

# Missed opportunities in nano

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Nanotechnology companies are missing opportunities to help corporate buyers integrate nanoscale components into advanced products, experts told UPI's Nano World.

"Companies are saying, 'If you come to us with a new wonder material, it doesn't mean much, but show us how to incorporate this material into a product for us, and that's of real value,' and that's where missed opportunities are now -- that's what buyers want," said David Lackner, a senior analyst at nanotech market advisory firm Lux Research in New York City.

Nanotech often reaches markets through large corporations that buy from smaller nanotech specialists. In confidential interviews with 20 large corporate buyers -- averaging \$33 billion in 2004 revenues -- Lackner and colleagues discovered plenty of nanoscale components are available, but the professional services required to make them useful through integration with existing processes are rare.

"Companies are just getting to the point of control over nanomaterials to integrate them into macroscale structures and create products," Sean Murdock, executive director of the NanoBusiness Alliance, told Nano World. "As penetration of nanomaterials becomes more widespread, and we see more and more demand for megaton volumes, there will clearly be a need for a fair amount of integration engineering. The next evolution of nanotechnology will look increasingly for services to be bundled with product to add value."

A few companies are making moves in nanotech services, however, Lackner said.

"Nanostellar markets a replacement for the precious metals that the automobile industry uses today in catalysts, but doesn't offer the material itself," he said. "Rather, it offers a proprietary service, with a quantum simulation tool at its core, to develop nanocomposite material candidates."

Lux Research sees nanotech services emerging in healthcare and life sciences, particularly in making existing blockbuster drugs more effective. For instance, Abraxane is made of nanoparticles containing the tumor-fighting drug paclitaxel bound to albumin protein. Abraxane can be taken without the toxic solvents normally used with paclitaxel, which means more of the drug can be taken with fewer side effects.

Lackner noted that Debiopharm in Lausanne, Switzerland, has partnered with NanoCarrier in Tokyo to reformulate their cancer treatment Eloxatin. NanoCarrier's micellar nanoparticles could "allow Debiopharm to extend the lifetime of its cash cow, which generated \$1.5 billion in revenue in 2004," he said.

"More pharma giants will seek such capabilities as the impact of initial successes like American Pharmaceutical Partners' Abraxane kicks in and as reformulators like Elan deliver more winning products," Lackner added. "Companies that enter this underserved field with low-cost deals to prove their worth will transform themselves into long-term partners deserving premium prices."

Instead of providing services along with products merely as a means of helping selling products, nanotech specialists might also consider launching services customized to make life easier for a buyer's clients.

"If you create a customized solution for a buyer that helps them create a stronger relationship with their customers and helps them end up with a longer term deal, that is much more valuable," Lackner said.

He said buyers should take the initiative to create forums, through which nanotech specialists can be informed of high-level problems and obtain direct feedback about current products. That is what Hewlett Packard is doing with Molecular Imprints in Austin, Texas, or the microparticle and nanoparticle company Cabot, in Boston, does with its Fine Particle Network, he added.

"Services such as InnoCentive and NineSigma, already used today by companies like Procter & Gamble for nanotechnology needs, provide a low-cost way to broadcast unmet requirements to a network of innovators worldwide," Lackner said.

Buyers might also spin off their own startups to address the missed opportunity of nanotech services.

"For example," he continued, "since Rüdiger Iden's internal research group at BASF develops analytical methods at the nanoscale that may sometimes be only tangentially relevant to BASF's core business, why not fill the gap for analytical services by spinning the capabilities off as a separate line-of-business with an aim of a trade sale down the road? Such a spin-off company would enjoy instant market validation because of its heritage and would open new markets not squarely in the sights of the parent company, generating pleasantly unexpected returns."

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