

The Idea Man

By: Stephen Cass

PHOTO: IAN KELTIE

Invention is Doug Hall's life. In his teens he created and sold magic and juggling kits, and today he is familiar to millions of viewers in the United States as an acerbic judge on the reality TV show "American Inventor"—think "American Idol" but with struggling inventors instead of wannabe pop stars—which recently ended its first season. But in between his teen hustle and his stint on TV, Hall established himself as an innovation guru and in 1990 founded the Eureka! Ranch, in Cincinnati.

Eureka! Ranch works with companies to develop new products, and it counts such major corporations as Ford Motor Co. and Johnson & Johnson among its clients. While the ranch refuses to discuss specific products that it has helped develop, it claims that the average U.S. home uses 18 products or services either invented or improved by its employees. Hall has also authored the **Jump Start series of books**, aimed at innovators. IEEE Spectrum Senior Associate Editor Stephen Cass talked with Hall about what it takes to stay on top of the invention game.

After your teenage entrepreneurship, you got a chemical engineering degree. How did you go from there to helping blue-chip companies be more creative?

I worked for Procter & Gamble as an engineer for a summer and realized that pulp digesters were not my future! I got into the company's brand management group, and I worked there for 10 years. My technical degree was a huge help, because I could serve as an interface between the production people and the sales and marketing people. As a result, I ended up creating the Procter & Gamble Invention Team, where we did product development, packaging, and market positioning all at the same time. So I ended up becoming an inventor—not just of products but of marketing ideas, too, because often marketing ideas have consequence for the product and the brand.

What should engineers developing products know about marketing?

There are three laws of what I call marketing physics, three things that matter. The first is "overt benefit," which, in a consumer's words, is "**What's in it for me?**" The second is "real reason to believe," which translates to "**Why should I believe you?**" And the third is "dramatic difference," or "**Why should I care?**" **The classic mistake that engineers make is to talk about features, not benefits.** Engineers will talk about the technology and assume that people will know why it's important and believe that it works. But it doesn't work that way. The job of marketing is to communicate the wonders of the product or service in a way that consumers can understand. It's not very difficult—it's trivial compared to the technology stuff. But inventors need to have absolute clarity about what their message is: what's the benefit, what's the reason to believe, what's the dramatic difference. And if you're not dramatically different, give it up. You have a commodity, and you're going to sell it for commodity prices.

What else trips up inventors?

Lack of flexibility—you've got to be flexible, got to be willing to see a flaw and fix it. Lack of honesty, too—you've got to have some people who are willing to tell you the truth, the whole truth and nothing but the truth, because people get into delusion land. I saw it on "American Inventor," and you can see in corporate offices where you talk

to somebody—they've been working on a project for nine months—and you shake your head because they're obviously wasting their time. But they can't see it. To use the classic phrase, "You got to know when to hold the m, know when to fold them."

How do you help companies innovate?

In the early days, we tried the classic approach, which is to take a bunch of logical left-brain people, like engineers, and try to make them right-brain kooks using things like the brainstorming approach most people are familiar with. But about eight years ago, we stopped doing that, because most brainstorming is extraordinarily painful to most folks. **Instead, we developed a system for logical brainstorming, where you apply judgment throughout the process, testing ideas against those questions of why should I care, what's in it for me, and why should I believe you?**

But isn't the point of brainstorming to suspend judgment to permit greater creativity?

Yeah, but that's a pile of crap. There's no data to support that "no judgment" rule. Look through years of literature on the topic and what you'll find is that the rule that Alex Osborne came up with for brainstorming [when he coined the term] in 1953 creates a lot of quantity but no quality. A sort of diarrhea of the mind. The fact of the matter is—this is not art. This is what I call capitalist creativity. If you want to do art, then go to art school. But this is about ideas that you can sell, and so you need to stay very focused.

We also use an artificial intelligence system called Merwyn to analyze ideas. It's built on the premise that things fail for certain reproducible reasons and succeed for certain other reproducible reasons. We did an analysis on the success of new products and found 77 traits that were predictive of success. We picked traits that were timeless, that have been true for years, and that approach allows you to use a written concept as a product prototype—which is the cheapest form of prototyping you could ever do—and cycle ideas through Merwyn rapidly.

How did you get involved with "American Inventor"?

One of the producers called me, and I thought they were joking. But I'm known for being very blunt and honest with people. Clients say I can be a pain in the butt, but they know that I'm always going to tell them the truth. Apparently, there's a shortage of people that'll do that, because the producers had potential judges do a screen test. The producers purposely showed us bad ideas to see what we'd say. Most people developed corporate constipation, saying, "Well, it could be..." My response was, "No! It's a dumb idea!" And so I got the job.

Were you surprised by the number of people who auditioned their inventions on the show or by the crazier inventions?

No. I wasn't surprised, because I've done a radio show on inventing for many years. The 400 or so people we TV judges saw were prescreened from about 4000, and they were selected to make sure we had a good measure of circus sideshow. "American Inventor" is not really about the inventor or the invention. It's about humor or tears—it doesn't matter, just that it's entertainment. It's about the ratings—which is a lesson, by the way, that we can all learn. All companies can learn from reality TV. Often in our business world, we get confused as to what's our purpose, but reality TV producers have one purpose, which is the ratings. Inventions are a means to get

ratings. Even if I disagree with the producers often, I have to respect the absolute clarity of focus that they have.

Some people claim that America lags the rest of the world in innovation. What's your view?

The United States is 23rd in the world in terms of the percentage of young people studying science. That is a cancer. We are living on borrowed time. We've got to figure out how to fix our math and science curriculums. We've got to make engineering cool. Right now people want "emotional intelligence." Get over it. SAT scores matter. We've got to celebrate our engineers. The sales and marketing people have had a good run, I'm happy for them, but it's over—they're not pulling it off anymore.

We have to get back to making real products that make a real difference. You can't trick people into paying a premium for commodity stuff anymore. The Internet is beautiful because it's gotten rid of the marketing trickery. You used to be able to get away with the fact that your product was the same as everybody else's, because nobody'd figure it out. Now with the Internet, everybody figures it out instantly.

I am very optimistic about the future. I do believe in the engineering world, that the dominance of sales and marketing people in business is going to crash and burn soon. We're going to see a resurgence of old-fashioned R&D and real engineering because companies are going to figure out they can't win by making clones. Cost-cutting does not increase top-line growth. The geeks will rise again. That's why we're moving our Eureka! Ranch toward a focus on supporting them.

What's with the Hawaiian shirts?

And the bare feet, don't forget the bare feet! One, it's comfortable. Second, I found out that it makes clients uncomfortable, and my attitude is: if this is going to make you uncomfortable, you ain't seen nothing yet. Because I want to help clients with new ideas that are feasible, but I also want to shake them up. And heck, it's personal branding. I mean, my problem now is that I can't go out in public wearing the stupid shirts because everybody recognizes me!

To Probe Further

Doug Hall's Web site is at <http://www.doughall.com>. For more about "American Inventor," visit <http://abc.go.com/primetime/americaninventor>.