

Building an Inventive Organization

Jeff Mauzy Interview, Ubiquity e-zine

Jeff Mauzy is co-author (with Richard Harriman) of the book "Creativity, Inc.: Building an Inventive Organization," published by Harvard Business School Press ([click here to purchase](#)). He was a Partner at Synecticsworld.

UBIQUITY: Let's say that you are hired to give advice to an information technology company. When you show up on day one, how do you determine whether or not it's a creative company?

MAUZY: I look for the ease with which people talk to each other and how much they expect to be listened to. Does it seem that they can take risks, that they can throw out ideas, and that they feel those ideas have a chance of having an impact? If it feels like they don't, or they're scared, or they're putting ideas out tentatively, well, that's an indication that it's not a highly creative climate.

UBIQUITY: Do you think most companies tend to be creative, or tend not to be creative?

MAUZY: Information technology companies have a better chance of being creative because of their heritage and age. Most of the country's largest companies are built on an old industrial, hierarchical heritage. A limited few people make decisions for the company and many people have to follow those decisions. That tends to stop much of the experimentation. The information technology companies that I've worked with -- startups, entrepreneurial groups, small consultancies -- were born out of a different framework with a flatter organization. Here in Cambridge many have come out of the MIT mold. Everybody is assumed to be intelligent. "We're all talented, skilled people adding our bit to a collective capability."

UBIQUITY: Marc Andreessen, who's well known as a technology innovator, said, "Innovation doesn't come from the big company. It never has, and it never will."

MAUZY: Good for Mark. I like his energy. I can identify with a piece of what he's saying. It shouldn't be this way though. Our experience at Synecticsworld has been that, first off, everybody is born creative. Creativity is not a talent and not a skill -- it's more a trait common to all of us. Everybody has the capability of great creativity; but much of

that is bulldozed over by the educational and business systems until people lose touch with their own talent.

UBIQUITY: Is it generally understood that creativity is not a talent and not a skill?

MAUZY: It's well understood among my colleagues. For instance, a fellow from California tested kids at the ages of three and four. He found that almost 95 percent of the kids scored near the top of a creativity test. By the time kids get to age 14, about 60 percent score at that level. By the time they are 24 years old, only two percent score in the top two percent. Most of that loss comes from acculturation, making tradeoffs, learning to conform, learning to borrow knowledge. It doesn't come from not being creative. People are born with that. Another colleague of mine, a psychologist at Harvard, described the idea of learning as "a creative encounter with the unknown." As such, it is essential to living.

UBIQUITY: How do you describe creativity?

MAUZY: We describe creativity as the ability to come up with new and appropriate ideas to a situation. Not that the ideas have to work, but just that they're new and there's a reasonable explanation why you got that idea for the situation.

UBIQUITY: How is creativity different from innovation?

MAUZY: Innovation is the ability to make those ideas change the order of the world. Creativity is more psychological and personal, and innovation is more sociological and interpersonal, because it takes a coalition of people to effect change today. When thought of this way each is a separate discipline for study

UBIQUITY: Is your definition of creativity in danger of being insufficient? You said that it's the ability to come up with a new, appropriate idea, whether or not it's right. I guess "new" is the soft word there. You can have an idea that's a not "new" idea.

MAUZY: People keep looking for the big breakthrough, for example, Einstein developing the Theory of Relativity. One of our clients parsed it this way. He said, "There seems to be big 'C' creativity, the Einstein kind. And there seems to be small 'c' creativity, the everyday kind." To him, 95 percent of the work of the world is done with small "c" creativity. People don't see it as being creative.

UBIQUITY: Apply it to something that we're not used to talking about. If you watch basketball or some sport, you'll find announcers saying, "That was a very creative play." How does that fit into general creativity?

MAUZY: I would imagine an announcer looking at a play and saying that it was creative because he hadn't seen it before. It's out of the norm of how people usually respond. People create plays in basketball and baseball all the time. When you get a person who is the best at their game, they are no longer playing by rote memory. They're making up plays in a very fast, shifting environment, where their own flexibility and ability to gauge what's going on in the world, and not only act appropriately, but act in a way that surprises their opponent, is all very creative. They are making their world anew on a second-by-second basis. It's incredibly creative.

UBIQUITY: Can the same concept be applied to business organizations?

MAUZY: Absolutely. Companies do the same thing. Think of that basketball player we just talked about, living in a world that's constantly shifting in three to eight dimensions all the time around him or her, and then translate that person to being not Larry Byrd but an organization that is involved with an ever-changing world of customers, vendors, government regulations and overseas competition. It must be just as flexible and fast moving on even more fronts than the basketball player.

UBIQUITY: Does everyone in the company need to be creative? How is that creativity expressed?

MAUZY: Most, if not all, people in the company should be creative. The people in human resources need to watch the talent front, and train people inside the company to be creative. People in finance have to be aware of everything from what they could be doing, which is investment techniques, to things they should not be doing, which is the Enron type of work. They need to react quickly to changes in the world and in the economy. It gets down to this: The company would be better off if everybody used more of their natural talent being, what you would call in sports, "on play" all the time. In organizations those people who are not in touch with their own creativity generally provide resistance to new thinking. They are thus anchors, but in an impeding way, not a stabilizing way.

UBIQUITY: In his old routines the comedian Steve Martin liked to present himself as a self-described "wild and crazy guy". Is there much "craziness" involved in creativity?

MAUZY: People must have an ability to tap into risk and the unknown, and be able to tender an idea that's outside a comfortable norm. If you cannot walk outside that comfortable norm, you won't be able to get new ideas. Most people who are very creative are not crazy but they are able to tap outside the comfort range. The reason I don't like to use the word "crazy" is that it's a negative term. If somebody says that what you did was crazy, then you think, "Maybe I was being not too bright there." So you'll be more careful next time. It's a pejorative word. I am being a little dramatic, but it's a violent word for people who want to take risks in their thinking.

UBIQUITY: How do you recognize creativity when you see it, and how do you inspire it when you don't see it?

MAUZY: There are four important dynamics that underpin the creative act. One is motivation. Say you are standing where you are and you have an expected future. You don't have to be creative to make that expected future happen. It's going to happen whether you effect anything or not. Yet you have wishes and wants that are not in that expected future. So you have a gap between your expected future and your ideal future. You may have many ideal futures. Each one of those has what Jordan Peterson, a psychologist, calls valence -- an amount of emotional wish to get to that ideal future.

UBIQUITY: Can you give an example?

MAUZY: A quick example is my son, who is now college-age, who has played soccer since he was five. I was sort of the manager of the soccer team -- not good enough to be the coach but I could get everybody to clap. I wanted Danny and the team to be better, so I spent every Saturday morning getting food there and getting the parents to clap, et cetera. I'd spend many hours a day thinking about, how can I get Danny to love the game and love what he's doing? My emotional valence towards Danny was high, so that my motivation pushed me to keep thinking of new ideas. That emotional valence was from the heart. It was intrinsic. There have been many tests that prove that intrinsic motivation is the same kind of motivation that happens with high creativity. Extrinsic motivation, doing something for money or for fame, tends to decrease the quality of creativity.

UBIQUITY: How do you inspire intrinsic motivation in an organization?

MAUZY: One thing I do is to get people to start thinking about what they want. I want their hands-on building of their goals. I like to allow their personally driven curiosity into their work. Curiosity is the second dynamic. How do you get that to happen? Fear hurts curiosity, just as extrinsic motivation hurts creativity. Maslow, for example, talked about how you can never get into self-actualization, becoming what you want in your heart to be, if you are worried about where your next meal is coming from. So you have to get rid of the fear first, and then the curiosity will start to come out, driven from intrinsic motivation.

UBIQUITY: How do you get rid of fear in a company?

MAUZY: First, you have to see it. It gets bound up in the behaviors and expectations of the organization's climate. The behaviors that cause fear, judging ideas negatively first, calling new ideas crazy, not listening when someone has something to say, are so habitual they are almost invisible. But they are ubiquitous. When we work with teams to increase their creative interactions we start by videotaping them working on a problem together. Then, when we play the tape back people are surprised at the dozens of small put-downs and discounts that permeate what seemed like a normal discussion. The truth is though, it was a normal discussion. We behave according to what we expect. I don't know which came first, the expectations that we need to find and destroy bad ideas before they can get too big, or those behaviors we see in others around us. But we need to see this, and understand the ramifications on creative thought, and then we can begin to deal with fear in our environment. So just like we need to look at small instances of creativity, we need to look at the small instances that cause fear. If we only look at the big glaring things we miss the real opportunity for change.

UBIQUITY: What is the third dynamic?

MAUZY: The third dynamic is the ability to make new connections and break knowledge connections apart. It has to do with how we build our ideas of how the world works. Let's start it this way. When you are a baby, when you cry you get fed. Eventually, it happens often enough that your mind sees a structure and says, "If I cry, I might get fed." You experiment and it works. You suddenly learn how to save your life. From then on it starts to get more complicated. You synthesize structures of knowledge that help you predict the world and survive. Sometimes those predictions don't work. Let's pick a simple example. Say, your car won't start. So you look for solutions. You open the hood and you see a couple of wires are apart. You don't know

if that has anything to do with the car not starting but you experiment. You put the wires together and the car starts. Aha! You've learned something. That moment of not knowing was a breakdown in your information, and you had to create a new solution to make that happen. You look for connections, and when they work, you've added to your knowledge. It's all a creative act.

UBIQUITY: So that's the making new connections part. Explain what you mean by "breaking knowledge connections."

MAUZY: Beyond making new connections you must be able to tear down old connections. Some people get scared when their car doesn't start. They think, "I don't know anything about cars. This is going to cost me \$1,000. I'm going to call a mechanic and just throw money at it." These people are stuck with a couple of well-entrenched knowledge structures, or beliefs: cars are too hard to understand, and they themselves are mechanical idiots, so they won't try even the simplest experiments. These beliefs impair their ability to experiment, to be creative, and to learn. The breakdown of entrenched beliefs like these is the other part of the creative act. The problem with most companies is that they're OK with people getting new ideas and making connections but they're not OK with people challenging the assumptions, i.e. beliefs, about how they run their business.

UBIQUITY: Talking about change, does a company need to force change to encourage creativity?

MAUZY: A company needs to show that it tolerates change -- that it will allow a new idea to happen. You can force change like we're forcing change in Iraq (I'm not going into politics here). Or you can allow change to happen. If you allow change to happen, then you allow everybody to be creative and participate in it. When you have a different idea than mine you provide conflict for me, which helps me to challenge my own assumptions and break them down. If you provide that conflict without attendant fear, that is you challenge the idea but not my person or intelligence, quite often, I will be able to put together new thoughts that might be stronger next time.

UBIQUITY: You mentioned four dimensions.

MAUZY: The last one is the ability to assess and evaluate how your emerging idea fits your world. You have to decide which ideas are better. Ultimately, when you find the idea that you like, your motivation evaporates, and your need to be creative around

that specific issue with it. I guess an illustrative way to think about this was that Copernicus took 36 years to decide that the earth goes around the sun, and publish his idea. If Copernicus was working for a large corporation today, he'd probably have a day or two. That's where companies tend to fall down on the job. I know we live in a competitive, fast-changing world. But sometimes organizations call for answers long before they really need them. The more time that employees have to chase the best ideas or the ideas that drive their hearts, the more they will learn to appreciate their own creativity again.

UBIQUITY: How do you get the people at the top to listen?

MAUZY: I'll give you an example from a medical processing company on the West Coast called Guidant. Guidant was interested in maintaining its original entrepreneurial nature. It now has about 12,000 people. One of their experiments was to give every person in the company a course in how to know what's important to them personally and how to start the right conversations. In addition, the top 800 people in the company got a second course in how to listen. The purpose was to let everybody in the company know that their opinions are valued and to give the company a structure to prove that employees and their ideas are important.

UBIQUITY: Somehow I'm reminded of the cartoon "Dilbert". How accurate a portrayal of organizational life do you think that is?

MAUZY: I laugh because it seems so accurate. It's a fairly cynical view. I have a fairly cynical view myself sometimes. But I've also met some really smart people in companies at every level. They're trying their best to be good. I think the system sometimes trips people up. They've inherited a system that they don't control. That might be where that cynicism comes from.

UBIQUITY: Can creativity be moved into a different arena? In other words, can people move into a different environment and succeed and be creative?

MAUZY: In my talking with certain strongly creative people, I have found that they learned something in their lives. One thing they learned is how to catch their tentative, sensitive fleeting thoughts that are new. They appreciate those thoughts and nurture them until they become ideas that are strong enough to give to their clients or their organization. Another thing that those creative people have learned is how to protect themselves in a hostile environment. They have an ability to maintain their self-

confidence, and to keep their own visions of what they'd like to accomplish, how they think and who they are. By maintaining that vision and continuing to learn how to nurture their ideas, they can survive as they move from one milieu to another. Many creative people have been doing this since they were kids. They've always been creative. Some people figure out how to do it again later in life. It's something that everybody can do.

UBIQUITY: Is there a way to prevent the loss of creativity?

MAUZY: Years ago, Teresa Amabile, a psychologist who teaches at Harvard Business School, did experiments with elementary school kids. She wanted to learn if you can inoculate a child against the loss of his or her creativity. She gave teams of kids a creative task that they had to work on together. In the middle of working on their tasks, Teresa inserted certain statements, which she called "creativity killers". One was, "You have to be perfect." Another one was, "You've got to hurry. You're going to get behind." Afterwards, she talked to them about how their creative task went. She wanted the kids to recognize when they were being creative, when something started to kill that creativity and to help them come up with alternatives for when that happens to them again.

UBIQUITY: Let me ask you to say a word or two about mathematicians and programmers. How do you see their functioning as creative people?

MAUZY: The entire world of mathematics and programming was built out of nothing first. Many creative people have contributed to these emerging sciences. Mathematicians, those who deal with the abstract thought of how mathematics is built, are almost poets to me. They're in love with this topic and they're moving concepts back and forth to try to understand the outer realms of where mathematics can go. Programmers do the same thing. The world of programming has moved leaps in the last ten years. Programmers and mathematicians are changing their world on a daily basis. I spent some years as an artist at MIT where I had a chance to observe really bright engineers, mathematicians and programmers. I formed the opinion that many of them are frustrated inventors. They want to understand how the world works. That's what got them into science. If you talk about learning being a creative encounter with the unknown, they're trying to do it with the science behind it. They're making up experiments, they're learning, they're pushing the world, they're seeing where they can go. It's an incredibly creative act.

UBIQUITY: Let's talk about your consulting practice, Synecticsworld.

MAUZY: Synecticsworld was founded in 1960. Collectively, we were the invention design group for Arthur D. Little. We left in 1960 to form an invention company, but we found out very quickly that the newer the idea we got for our clients, the more our clients hated it. We decided instead to concentrate on helping our clients come up with their own ideas. Once they were getting their own ideas, we could spend our time teaching techniques for helping them come up with even higher degrees of speculation. We found the clients loved the new ideas because they got them themselves and, because they created the ideas from their deep understanding of their companies, the ideas fit their organizations better than anything we could create.

UBIQUITY: How did you help them; by listening to them?

MAUZY: We started by videotaping, well, audiotaping at that time. We audiotaped everything. When a meeting or an experiment went really well, we'd go through the tapes to see what happened. Eventually a pattern started to show up. The next time we worked with a group, we would try to get them to work in those patterns, and we found that creativity would go up. We've been doing this for nearly 50 years, at thousands of meetings around the world.

UBIQUITY: Are you still videotaping everything?

MAUZY: Most of the time we don't need to do that anymore. We watch and observe and debrief. The most important knowledge tends to fall into three disciplines. One of those is creativity: How do people think, how do they get ideas when they're stuck, how do they raise the level of speculation? We're now trying to understand the process of insight, when you get that fundamental axiomatically correct new view of the world that you never had before. How can you make that happen? A second area, or discipline, is climate. Again, we try to build a climate where people can take risk and experiment. When the climate is right, teams will bond around new ideas to make them happen. The third discipline is "thinking strategy". How do you put a vector on all of this thinking so that something happens from it? There are many forms of thinking that are involved. There's gathering of information, there's analysis, there's reasoning, and there's creative thinking. There's also judgment and analysis and decision-making. When you line these necessary thinking styles up right you get plenty of speculative thought and freshness in the ultimate solutions. When you line them up wrong you get stuck or ho-hum solutions. Those three things -- creativity, climate and thinking

strategy -- are the areas that we watch. Our job is to translate that to our clients.

UBIQUITY: How much of your work involves training?

MAUZY: About 30 percent of our work is training. About 60 percent of our work is facilitating. We will design and run meetings and help an organization think through a problem, to arrive at new solutions that are creative and doable so that everybody in the group or the company buys into making that idea happen. Often an engagement can take several sessions, each session designed to step thinking to the next logical stage, without losing maximum creative potential. The last 10% involves companies that want to increase their overall creative potential. These involve change programs.

UBIQUITY: What types of problems would you help an organization solve?

MAUZY: Sometimes it's invention, sometimes it's building new business and sometimes it is building competitive strategies. There are many corporate issues that call for new thinking; we're always interested in the level of creativity and the climate people work and think in. Another area of interest to us is how do you build this creative capability up on a large scale within a company? Our most recent investigations are on what we call systemic creativity, where the entire organization gets more creative. To do this more people in the company have to become tolerant to the freshness of the ideas coming from everyone else. Individuals throughout the organization need to be more creative, teams need to work in ways that support the thinking of the individuals and craft their new ideas into innovations. And the organization as a whole has a complicated role in supporting all this creative activity.