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Small firms' tech role praised

By Alan D. Fischer ARIZONA DAILY STAR

Small businesses play a big role in developing valuable new high-tech innovations, according to a new national report.

Small "serial innovators" with fewer than 500

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employees are gaining patents in high-tech areas including biotechnology, pharmaceuticals and medical equipment. And the patents for small firms are more technically important on average than those for large firms, according to the study, released by the Small Business Administration.

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"It's been our contention all along that small businesses are the innovators," said John McDowell, press secretary for the SBA Office of Advocacy. "Small innovation companies are really jump-starting the economy."

"A great majority of all new technology is coming out of small companies that are often coming out of the universities," said Maria Laughner, bioindustry manager for business development at the Arizona Department of Commerce.

According to "Small Serial Innovators: The Small Firm Contribution to Technical Change":

Small firm patenting is very strong in health technologies and some parts of information technology.

Small firms make up one-third of the most prolific patenting companies - those with 15 or more U.S. patents.

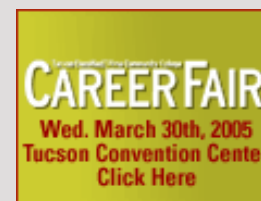
Small firm innovation is twice as closely linked to scientific research as large firm innovation, on average, and is substantially more high-

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tech or leading edge.

Small patenting firms are about 13 times more innovative per employee than large patenting firms.

A small firm patent is at least twice as likely as one from a large firm to be among the top 1 percent of highest-impact patents.


Bob Breault of Breault Research Organization Inc., a Tucson-based optics company, said small high-tech companies have fundamental advantages: "We're more agile and we tend to have innovative people."

Carl Russell, vice president and project coordinator for the Bio Industry Organization of Southern Arizona, echoed that view.


"They don't have all the bureaucracy and culture the large companies have," Russell said. "In a pharmaceutical company, you have thousands of workers and tons of internal regulation. You can't move very fast, and innovation gets slowed down. When you get into a little company, you can move a lot faster," said Russell, who headed the Tucson Technology Incubator and spent decades working in economic development and business incubation. "You can change your project on a dime and move in a different direction."

Of the 42 bioindustry firms working with the commerce department on a possible move to Arizona, two have more than 100 employees and the rest range from two to 40 workers, the commerce department's Laughner said. The average Tucson biotech firm has the equivalent of 30 full-time positions, she said.

"The small businesses offer a big impact. They may have a low




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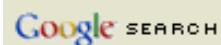


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number of jobs, but with high salaries averaging around \$50,000," she said.

And while small businesses fare well at developing and patenting important new technologies, bringing them to market may be a different story.

"It's doing the next step - the commercialization of something - that is the hard part," Laughner said. "You have a great idea, you have a prototype, but going to manufacturing, oh, what a mess."

A lack of funding is often the problem.

"The disadvantage for the little guy is he doesn't have the muscle, money or the distribution side to get the product into the market," Russell said.

"If the small firm innovates, the large firm can license the product or buy the company," Breault said.

Technologies developed by small companies are especially important because they are frequently used as the basis for additional new technologies, the report said.

"If it is developed by a little guy, it tends to be the core of what becomes the technology as it progresses," Russell said. "They do the first idea that is patentable, then the big company comes in and gets a license on the patent and they improve on it. The original ones are the most important, but a whole raft of stuff is developed as a product changes."

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