

NCWIT Interview with Ping Fu

BIO: *Ping Fu is Chair, President, and Chief Executive Officer of [Geomagic](#). She co-founded Geomagic and has led its growth from start-up to worldwide leader in the digital shape sampling and processing (DSSP) industry. Geomagic has attracted more than \$8 million in capital from private and institutional investors, and won millions of dollars in research innovation grants from NSF and NIST. The company has been profitable since 2002, tripled its employees over the last three years, and expanded its presence globally.*

Before starting Geomagic, Ms. Fu was Director of Visualization at the National Center for Supercomputing Applications, where she initiated and managed the NCSA Mosaic software project that led to Netscape and Internet Explorer. She has more than 20 years of software industry experience in database, networking, geometry processing, and computer graphics. Ms. Fu is a respected thought-leader and frequent keynote speaker at international conferences. Ms. Fu has received numerous awards for her management achievements, including the Ernst & Young Entrepreneur of the Year for the Carolinas, worldwide "Fast 50" executive by Fast Company magazine, Entrepreneur of the Year by Business Leader magazine, and business woman of the year by Triangle Business Journal. In 2005, she was named Entrepreneur of the Year by Inc. magazine, the leading publication for American entrepreneurs. She holds graduate and post-graduate degrees in computer science and Chinese literature, and is an adjunct professor at Duke University.

Lucy Sanders: Hi, this is Lucy Sanders. I'm the CEO of the National Center for Women & Information Technology, or NCWIT. And with me today is Larry Nelson from w3w3.com. This is one in a series of podcasts with fabulous women who have started IT companies, and today we are interviewing Ping Fu. Ping, welcome.

Ping Fu: Thank you. Good meeting you all.

Lucy: Ping is the President and CEO of Geomagic. Ping, we're hoping before we get into the interview questions that you could tell us a little bit about Geomagic, and in particular, the DSSP technology that you base it on.

Ping: Sure. Geomagic started using DSSP technology for manufacturing and our mission is to bring all design end-products into the 21st century as personalized products, in what we call "mass customization".

Lucy: It's a really interesting technology. When I was reading your site, it almost does the same thing for 3-D as scanners would do for 2-D. You've done some pretty interesting applications around modeling the Statue of Liberty...

Ping: Yes, our software has been used in many applications like reconstruction of the Statue of Liberty. We've also been used on NASA's Discovery shuttle to guarantee the safe return of the shuttle. And it's also been used for Olympic sports to design custom-made bikes for the Olympic teams, so that they will win championships. Design toys...you name it, anything in 3-D, we do it.

Lucy: You have a Ph.D. in computer science, and you're also on the Duke faculty, as well as being the CEO of a high-tech company. What technologies do you see out there, in addition to DSSP, that strike you as being really innovative?

Ping: I think space travel is very innovative. I think in a couple of years, you could go from New York to Tokyo in two hours. In fact, the flying time is only maybe 20 minutes and the rest of the time is getting up and getting down.

Just in general, I think transportation is very interesting because it alters our relationship in terms of space and time. So whenever you have a new form of transportation or a new form of communication, it always has a huge increase in productivity, just by shrinking space and time between people.

Other technologies that I think are really interesting are medical health care and bioscience. The next level of understanding of bioscience is not just for health care, but also that the human being is a natural computer. Currently if you look at today's computer, it's 0's and 1's and that's pretty dumb. But if you use human genetic code as a base for computing, it's going to be much smarter.

Lucy: Well Ping, you have such a phenomenal background, you could have done so many things. What is it about being an entrepreneur that really makes you tick?

Ping: Well I actually call myself a reluctant entrepreneur. I didn't think that would ever be my career. It wasn't something I thought I was going to do, but I was in the middle of this Internet craziness. And since I was the person originally initiated in the browser that became Mosaic and eventually Netscape, I just got pushed into it in some way. But after I took that road to become an entrepreneur, I found it very interesting. It's tremendous personal growth and it's the best way to make a difference, and that's what makes me tick.

Larry: Ping, we've now had an opportunity to talk to a few business people who also happen to be parents. Who has, in your life, influenced and supported what you've done? Did you have a mentor or mentors?

Ping: I would say I have lots of mentors in my career: it could be my peers, it could be my boss, and it could be someone I just talked to on the roadside. I don't really have one person that I look up to. But generally, I have a natural curiosity; I like to find out how things are being made. If there's something I don't understand, I don't take the surface answer to it. I like to dig deeper into why and how. And I think that curiosity really is what makes me want to learn from others about things that I don't know, or talk to people who can give me some insight.

I generally don't look up to someone well-known or someone who is well-respected as a mentor. In Chinese there is an old saying, if you walk with two other people, one of them can be your teacher.

Lucy: One of the things about mentors is that they can give you a lot of advice, get you through some of the rough times in your career, as well as celebrate your success, which gets us to our next question around the toughest thing that you've ever had to do in your career.

Ping: I'm sure it's ahead of me, not behind me...if I think about what's the toughest thing I would have to do, it is probably retirement. I don't know how to quit. I think ups-and-downs just don't seem to me to be that tough.

Growing your company is tougher than survival in some ways. In survival mode it's very easy to motivate people. And fear is one of the biggest motivations. When you're doing well, it's actually harder to do. It's all comparative in terms of what's tough and what's easy. My way of looking at it is just, if it's tough today, tomorrow when I look back it's probably the biggest lesson that I could learn, and that's about it.

Lucy: Well, you really have insightful answers. If you were sitting here talking with a young person (because our hope is that a lot of young people will listen to these interviews and gain insight from them), what advice would you give about entrepreneurship and their journey in that direction?

Ping: The advice I want to give them would be that if they want to do something and they have passion to do something, go ahead, do that. But before you do that you should understand what you have to offer. It's not necessarily whether or not I can do it or I cannot do it; would I fail, would I succeed?

Everybody will fail in their lives. If you don't fall you can never learn how to walk, right? So falling down is not necessarily a failure. I think what I found talking to a lot of young people is that they fear failure. And I'm telling them that failure is not something you should fear – what you should fear for is that you don't know what you have to offer.

Lucy: So true, because if you find what you really have to offer, you're going to love doing it. And if you fail you'll just keep trying and trying again.

Ping: Right. A lot of times they say, "I want to start a company." I say, "OK, what do you have to offer? Are you going to be a product company or a service company?" "Well, I don't know." I say, "Well, you need to know that. Are you going to have a company that sells product or sells service?" If you don't know, you can't start a company.

Larry: Ping, let me ask this question. You've been through a great deal in your life. You've accomplished a great deal, everything from your beginnings in China to Bell Labs and building a company from scratch. What personal characteristics do you think you either have or you've cultivated to help you become a successful entrepreneur?

Ping: Good question. I think that learning on-the-fly is very important. Other people would call it street smarts or book smarts. I think most people have book-smarts. Learning on-the-fly is more the street-smarts thing. You can figure out all things very quickly by yourself.

Creativity is important because every day as an entrepreneur you have to find creative solutions for problems. Because there's a lot of issues that will come up. And endurance – don't give up because something is difficult or you think you are going to fail or someone else tells you're going to fail. I think tenacity leads to greatness.

Lucy: Ping, the last question I have for you is, with all that you have going on in your life, how do you bring balance to your personal and your professional life?

Ping: That's actually pretty easy: I don't. It's a really hard act, if you think about it. I just blend them into one. And then I'll decide which one is my priority today. I don't see them as separate or opposing forces. And I don't try to balance them.

Lucy: So you just look at what the priority of the day is.

Ping: Yeah. Exactly. And whatever that is I will just do it. Especially as an entrepreneur. You're pretty much in control of your own time and what you do. So, if you have something personal that's more important, nobody's going to tell you not to do it.

Lucy: That's great advice. I think that the key is blending them as opposed to separating them. You've really achieved a lot, as Larry mentioned, in your career. I have no doubt that you probably never will retire. Give us a sense of what's next for you personally and for your company.

Ping: For the company, I always wanted to create a place where people love what they do and people like who they work with. I don't really look at success and what big things I need to do. I look at contributions. And this is what I tell my daughter too. I said, "Everyday you ask yourself, 'What did you contribute today to yourself, to your family, to the environment in which you live, to the organization in which you work?'" It doesn't have to be all; it doesn't have to be big. You should be happy. If you have contributed nothing, you ask yourself why.

And that's what I do every day. I think about what I contributed. It makes tomorrow better than today. So, what's next? Always try to make tomorrow better than today.

Lucy: Thank you very much, Ping. It was really great talking to you. And we appreciate your time away from your busy schedule for the interview. I want to remind listeners where they can find the podcasts: www.ncwit.org and at www.w3w3.com. And Ping, where can people find out more information about your company?

Ping: At www.geomagic.com.

Lucy: Very good. Well, thank you very much!

Ping: Thank you.