

The Magazine for Growing Companies

Inc

Special Issue

Inno-  
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Step 1:  
Start with a clean sheet

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# Built to Invent

*Innovation* and *entrepreneurship* may not be perfect synonyms, but semantically the two are at least kissing cousins. “Entrepreneurs innovate,” writes Peter Drucker. “Innovation is the specific instrument of entrepreneurship.” Having emerged largely unscathed from its ill-fated tryst with the new economy, innovation remains a thing universally revered. You can never be too rich, too thin, or too creative. Call me anything; just don’t call me derivative. ■ But innovation is no mere vanity plate on the nation’s economic engine. Technological innovation trumps capital accumulation and allocation of resources as the most important contributor to growth, say Harvard economists John McArthur and Jeffrey Sachs in the *Global Competitiveness Report*. That report doesn’t even mention nontechnical innovations by the likes of Starbucks, Wal-Mart, and Dell, companies that famously moved and shook without inventing much more than a strategy. For business the imperative is clear: eschew the tussle for incremental market share in favor of new wealth created by new customers drawn by genuinely new products and services. ■ This month *Inc* launches a three-part series that explores innovation as it applies, in turn, to organizations, leaders, and markets. In this issue we focus on continuously inventing organizations, companies designed expressly to churn out ideas. The 50 small businesses considered here—all of which have amassed at least 30 patents in the past five years—are tearing up turf in many of today’s riskiest and most competitive industries. ■ “Companies living off a single great insight are the corporate equivalent of dead stars,” write innovation experts Gary Hamel and Peter Skarzynski in their essay for *On Creativity, Innovation, and Renewal*. “In spite of their sparkle, they’re cold at the core.” We hope this special section provides you with a wealth of ideas that set your own cores boiling. **BY LEIGH BUCHANAN**

## The Innovation 50

1. Isis Pharmaceuticals	Number of patents: 452	26. Applied Medical Resources	Number of patents: 58
2. Tessera Technologies	Number of patents: 183	27. NeoMagic	Number of patents: 58
3. Icos	Number of patents: 153	28. Angeion	Number of patents: 57
4. Neurogen	Number of patents: 146	29. Corvas International	Number of patents: 57
5. Ramtron International	Number of patents: 137	30. Cardiac Science	Number of patents: 56
6. Heska	Number of patents: 134	31. Cell Pathways	Number of patents: 56
7. InterDigital Communications	Number of patents: 116	32. Aradigm	Number of patents: 54
8. Augustine Medical	Number of patents: 108	33. ArthroCare	Number of patents: 54
9. Immersion	Number of patents: 107	34. BioNumerik Pharmaceuticals	Number of patents: 54
10. Ranpak	Number of patents: 103	35. Emisphere Technologies	Number of patents: 52
11. Valence Technology	Number of patents: 90	36. Foster-Miller	Number of patents: 50
12. Xoma	Number of patents: 85	37. NCT Group	Number of patents: 48
13. Alliance Pharmaceutical	Number of patents: 83	38. AirNet Communications	Number of patents: 47
14. Ligand Pharmaceuticals	Number of patents: 82	39. Capstone Turbine	Number of patents: 46
15. Energy Conversion Devices	Number of patents: 81	40. Geron	Number of patents: 44
16. Lynx Therapeutics	Number of patents: 80	41. Cygnus	Number of patents: 43
17. CardioGenesis	Number of patents: 77	42. Staktek	Number of patents: 42
18. Caliper Technologies	Number of patents: 76	43. Kopin	Number of patents: 40
19. Tularik	Number of patents: 75	44. Nartron	Number of patents: 40
20. Igen International	Number of patents: 74	45. Multi-Tech Systems	Number of patents: 38
21. Cell Therapeutics	Number of patents: 68	46. Advanced Tissue Sciences	Number of patents: 36
22. Hybridon	Number of patents: 67	47. Isco International	Number of patents: 36
23. NeoRx	Number of patents: 63	48. Hyperion Catalysis Int.	Number of patents: 34
24. Physical Optics	Number of patents: 62	49. MicroUnity	Number of patents: 32
25. QuickLogic	Number of patents: 60	50. Tensar Earth Technologies	Number of patents: 32

# Are Customers a Good Source of Innovative Ideas?

**“Usually the most innovative products are the things people don’t think they need when they come to the marketplace.”**

—PHIL EGAN, CEO, TENSAR EARTH TECHNOLOGIES

Centuries ago in China, workers buried adobe blocks to shore up buildings. In the 1960s steel became the standard. Then, in the 1980s, **Tensar Earth Technologies** created something new in the world of soil-reinforcement: a polymeric grid as strong as steel and elastic enough to go where no steel had gone before. It was, says CEO Phil Egan, the birth of an industry.

But Tensar’s customers didn’t know that. “It was like when DuPont came up with nylon,” says Egan. “People didn’t know what to do with it, so DuPont had to come up with applications—like hosiery.”

For the past two decades, Tensar has been busy dreaming up applications for its “geogrids”: in retaining walls, for building on top of closed landfills, and for holding up the roofs of underground mines. Many ideas emerge from twice-a-year off-sites where leaders “totally blue-sky for two days,” says Egan. “In our last session we had 43 ideas. We culled that down to 18. Of the 18 I’m hoping to get 5 or 6 gold nuggets.”

Tensar also has an applications group that “identifies the applications before customers come to us,” says Egan. “Then we have to demonstrate for the customers the value these new technologies create.”

“Our new ideas come from sending our engineers out to customers and letting them roll around in the mud together.”

—GEORGE CALHOUN, CHAIRMAN, ISCO INTERNATIONAL

George Calhoun sums up the source of his company’s great ideas in one word: customers. **Isco International** makes front-end systems and filters for wireless communications. The company has customers worldwide, and Calhoun, the chairman and former CEO, makes sure they get face-to-face attention from engineers. “One of our best people is in China now,” says Calhoun. “He’ll come back with observations that will stimulate new thoughts about how to design our systems.” Ideas that are captured during customer visits are submitted in a “trip report,” so nothing slips into the cracks.

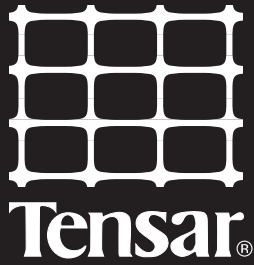
Calhoun says that customer input produced one of Isco’s most important new products: a filter that eliminates in-band interference on wireless transmissions. It’s not something that would likely have come straight from the lab. “Not to demean pure research,” says Calhoun, “but pure research is a very small part of what we do.”

## The Innovation 50

50.

### Tensar Earth Technologies

Atlanta, GA	Number of patents . . . . .	32
Provides engineering services for building-site development	Revenues (\$000) . . . . .	\$70,000
	Total staff . . . . .	200



## ***Technology-Driven Earthwork Solutions***

Tensar Earth Technologies, headquartered in Atlanta, Georgia, is a full-service provider of specialty products and engineering services. Our products and services are used in the cost-effective development of commercial, residential, industrial and municipal sites, as well as in transportation and environmental infrastructure.

We specialize in site development solutions for common earthwork problems such as grade changes requiring retaining walls, and poor soil conditions affecting the cost of pavements, parking lots or building structures. Our solutions are based on proprietary engineered systems that incorporate our unique products, services, and application technologies.

Patented Tensar® Geogrids are the primary component of our innovative earthwork solutions. These polymeric geogrids offer unmatched strength and durability on a job site and provide cost-effective alternatives to traditional construction methods.

For the competitive edge, let us help you reduce costs and increase property value on your next project. Call us at 800-TENSAR-1 for a no-obligation review of your site plans or visit our web site at [www.tensarcorp.com](http://www.tensarcorp.com).

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