

MATHENY: Welcome to this IBM podcast. I'm Angelique Matheny. The title of this podcast is, Finding Value in Your Embedded Development Tools. And joining me is Dr. Jerry Krasner, Vice President of Embedded Market Forecasters.

Dr. Krasner is a recognized authority with over 30 years of embedded industry experience, advising vendors and consumers on what software and embedded developers are using, what is working and what is not, and the associated costs of product development.

During this podcast, Jerry will discuss and share his recent findings presented in his ROI paper, The Economics of Embedded Development, Testing, Deployment and Support. Hi, Jerry. Welcome to the podcast. Thanks for joining us. Jerry, let's start off with this: why did you choose to write this paper?

KRASNER: That's a wonderful question, Angelique. Look, I've been on both sides. I've been an executive of medical companies [INAUDIBLE] public, I've been a developer. You know, I haven't done that [INAUDIBLE] in 20 years. But research is really aimed at everybody in the industry, whether you're CEO or CFO or a developer or manager.

And our surveys are so detailed and we're able to track year

over year what's working and what's not working. So we know that, you know, there's been in some companies a sort of [schism] between CEOs and CFOs and the developers, they want more work for less money. But nobody really has, nor did I ever have, any substantial factual data that says what's working, what's not working, and therefore, how can I calculate my return on investment?

So as part of our research we thought it was important to get this to the industry, because that's what we write for.

We write for OEMs, we write for systems developers, we write for the military, and the government, and prime contractors to give them factual information to make decisions by.

So that's why we went to press. We have 12 years of year-over-year data that particularly the last two or three have been very compelling in terms of how people can save money and what are the practices they've been using and how they can improve.

MATHENY: That's as good a reason as any, I guess. Why do you think companies are slow to initiate change in their development processes?

KRASNER: Change is a very difficult thing to do. And if you don't it's going to happen to you regardless, but you

get comfortable. Developers have used certain tools for a long time, certain processors. They get very comfortable with it.

Managers and executives are always looking to save money, and we've dealt with some people in the field who, where the executives felt that developers are always asking for too much and they think it's the best practice to give them very little and push them harder.

You know, and nobody wins the argument, because you've got to measure what's really happening, what are the real costs.

Is it the upfront costs or do you save money up front because you're using open source, or is it the time to market?

Is it the cost of being late? Everybody's got their own reasons for doing what they do. And so it's a very good question. And I can understand why some companies with limited resources have to do what they do.

MATHENY: We're all wondering, how did you develop this information you just mentioned?

KRASNER: Every year we do a very in-depth statistically accurate survey of embedded developers, managers, and we look at them across 10 vertical markets. We look at

different types of engineers, hardware, software systems, firmware, software managers, systems managers, hardware managers.

And we ask a lot of questions. We find out what they're doing, what they're using, how long it takes them to get to market. How close their predesign expectation was meant with their final design, what they think are best practices.

We ask a lot of questions, and because it's all computerized, we're able to cross-tab and to look at what are the best design outcomes, what are the processes used, what are the tools used, how long does it take if you use a certain tool or a certain process.

And because we're extremely careful as to how we construct the survey, we get results year over year. And then each year the subscribers, be they the military, be they vendors or be they OEMs, our developers, come to us and they say, you know, Jerry, we really think we need to understand the following. And we'll put a question in.

So about 85 percent of our survey is repeated year over year, and as new technology comes in and based on requests.

For example, this past year people wanted to know what developers thought about whether it was royalty base or subscription based or perpetual license based.

And we were able to take a look at it by company, we were able to take a look at it by industry, and we're able to see what people actually wanted. Now, we then are able to feed this back to the vendors who sell this. So in a way we're a conduit for the people out in the industry who use these technologies to go back to the vendors to make sure they're being supplied what they need.

MATHENY: So these vendors and anyone else, do they use this data in practice?

KRASNER: That's a great question. We know for sure within the military and within the prime contractors, they not only use this information but they're basing their acquisition strategies on this. For example, we did an important job for the Marines who have a vehicle that's actually a tank that goes 49 knots in the water with a lot of vibration and stuff.

And they needed to know what's going on, what hardware's going to be required, when are things going to be available, who is using what and what strategies, what data do you have for the strategies we need to use.

And NASA's going to put a man on Mars in about 30 years, and all of their developments have to be backward compatible.

So they come and they say, well, what are people using? And what are the things that allow them to move into the future and know that they can be backward compatible?

We know from some of our subscribers who are vendors, who are working with their customers in the field, that this has been very important for them to go to their customers and their prospective customers and to say, look here's information, here's year-over-year information, and this should be valuable to you.

And it doesn't necessarily have to involve their product, although it probably does. So a return on investment analysis certainly is something that's good for the industry.

MATHENY: Certainly is, good for the industry. And last question, Jerry, what is the key take-away that senior management can take from this?

KRASNER: Okay. You know, a lot of decisions are made particularly in the primes in the military, but also among OEMs and systems developers on up front costs. And if you take a look at our paper, what we show is the real cost is in the development and the real cost is in the end of product shipment.

If you're late to market, there's a certain cost. If you have X number of engineers and marketing people working on a project and you're four months late, there's a cost. If you have to remove features, there's a cost.

And what we've done is we have tracked a technology known as model-driven development -- which is simulation and modeling -- and it allows a plug-in everybody else's tools, everybody else's processors and such.

And it creates, in our paper we show that people who use model-driven development gain a 30 to 40 percent advantage over people who don't use model-driven development. And so you've got to focus on the total lifecycle. You have to look at what are the risks of your development, what happens if a product has to be recalled.

And for people in the medical industry, a new law that's coming out of the Senate, sponsored by Ted Kennedy and [Grassley], a Republican from Iowa, shows that CEOs and CFOs have to certify their filings with the CDRH, Center for Devices and Radiological Health, which is the FDA, and their failure to adequately disclose information could result in fines of up to \$5 million, and jail time of up to 20 years.

So one has to come back and look at, how do I get to market faster, how do I integrate my tools, how do I document all

this stuff if I'm a CEO of a medical company, and by the way, I have been, I've taken two medical companies public. We didn't have these requirements at the time.

What are the technologies, what are the tools I need to use in order to cover my behind, protect my company. And if you look at it from that perspective, using model-driven development, we've been able to show that in fact to save money, get to market faster, you reduce the risks that are associated with removing features, late shipments and the medical area going to jail.

MATHENY: Jerry, thank you so much. This was very informative. We've had a chance to work together before this, so I thank you for taking time out to discuss the finding value in your embedded development tools. We really appreciate it.

KRASNER: Angelique, it's always been fun working with you. I look forward to the next opportunity and thanks for giving us the opportunity to address the industry. IBM has been terrific in this respect of allowing us to get the important information to the industry. So thanks a lot.

MATHENY: Thank you. That was Dr. Jerry Krasner, Vice President of Embedded Market Forecasters and its parent company American Technology International.

If you're interested in more podcasts like this one check out the Rational Talks To You Podcast Page at [www.ibm.com/rational/podcast](http://www.ibm.com/rational/podcast). The link to the paper discussed today, The Economics of Embedded Development, Testing, Deployment and Support, is there as well.

This has been an IBM Rational podcast, I'm Angelique Matheny. Thanks for listening. Keep tuning in as Rational Talks To You.

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