The Problem With EDA is...

DAC 50th Anniversary—Visionary Talk

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Kathryn Kranen receiving 50th DAC appreciation award by Yervant Zorian, General Chair.

Editor's notes:
This article is based on a visionary talk presented at the 50th DAC. It emphasizes the positive state of the EDA industry and its impact in enabling design and verification teams throughout the ecosystem.
—Yervant Zorian, Synopsys

The future of EDA is very bright!

By Thursday at DAC, most people had heard this assessment multiple times—electronics are needed everywhere, all the time, for every imaginable purpose. The EDA industry is up to the technical challenges of delivering the continuous technological breakthroughs needed. Even Wall Street likes EDA, with our public companies outperforming all the major stock indices over the past few years. As we celebrated the 50th DAC, we witnessed amazing examples of cross-company and cross-industry collaboration.

My plan was to talk about how electronics is literally driving human evolution, but Aart de Geus covered that magnificently in his DAC visionary talk. Wally Rhines covered the past, present, and future of EDA's technological breakthroughs and Lip-Bu Tan addressed innovation and collaboration.

With this stellar line-up, I regrouped and asked myself “what vision shall I cover on Thursday?” I decided to drop down from the 30,000 foot level and cover something that is very near and dear to my heart, and hopefully will also appeal to you: EDA’s ecosystem execution.
By ecosystem I mean EDA and IP suppliers, semiconductor and electronics companies, academia, researchers, consultants, analysts, all of us—everyone who is a stakeholder in the EDA community.

In my first year as the chairman of the EDA Consortium, I had numerous conversations with these stakeholders, with the objective to really listen to their perspectives on the industry. By and large those conversations have been very positive, and have given me a great outlook for our industry. Yet, I couldn't help but notice that I also heard a lot of statements about challenges in the industry. Many of these statements started the same way: “The problem with the EDA industry is . . . .”, then fill in the blank with something negative about another stakeholder.

I am going to give you some examples of this, and I’m going to be purposefully provocative and inflammatory to surface the underlying issue. These comments are distillations of the many that I heard.

“The problem with EDA is . . . big EDA companies try to block EDA startups with all their free tools.”

“Customer EDA departments just focus on procurement now; nobody is looking into methodology advancements.”

“EDA doesn’t invest in academia anymore, they aren’t interested in research.”

“Academics just don’t understand that we commercial companies need to protect the inventions until we can commercialize them. We can’t be publishing them all the time.”

“Semiconductor startups are being hurt by those overpriced EDA tools.”

“All innovations come from small companies.” Anybody heard that one before?

My personal favorite: “EDA is an aging industry that’s just completely out of fresh ideas.”

Did any of these make the hair on the back of your neck stand up?

If you are one of those stakeholders, does it bother you to hear the assumptions someone else is making about your demographic?

It’s interesting that these alleged woes of our industry are always about the other stakeholders. It’s curious how common this attitude is, given that many of us—most of us probably—have worn multiple hats, and had different roles throughout our careers.

So let’s dig down into one of these myths. Let’s take, “All innovation comes from small companies.” On the technical side, let’s look at the types of innovation. We have node change innovation. The big companies have to do major upgrades of virtually every tool in the chain, and they have to do it every two years to keep pace with Moore’s Law.

Finally, we have flow or ecosystem innovations. That’s where many accessory products (many from startups) help to fill in the gaps in an existing design paradigm to achieve efficiencies.

There are also disruptive innovations. These are the paradigm shifts that enable major advancements in methodologies, creating new and powerful capabilities.

On the business side, think about the innovation of the subscription software-licensing model. Without question, this has driven the growth, stability and acceptance of the EDA industry by the financial markets. That innovation came from the big companies.

And some private companies, with very high differentiation, have figured out how to compete against lower-priced, big-EDA solutions—and in the process created new business models that are driving sustained growth and profitability.

There is plenty of innovation from large and small ecosystem contributors; so we can debunk that myth completely.

And while most of us are never negative . . . there is that one percent of us who occasionally slip up, make excuses and play the victim. Let’s not be too hard on ourselves. The good news is that this is completely normal; it happens in every industry.

The bottom line is, we are in a free market. It always entertains me when someone says, “Do you think EDA providers get fair value for their solutions?” I have to ask in return, what is “fair value”? A customer decides what a given product or service is worth to them, what they are willing to pay, and the supplier decides if it is willing to do business at that level. Sounds fair to me. There’s nothing like a business negotiation to help you confirm or deny your own impression of your product’s value.

We in EDA are operating in a free market. We all compete and/or negotiate with each other all the time, and we all have to use all of our assets to do that. But we must also collaborate and nourish this ecosystem. It’s that collaboration, that ecosystem execution that allows us to realize the full potential of this industry.
Conversely, think about what would happen if we were to accept these negative attributions to some other stakeholder. We might resign ourselves to the status quo. And what would that do? That would stunt our progress, cause missed opportunities, and ultimately chip away at the health of our ecosystem.

My vision for the future is that we are going to face forward. We are going to shed any residual negative thinking we might have accumulated over the years. And we're going to tune up our ecosystem execution.

There are so many unique advantages to our industry. For one, the EDA industry enjoys an amazing connectedness. We have to work very closely in order to solve the deep technical challenges that we face. There is also the connectedness across both time and geography that comes from the very products that we create. For example, I can be Skyping with my co-worker in Brazil one minute and on the phone with my customer in Japan the next. If I need to find a coworker from 20 years ago, they’re just a few mouse clicks away.

Another unique advantage of our industry is that we get to see the impact of our efforts on a very rapid time scale. We get to experiment with things very quickly, whereas other industries might have to wait 25 years for a full learning cycle.

And of course, I think we’ll all agree that surely we have the highest IQ per capita of any industry [wink]. These are just some of the things that make this industry great.

My call-to-action for all of us is this: let’s recognize the great situation we’re in. Let’s brush off those negative myths. If you hear yourself starting a sentence with “The problem with the EDA industry is…” and then attribute it to “those other guys,” or if you hear a colleague stating this, stop and check yourself. Shed the negative assumption, or reach out across the ecosystem to that other stakeholder and test that assumption. Maybe by listening and building trust, you will find completely new win-win scenarios. That's how we will achieve high-octane ecosystem execution.

The future of our industry is about enabling design and verification teams—understanding their needs and accelerating their innovations. It’s about value—finding metrics for the value that we deliver, being accountable for that value, and ultimately creating win-win business models between customers and suppliers. And it’s about innovation—not only technical innovation, but also innovation in business and in ecosystem collaboration. The EDA future is indeed very bright.

Kathryn Kranen is the president and CEO of Jasper Design Automation, a profitable private EDA software company. She is responsible for leading the team that has successfully brought the company’s pioneering technology to the mainstream design verification market. She has over 20 years of experience in the EDA domain. While previously serving as president and CEO of VeriSiity Design, she and her team created an entirely new segment in the design verification market. Prior to VeriSiity, Kathryn was Vice President of North American Sales for Quickturn Systems. She started her career as a design engineer at Rockwell International, and later joined Daisy Systems, an early EDA company. She graduated summa cum laude from Texas A&M University with a Bachelor’s in Electrical Engineering. Kathryn is now serving her sixth term on the EDA Consortium board, and has served as chair for 2012–2013. She is a member of the Board of Trustees of the World Affairs Council in Northern California. Kathryn was awarded the prestigious EE Times and EDN ACE Lifetime Achievement Award for contributions to the electronics industry in 2013. She was named one of the EE Times Top Ten Women in Microelectronics in 2001. She was the 2005 recipient of the Marie Pistilli Women in Electronic Design Automation Award.

Direct questions and comments about this article to Kathryn Kranen, Jasper Design Automation and EDA Consortium Chairman.