

# Mechanical Engineering and Engineering Management

March 9, 2005

## improv engineering

By Jean Thilmany

**A comedy producer imparts some idea-generating tips he's learned on the job.**

Question: What do engineers and improvisational comedy have in common?

Answer: More than you might think.

Or so says one Minneapolis comedy entrepreneur.

Whether they're creating a new product or a joke based on the political snafu of the moment, engineers and comedians are creative professionals who use the same idea-creation process, according to John Sweeney, owner and executive producer at Brave New Workshop Comedy Theater.

Engineering managers would do well to study the method that improvisational comedians use when they take a suggestion from the audience and in seconds turn it into comedy, Sweeney said.

In 1997, Sweeney and his wife took over the Brave New Workshop in Minneapolis, where Louie Anderson and Al Franken cut their teeth.

Flying by the seat of your pants is actually a skill that can be taught, says an improvisational comic who shares his art form with engineers.

Sweeney's theater hosts classes and performances in improvisational comedy, and puts on shows made up of sketch comedy. An improv comic takes an audience member's suggestion (for instance, to name a type of doctor) and in an instant creates a gag around that suggestion (usually involving a proctologist). Sketch comics work from a script. Think *Whose Line Is It Anyway* versus *Saturday Night Live*.

Sweeney studied the process of creating comedy at a moment's notice close up during his eight years at the helm of the workshop. The workshop's idea-generation process, which Sweeney dubbed the funnel process, uses improvisational techniques to create sketches and is easily transcribed to product innovation, he said. The actors work out the sketches using a process akin to the way engineers come up with new product ideas.

He has presented his findings to engineers at Hewlett-Packard, 3M, Medtronic, and other companies. He also wrote and published a book, *Innovation at the Speed of Laughter*, which is coming out in April. It outlines the workshop's product development process and offers management principles gleaned from Sweeney's years in improvisational comedy.

"I've taken what we learned about how individuals create good improv scenes, how they communicate, what skills they have as idea generators, what cultural skills they have, and applied those skills to the workplace," Sweeney said. "What I found can help increase the number and the quality of ideas engineers come up with."

### A QUICK SIX HUNDRED

Sweeney's seven-step development method—the funnel process—works for engineers just as easily as it does for comics. His troupe never wavers from it, he said.

This is how it breaks down.

At the first step, the top of the funnel, team members generate ideas. The more outrageous the idea, the better. Quantity is the goal here, not quality.

"We have a ratio for how many ideas it takes to get to a great idea," Sweeney said. "Our ratio is 24 to 1. So that works out to 600 one-sentence ideas to produce 25 actual products. Our shows have 25 different sketches and skits, which we think of as our products.

"We actually keep so strictly to our process that we don't allow the team to go on to the next step until we've hit 600 one-sentence ideas. We've found that to be the most consistent number," he added.

A lot of those first ideas don't see the light of day. But that's not the point, Sweeney said.

In presenting his thoughts to engineering companies, Sweeney has found that engineers often fall short in the number of ideas they generate at the top of the product-development funnel, he said.

Often engineers simply don't realize they need to get their thoughts, no matter how crazy, out on the table. Maybe another team member can take that outlandish idea in a completely new direction.

"When engineering managers are putting together the project-management model, they don't allow themselves to get the quantity of ideas they'll need to really get the mathematics going," Sweeney said.

"Six hundred is the number of ideas at the top of the funnel and 25 is the number of products at the bottom of ours," he said. "In between, we have a number of interactions. We have the potential of 600 thoughts interacting and blending and spawning new ideas."

Sweeney encourages engineers to just brainstorm ideas, even if they clearly can't be made or won't fit product specs.

"I ask them to just forget about what the payload should be and start generating ideas" he said.

"That's a tough one for them," he added. "But when they see the mathematical potential 600 ideas give them, they reconsider."

The second step in Sweeney's funnel process calls for refining those ideas.

Every team member chooses approximately 20 or 25 ideas from the original 600 and breaks them down into building blocks. The same thing can be done for potential products.

For a comedy sketch, the building blocks are the satirical point, the characters that might appear, and the action points of the scene. Obviously, for engineers the building blocks would look much different, although they'd also be broken into components, such as the materials and performance specifications.

Sketch-comedy writers work in collaborative teams and, of course, it's no different for engineers. That's step three in the funnel process: collaboration.

Because the players aren't married to their ideas at this point, it's time to let go of the ones that aren't working.

"We're very conscious at this point in the process that certain ideas can organically lose their ability to make us passionate about them," Sweeney states in his book.

Then it's time to engineer the product, which is step four in the funnel process. For the workshop team, that means writing the first draft of a script. For an engineer, that means the first design. Group members give feedback about that first product, making sure to use wording that separates the work from the person.

In live theater, putting the product before a focus group—the fifth step in the product-innovation process—happens when the show is performed for a test audience. At the workshop, the troupe puts on bits of shows in development for

select audiences to gauge feedback. Engineers can get customer reaction to a potential product by putting it before more traditionally organized focus groups and getting feedback.

Now it's time for step six—to road test the product.

The entire show is readied from front to back and run before preview audiences.

The troupe then reworks the show as necessary, based on audience reaction—read "laughter." This part of the process is akin to prototyping, then retesting the re-engineered product.

"We've had to develop consistency in a manufacturing process filled with variables," Sweeney said. "When I talk about the funnel process with engineers, they tend to think 'Wow, innovation and improvisation don't have to be being silly or working in an advertising firm or wearing cool glasses. We look at product creation like a process, just like the theater person does."

According to Sweeney, the difference between an improvisational theater group and an engineering company isn't as vast as it may seem. Both are rife with creative potential and both are aimed at producing an innovative product.

The comedy team doesn't manufacture ideas so much as it discovers them through a quantifiable process. Sweeney hopes that, when it comes to generating ideas, engineering managers can take a page from the improv comic's manual.

#### What's My Line? Comedy Skills for the Engineer

You're an engineer called into the conference room for yet another team-building seminar. A sense of dread wells inside. Get ready for an afternoon of forced heartiness and cringe-inducing, meet-your-neighbor-type exercises.

Maybe another motivational speaker will take the pulpit, your coworker jokes. That'd be okay, he says, because he could use another 40 winks.

Janice Kelson, marketing manager at a large, Minneapolis-based engineering company, has been there and expected to suffer through it again, but at a recent session, she opened the conference-room door instead on clusters of coworkers laughing themselves sick.

Before the end of the day, she had freely called out to coworkers the first word that came to her mind when thrown an imaginary ball and had appeared in a made-up-on-the-spot skit as the dim housewife of an English lord. Audience members had suggested the setup for the skit, and Kelson and her band of players improvised it at a moment's notice.

The marketing group had turned into theater students for the day, studying improvisational comedy techniques under the guidance of improv comedians and immediately putting their new skills into practice.

Kim Thomassen (left) and Gust Alexander are known as The Stagebenders.

Give a tweak to the techniques actors use to break down barriers between self and audience, and they offer engineers tools useful in the workplace, said Kim Thomassen, one-half of the Los Angeles-based improv duo, The Stagebenders. He and comedy partner Gust Alexander regularly teach theater skills to groups of engineers.

In improvisational comedy—where actors make up sketches in response to audience suggestions—the action is fast. There's no time to think, which opens up all kinds of creative avenues. This style of comedy can be seen most notably in reruns of the popular Drew Carey-hosted television show *Whose Line Is It Anyway?*

The techniques, with names like "word ball" and "minister's cat," demand that people push past natural reticence, gain self-esteem, and work on their communication skills while having fun, Thomassen said. The Stagebenders regularly puts on seminars for engineering groups.

"Through the theater games, you build better teamwork, better communication, and get a better understanding of other people. And you get to know your coworkers a little better," Thomassen said.

Word ball is a simple, early improv warmup that can help team members get over their shyness and get them thinking creatively. In this exercise, team members stand in a circle, with a person holding an imaginary ball. He or she throws it to another person, simultaneously saying the first word that comes to mind.

The person who catches the ball has to throw it immediately, at the same time saying the first word they think of that's related to the word tossed to them.

One person might say "green" and toss the ball. Depending upon how far along the game is—with creativity running high—the catcher might yell out "iguana," then toss the ball to another, who might say "scales."

When John Sweeney, who owns a comedy theater, the Brave New Workshop, in Minneapolis, leads seminars for engineers, he has eight engineers-turned-improvisers-for-the-day stand in a semicircle and count to 10. The trick is that no one knows who will say the next number. In the beginning, two people often call out the next number together.

"But relatively quickly, the group organically begins to individually count to 10 without two people counting at the same time," Sweeney said.

Groups that successfully count to 10 with no one stepping on another's toes count higher. The record so far has been 148, hit by seven employees of a Bismarck, N.D., utility company.

"People think they can't work together until they have a plan in place," Sweeney said. "They think they need to know each other and all these things need to happen before a team can gel. But we're doing a simple 10-step process without sending 50 e-mails back and forth and setting up conferences to coordinate things."

Teamwork isn't about being an extrovert. It's a skill that can be taught.

A number of engineers move on to take improv classes at Sweeney's Workshop to improve their communication skills. Those engineers recognize that their newfound improv skills carry over into their work life. Oh, and some of them just might want to be discovered.

— Jean Thilmany

[Return to Index](#)

© 2005 by The American Society of Mechanical Engineers