

# The 50 Most Innovative Companies 2012

Our third annual list  
of the companies  
leading commercial  
invention.

By STEPHEN CASS

What is a TR50 company? It is a business whose innovations force other businesses to alter their strategic course. TR50 members are nominated by *Technology Review's* editors, who look for companies that over the last year have demonstrated original and valuable technology, are bringing that technology to market at a significant scale, and are clearly influencing their competitors.

Eighteen of the companies we selected for the 2011 TR50 continue to meet those criteria, and return this year (seven are making their third appearance). Of course, that means that 32 companies we picked for last year's TR50 are no longer on the list.

Sometimes companies fall off the list because of a decline in the prospects of an entire sector. For example, despite being strongly represented in 2010 and 2011, advanced-biofuels companies are absent this year. This sector has generally failed to scale up production to a level that can begin to make serious inroads into the use of conventional oil. While its technology still has potential, it currently has little influence on the direction of the fuel or transportation industries.

In other cases, individual companies lose the vision that made them worthy of the TR50. One such example is Netflix, which we selected

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last year for piggybacking a video-on-demand service onto its existing DVD-by-mail subscriptions. Netflix had already disrupted the business model of brick-and-mortar video rental stores and cleverly maneuvered to prevent itself from being disrupted in turn by streaming video technology. But later in 2011, the company tried to split the streaming side of its operations from its DVD service, an ill-fated decision that provoked public ridicule and the loss of hundreds of thousands of subscribers before the company reversed course. Suddenly, Netflix wasn't able to clearly dictate its own agenda, let alone that of the entertainment industry.

With still other companies, it's not the vision but the execution that is lacking. If the selection process for the TR50 had occurred a few months earlier, we probably would have included Amazon on the list (as we had the previous two years), citing the release of the Kindle Fire. The Fire initially looked like a serious competitor to the iPad for dominance of the tablet computing market. Even though it had fewer functions than the iPad, it cost much less and made clever use of Amazon's extensive cloud infrastructure. But as consumers racked up more daily experience with the device, more than a few of them found their initial satisfaction turning to disappointment. Many of the things the Fire was supposed to do, it didn't do well enough; customers complained of connectivity problems or difficulties with the touch-screen navigation. Although the company has released software patches that it claims will address most

users' concerns, launching a product that frustrated many customers showed that Amazon is still a challenger rather than a leader when it comes to merging consumer electronics with the cloud.

Finally, some companies fell off the list simply because they were crowded out by others with big new ideas. Some of these newcomers are shaking up established fields. Dropbox has made its mark in the previously sleepy world of online storage. Babcock and Wilcox is developing small reactors that could change the regulatory and economic calculus of nuclear power. And Athenahealth is reinventing health insurance as an exercise in information technology.

Still others are breaking into new territory. PatientsLikeMe is transforming the notion of how a clinical trial must be conducted by encouraging patients with chronic conditions to share intimate details online. EADS is turning 3-D printing (originally created for the production of prototypes) into a full-scale manufacturing technology. And LanzaTech is turning carbon monoxide emissions into fuel.

As a group, the TR50 companies represent our best judgment of the commercial innovations most likely to change lives around the world. Do you agree with us? Which companies that didn't make it onto the list should have, and which do you think didn't deserve a place? Let us know at [www.technologyreview.com/tr50](http://www.technologyreview.com/tr50). 

STEPHEN CASS IS THE SPECIAL PROJECTS EDITOR OF *TECHNOLOGY REVIEW*.

## MATERIALS

### Siluria

Private

New

**Why:** Siluria converts cheap and abundant natural gas directly into longer-chain, higher-value molecules that can replace the oil used for chemicals, plastics, and liquid fuels.

**Key innovation:** A catalytic process—compatible with the existing production and distribution infrastructure—that can efficiently and economically transform methane into longer-chain hydrocarbons.

**Private Company**

**Headquarters:** San Francisco

**Founded:** 2008 **Funding Raised:** \$33.3 million

