

## Should your company 'crowdsource' its next project?

By: Mary Brandel

**December 06, 2007** When [Constellation Energy Group Inc.](#)'s commodities group needed a new system recently, it considered the usual sources of labor: internal staff, a consultant, a contractor, offshore programmers or a mix of all four. Instead, it turned to a somewhat less traditional technique: Ask programmers from all over the world to compete with each other to write the best code for the system. When all is said and done, hundreds of programmers will labor over a system that, in the end, will represent the work of less than 100 developers, whose code will be hand-selected by Constellation and TopCoder Inc., the company that is managing the competition.

Welcome to the world of crowdsourcing, defined by Jeff Howe, who maintains the [Crowdsourcing.com](#) blog, as "the act of taking a job traditionally performed by a designated agent (usually an employee) and outsourcing it to an undefined, generally large group of people in the form of an open call." Howe is also writing a soon-to-be-released book on the topic.

Sound exotic? It may now, but get used to it. Everywhere you look companies are turning to a wide variety of crowdsourcing models to do everything from programming, to market surveys, to product development, to R&D. They're doing this in part because of the burgeoning number of people clamoring to share their thoughts, talents, ideas and critiques on all sorts of Web 2.0 platforms.

Thanks to the success of user-generated sites such as YouTube and Wikipedia, for instance, newly empowered consumers will increasingly demand having a say in product development plans, says Jonathan Edwards, an analyst at Yankee Group Research Inc. in Boston. "Crowdsourcing is an easy way to satisfy consumers' demands to be heard and to get free feedback at very little expense that is impossible to get otherwise," Edwards says.

Also compelling is the increasingly popular notion among companies desperate to stay competitive that the best, most direct and possibly cheapest sources of innovation lie outside the corporate walls, among customers and other previously hidden sources of talent. "The focus of every company today is on innovation, which has led to an 'all-hands-on-deck' mentality," Edwards says.

Recent examples of crowdsourcing abound. For instance:

- Through a platform dubbed [IdeaStorm](#), Dell Inc. invites users to post ideas and either promote or demote each other's suggestions. Highly rated ideas get pushed to the top of the site. Since IdeaStorm's inception in February 2007, according to Edwards, Dell has gone to market with more than 20 user-generated suggestions, including reinstating Windows XP as an alternative to Vista on its consumer PCs. "The crowd has spoken, and Dell is delivering," he says.
- Tesla Motors Inc., a San Carlos, Calif.-based start-up that's working to build an all-electric sports car, recently asked readers of its blog to download a spreadsheet it developed, fill in information related to their home's circuitry and electrical load and submit the resulting data, which will reveal their home's available and required amperage. The company -- which will use this data to design its home-charging stations -- chose this technique because it was having difficulty finding other ways to determine the biggest EV charging circuit that could be installed in a typical house.
- Netflix Inc. has staged a contest that's open through 2011 for people to improve upon its current tool that predicts how much a viewer is going to like a given movie based on his stated preferences. Winners can earn anywhere from \$50,000 to the grand prize of \$1 million.

### Crowding around a system

In Baltimore-based Constellation Energy's case, the \$19.3 billion energy company didn't stage a completely open call; rather, it worked with [TopCoder](#), a Connecticut-based company that stages regular coding competitions, ranks developers who compete and then makes this talent available to businesses that need systems built, also through a competition-based model. TopCoder currently has about 130,000 members from more than 200 countries.

A TopCoder project manager assessed the needs of Constellation Energy's commodities group, broke up the system design into dozens of small components and released about half of those component requirements to member developers, who could send in their best coding effort. (Constellation decided to build some of the components in-house.)

Submissions -- which continue to roll in -- are rated using a standardized scorecard, and winners are rewarded anywhere from \$500 to close to \$2,000. When all the components are complete, TopCoder will work with Constellation to integrate them into a functional system.

"At any given time, four to five competitions are going on for those 250 components," says Ken Allred, managing director of IT in Constellation Energy's commodities group. For each component, anywhere from 10 to 30 people submit code, he says, including developers from as many as 14 different countries. "It's an incredible virtual workforce that is literally always on task," he says. "It's almost like a sport, where people see each other as competitors, and that's what drives what we've seen as high-quality code."

TopCoder itself uses a crowdsourcing model to compile a catalog of reusable Java and .Net components that it uses to supplement developer efforts. Its members compete to produce the best code for the catalog, and winners continue to get paid royalties every time the code is reused. The company also uses crowdsourcing for ranking and testing code, with members grading each other's efforts.

### **Crowdsourcing benefits**

Although Constellation's system is not yet complete, Allred expects to save both time and money using TopCoder's crowdsourcing approach. Part of the cost savings comes from using TopCoder's catalog of reusable components. As for time savings, Allred estimates coding to be about 50% faster than it would be if he used internal staffers.

Of course, the components still need to be assembled to create the final system, which is a step that wouldn't have to be taken using a traditional approach. Still, Allred says, "I'm confident it will be faster." Development cycle time is very important to the Constellation Energy commodities group, which Allred says requires a high degree of agility and speed.

Fast-moving businesses are exactly the types of companies that Carey Schwaber, an analyst at Forrester Research Inc., sees using crowdsourcing for systems development. "They're willing to take a risk using a totally different process because the way they usually build is too slow," she says.

Another less quantifiable advantage, Allred says, is code quality. "Clearly some of the people doing this are top guns who bang C# 18 hours a day, seven days a week," he says. "Even our top developers have to sometimes say, 'Wow.'"

And because the programmers are global, Allred is also finding their perspectives to differ from those of U.S. developers. "The creativity and innovation of how people are rationalizing these designs and building components enables us to interject a perspective and approach that normally we wouldn't have access to," he says.

### **Crowd control**

Of course, crowdsourcing is not all upside. For one thing, Edwards says, you can't allow the inmates to run the asylum when soliciting customer opinions as Dell is doing. "When you open the floodgates, anyone can hop on there and talk about anything," he says. "There may be people who don't like the brand or are unhappy with the stock performance."

To get around that, he says, it's a good idea to focus the discussion around one area and clearly define what you're trying to achieve and what the community is all about. "The dialogue you get will only be as intelligent as the wisdom of the crowd," he says.

Another idea, he says, is to create a private community, which you can do through platforms from companies such as [Think Passenger Inc.](#) and [Leverage Software](#). According to Edwards, Hewlett-Packard Co. and Salesforce.com Inc. are using Leverage Software to create private social networks for customer, partner and developer relationship-building and have threaded discussion and poll functionality for information-gathering.

Other crowdsourcing models limit audience participation by natural selection. People who join [InnoCentive Inc.'s](#) "open innovation marketplace," for instance, tend to be scientists, engineers, inventors and business experts because they're called upon to respond to highly complex challenges posted by organizations, or "seekers."

If an InnoCentive participant's idea is selected, he can be rewarded up to \$100,000 for it. "It's not your average crowd," Edwards says. "Companies aren't just extending their labs to the masses and if it works, we'll give it a whirl."

Another downside, Edwards says, is that the audience who's participating may not be very diverse, trending toward the upscale, educated, technically savvy crowd. Companies need to be careful not to let these narrow groups overly sway their decision-making.

For instance, he says, Dell has decided to install Linux on its PCs as a result of high demand for the open-source operating system on [IdeaStorm](#). "The suggestion got multiple thousands of votes, but [Dell] had to be careful that it wasn't just 10,000 Linux enthusiasts who don't represent the mass market," he says. "You can't let the crowd drive your entire product or service line."

Others worry that some crowdsourcing models will end up exploiting people for cheap labor. For instance, on iStock International Inc.'s [iStockphoto](#), companies can buy stock photography from amateur photographers for a fraction of what they'd pay a professional.

At the same time, Howe argues on his blog, "Crowdsourcing is enabled by communities, and communities are held together through shared passion. I just can't square that with any concept of exploitation." Contributors to iStockphoto are thrilled to have their photos selected, he says, as are contributors to [Threadless.com](http://Threadless.com), which crowdsources T-shirt designs.

Allred points to some downsides of using crowdsourcing for system development. For instance, it can require developing additional skills on staff, he says. Allred had to create a role inside his IT group to assemble the components into a finished product.

Schwaber agrees that questions remain around this development approach. "TopCoder has done a good job of providing visibility into the process, but it's still exotic," she says.

Another caution is to be careful not to give away competitive information. For instance, after breaking the system design into several hundred component pieces, Allred says, his organization retained 250 components to design in-house because they required using business logic and rules that Constellation believes give it a competitive advantage.

Intellectual property theft is another concern. Anyone who contributes an idea through a crowdsourcing platform has to be careful not to hand over a great idea on a public forum and never get credit for it. Who's to say that a company that doesn't pick your solution as the "winner" won't nevertheless take your idea and run with it anyway? InnoCentive handles this by requiring all participants to sign an agreement protecting confidential information, and it prevents third parties from seeing and stealing others' ideas by allowing only the organization that posted the problem to see proposed solutions.

Despite these downsides, Edwards encourages companies to try their hand at different crowdsourcing approaches. "It's a gray area, but that's a good thing because it enables companies to take on what they're comfortable with," he says. Particularly with increasingly competitive marketplaces, he says, "You really have to try these things today."

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