An insatiable hunger to create, create, create

Race for the next ‘big thing’ is torrid as new century hits it stride

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If necessity is the mother of invention, Americans sure are a needy lot. No matter how many breakthrough technologies, time-saving gadgets or gee-whiz gewgaws we hatch, it seems our craving for creation can never be satisfied.

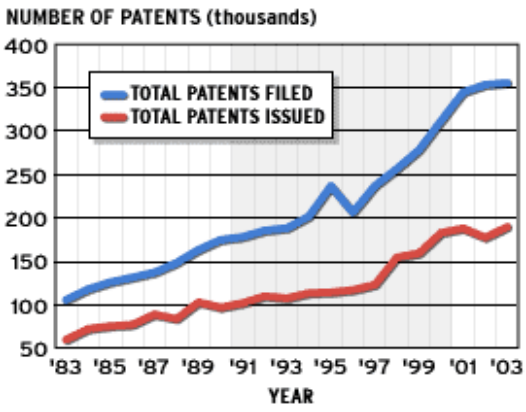
As a new century hits its stride, the race to give birth to the next “big idea” shows no signs of slowing, with tens of thousands of would-be Edisons pushing themselves mercilessly to get their product or idea before the public, the ultimate arbiter of an invention’s utility.

Many are laboring in corporate R&D labs, operating in creative teams and exploring advances in fields that didn’t even exist a decade ago. But a surprising number of those pursuing better mousetraps and other existence-easing contrivances are still garage and bedroom tinkerers.

The U.S. Patent and Trademark Office, which is uniquely positioned to gauge our powerful urge to innovate, registered 355,418 patent applications in fiscal 2003. It granted 189,587 patents in the same period to previously filed inventions that were judged to be “new, useful and not obvious” – the standard by which such intellectual property protections are granted.

An avalanche of patent applications

Both figures have more than doubled over the past 15 years, and contribute to an average wait of a little more than two years from the time of submission of a patent application to the final decision on whether a patent will be issued, said Nick Godisi, commissioner for patents.



SOURCE: United States Patent and Trademark Office

Sheer numbers aren't the only reason the agency's 3,500 patent examiners are buried under a backlog. In the golden age of technology, many patent applications have become incredibly complex and require extensive investigation to determine if they are, in fact, unique.

"We had one application for a biotechnology product filed not too long ago on CDs that, if we'd accepted it on paper, would have run 6 million pages," Godisi said, adding that the library-like length was required to list long genetic sequences.

"The Wright brothers patent was five pages of specs and a few sketches," he said, clearly longing for the good old days.

As evidenced by the agency's database of ideas both great and very small, we wake up inventing (breakfast bacon chips and patties -- U.S. Patent No. 6,699,520), spend the day inventing (convertible hat – U.S. Patent No. 6,704,940) and go to bed inventing (arm pillow – U.S. Patent No. 6,691,353). And as that list suggests, the vast majority of our creations never find a market.

'An extraordinarily inventive age'

But almost certainly, experts say, somewhere in the coursing thought stream are ideas that will alter our lives and society, just as the cellular phone and personal computer have in recent decades.

"This is an extraordinarily inventive age," said Arthur Molella, director of the Lemelson Center for the Study of Invention and Innovation at the Smithsonian Institution's National Museum of American History. "I think we're feeling changes such as people felt at the beginning of the last century, when they suddenly had the ability to travel all around the world."

As ingrained as the act of creation is in the United States – the Patent and Trademark Office is enshrined in the Constitution – the "Eureka!" moment that sets inventor apart from consumer remains a mystery. And predicting where the next great breakthrough will occur is likewise impossible, though fields like biotechnology, nanotechnology, robotics and materials science often are mentioned as most likely to yield the next great technological leap.

“There is a lot of serendipity in a great invention,” Molella said in explaining the futility of attempting such forecasts. “You can go systematically from here to there, but you also have to be one of these people who are ready to see opportunity when it presents itself.”

A shift toward high technology

But the odds of a revolutionary discovery occurring in a science-heavy field probably are greater simply because high-tech inventions make up a greater proportion of patents than they did a quarter century ago.

For most of the last century, one-third of all patent applications typically were mechanical, one-third were chemical and one-third were electronic. But today, nearly half are electronic or computer-related, Godisi said.

The corporate R&D lab has supplanted the garage workshop as the venue where most patentable ideas get their start. But 25 percent of patents granted each year still go to the so-called independent inventors, a percentage that has held steady over the past decade, according to Patent and Trademark Office spokesman Richard Maulsby.

In fact, the small-time inventor appears to be making something of a comeback, according to Bob Lougher, executive director of the United Inventors Association, a non-profit educational organization that aims to “make independent inventors smarter.”

“For a long time, industry didn’t want anything to do with the independent inventor because they were too unrealistic in their expectations,” said Lougher. “But now, corporate America is reaching out to the independent inventor."

Reaching out to independent inventors

As an example of this phenomenon, Lougher points to a “product hunt” currently being conducted by the Dial Corp., a Scottsdale, Ariz.,-based consumer products and food company best known for its namesake soap line.

The search for new consumer products began with a call for submissions on the United Inventors Association Web site and drew hundreds of applications from inventors, all of whom needed to at least have patents pending and a prototype of their product to qualify.

BY THE NUMBERS

Patent scorecard

Top ten companies by industry with the most patents.

- Overall
- Aerospace
- Automotive
- Biotech
- Chemicals
- Computers
- Electronics
- Semiconductors
- Telecommunications

Rank	Company	Number of patents (2003)
1.	IBM	3,434
2.	Hitachi	2,189
3.	Canon	2,061
4.	Matsushita Electric	1,944
5.	Hewlett-Packard	1,755
6.	Micron Technology	1,712
7.	NEC	1,666
8.	Intel	1,606
9.	Samsung	1,577
10.	Sony	1,539

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Source: Technology Review

The list was subsequently trimmed to 65 products, whose creators are now in the process of creating demonstration videotapes or CDs showing how their creations can be used. For the final round, Lougher said, a smaller number of inventors will be invited to the company's headquarters to demonstrate their concepts for Dial brass and the media.

The corporate hunts, unheard of until a few years ago, contain a valuable lesson for would-be inventors nursing a dream of building a better mousetrap, Lougher said.

“Nobody buys ideas,” he said. “They are only interested in something tangible.”

But there are those who pay close attention to the creative process.

Officials at the National Inventors Hall of Fame in Akron, Ohio, believe that reaching out to young people is crucial to encouraging a willingness to “think outside the box” when it comes to problem solving.

Programs aim to spark creativity among kids

In addition to honoring American inventors who “changed our lives or bettered our society in a substantial way,” according to spokeswoman Rini Paiva, the hall sponsors national inventing contests and camps for schoolkids to help foster creative thinking.

“One of the big challenges in getting people to think in an innovative way is to start before they are adults, before they’ve closed their minds,” she said.

While Lougher, the head of the inventors association, endorses the programs aimed at students, he also notes that inspiration is just as likely to strike later in life.

Consider the late Jay Morton, who died in 2003 at 92. A child actor (he played “Stinky” in the “Our Gang”/”Little Rascals” movies), Morton later went into the television production business and earned historic-footnote status as the writer who created the memorable introduction for the original “Superman” series – “It’s a bird; It’s a plane,” etc.

But Morton’s true creative gift wasn’t revealed until many years later, when he cut his foot on a discarded soft drink pull tab while walking on a public beach. As he waited in line at a first-aid station along with other similarly injured beachgoers, he birthed the idea that made him a millionaire many times over – the aluminum can pop-top (U.S. Patent No. 5,062,542).

Why was Morton the one who saw opportunity in bloody feet? That, said Lougher, is part of the mystery of the creative process.

“An inventor is anybody,” said Lougher. “You’ve got successful kid inventors ... and you’ve got grandmothers and everybody in between. Almost everybody has an idea or an improvement. The only difference is that inventors do something with their idea.”