying to predict the future is tricky. Forty-five years ago, "no one would have told you to talk to Bob Swanson, who went on to found Genentech and start the biotech revolution," says Scott A. Shane, author of *Finding Fertile Ground: Identifying Extraordinary Opportunities for New Ventures*. "No one would have told you to talk to Bill Gates or Steve Jobs. They were just kids, and no one knew them."

If anyone could foresee the next big thing, that seer would probably keep quiet and invest lots of money in it, says Shane. Venture capitalists "are really smart and successful at making money on technology trends. They can also be incredibly wrong."

Andrea Cooper has written for Time, National Geographic Online and other major outlets.

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