

IBM Podcast

[MUSIC]

MATHENY: Welcome to this IBM podcast, Product and Systems Development. I'm Angelique Matheny with IBM. In today's competitive environment, you have to be looking for ways to design, development and manage your product in systems development processes. This isn't easy, as there are a number of things to consider.

If your company struggles with any or all of these challenges, then this is the podcast for you. With us today is Steve Shoaf and Nicole Katrana, two of IBM's leaders in driving the systems and software engineering for IBM. Thank you for joining us, Steven and Nicole.

SHOAF: Hi, Angelique. Thanks for having us.

KATRANA: Thank you.

MATHENY: Let me just start off with this. Nicole, I'll start with you. Let's start with a very basic yet complex question. What are you seeing customers need most?

KATRANA: Well, what we're seeing is that they really have challenges within both software development, within

their core products systems as well as integration across the engineering domains or what we call systems engineering challenges. In addition to that, there are actually challenges to worry about how they're going to link that software or that product to back-end systems because quite often these single products don't have a single function.

The really core areas that they need help is really within the development life cycle and within that integration across the engineering domain. They're looking for lifecycle traceability to manage those requirements across the disciplines as well as to make sure that the product requirements that they've put in place actually get executed and what they planned to build is actually what got built and got built right.

And as there's more complexity in the actual product development process, quite often they're looking to maybe architect that in a visual diagram. And that really helps them to simplify the process as well as simplify the pure quantity of text quite often that's being used in the lines of code. They're also really looking for ways to reduce the number of defects, really improve the quality of the products because their clients won't accept anything other than top quality.

And they need to make sure that they have a collaborative

process and that they're communicating all of the changes as well as the improvements and that they really have an ability to really look at it from a workload perspective with different dashboards and different reports. So, it really is a complex process to develop software, manage it across engineering domains and manage the back-end. And they need help within each of the individual steps within that process as well as that pure vision of integration across.

MATHENY: Okay. You know, that doesn't sound easy. Steve, can you tell me more about IBM's approach?

SHOAF: Sure. IBM has four key capability areas that address these challenges. The first has to do with capturing and managing customer requirements. Rational has a product called Rational DOORS that helps development teams capture these requirements, make sense of them, but more importantly, share them with all the various stakeholders throughout the entire development process.

At the back end of the process, there's a need to ensure quality and there is a product, Rational Quality Manager, that helps development teams do exactly that: manage and ensure quality. And the requirements are tied to the various tests that need to be performed at the back end of the process. So, this allows the traceability that Nicole

was talking about, so that you can ensure that you run the right test to make sure that you have the requirements that were requested in the first place, but also so that you don't test for things that aren't requirements. And the converse, to make sure that you run all the tests that are required.

In addition to that, there's a capability area around dealing with a complexity that is inherent in these various complex products. The capability that IBM has is centered around the product called Rational Rhapsody. This product helps the development teams understand, manage and visualize the interactions that occur between all the various systems and the components within the systems.

So, you can perform experimentation on paper, if you will, in the computer, early in the process, to get a handle on the behavior of your product before you start getting into detailed design, where you start committing cost into the process.

And finally, there is a requirement to collaborate among all the teams that participate in this development process. With the globalization that's occurring today in most companies, the development team is not centered in one building or even one city; it could be distributed across the world.

So, there's an acute need to make sure that all of the development teams can work with the someone information. So, sharing information, enabling collaboration is key to innovation with respect to developing complex products and systems.

KATRANA: Now, Steve, one thing I would want to call out is that this solution goes beyond just core technology. When IBM built this solution, they thought in terms of, what are the best practices around these integrations or the use of these tools.

We've also built what we're called accelerators around industry verticals with templates, industry approaches and services to really help you manage the compliance as it relates to those industry governing bodies or it could be regulations within your own company or within your specific industry.

So, one of the things that I would want to call out or kind of elaborate on what you've already said is that it really is a combination of technology, best practices, templates and industry approaches. It can help these customers get to market faster, and we really do understand their space.

SHOAF: Absolutely. And thinking about a process and

how that process needs to be enforced across the development process itself, there is a need for these products to work together in a very integrated fashion and to support the accelerator concept.

There is an open standard in which these products work together called OSLC, or Open Services for Lifecycle Collaboration. OSLC enables the interaction between the data within the products and the execution of the products such that they are presented to the user in a seamless fashion.

KATRANA: Yes, and that's really key. And I know, Angelique, we could keep going on, but it's really important to have those OSLC integrations and have that as a foundation because it really allows we, IBM, to leverage the ecosystem of partners that build upon this core solution. And we do have several partners, one of which I will call out is BigLever Software.

It allows us to kind of extend these capabilities of a single product development to a product line approach, which really allows you to not only build one single product but to build an entire product line after a common set of features and functions. And all of the tools we just talked about is the lifecycle approach to that development.

And it's just another capability we want to call out because again, more and more often these clients are not building one. So, having that OSLC standard and approach, which allows that integration across the business partner ecosystem, across the lifecycle, across the engineering disciplines and allowing for that integration to back end systems is a pretty comprehensive and cool solution, I have to say.

MATHENY: And I was just going to say that, Nicole, it sounds very comprehensive. Do you have any examples of customers you've worked with?

SHOAF: Well, I'll jump in here, Angelique. A great example and to build on exactly what Nicole is talking about, with respect to product lines, is General Motors. In building a car, which is a very complex product, companies tend to reuse as much of their development assets is possible. And then, create variations throughout the development process are represent customization to the customers.

So, you can think of the various product lines at the high level that GM has had, such as Chevrolet and Buick and so forth. Those are high-level concepts of the product line. But even within an individual vehicle, there are zillions are various options and variations that can be ultimately

delivered to the end customer that have to be managed.

And so, GM has used Rational products to develop the Chevrolet Volt. Whereas a typical development cycle for a new product such as this is 10 years, GM has developed the Volt in 29 months. So, it's an incredible shrinkage of development time.

And the Volt presents a number of unique challenges to engineering in that there are a number of systems within the car that need to interact together. So, this creates kind of a system of systems. And managing the complexity within the systems of systems is very challenging. In fact, just managing the amount of code in the Volt is a challenge in and of itself. It has more than 10 million lines of code, almost 100 control units.

So, this presented quite a challenge to GM. But GM used Rational DOORS to manage the requirements; Rational Rhapsody to perform the model-driven systems engineering that allowed them to understand how the systems interacted with one another. They used Rational Team Concert for the collaboration that was required throughout their various development teams.

And something else unique that they did that supported their use of product lines is they used Rational Asset Manager to

manage all the various assets associated with the engineering discipline. And this allowed them to create and store the data that supported the variability of the various product lines. So, in addition to professional services and global services, IBM was able to contribute quite a bit to the success of the Chevy Volt.

KATRANA: Yes. And just to elaborate on that, I think what you're hearing is that it is really all about the product development within the software domain -- again, across the engineering domain to the back end system. But some of our executives like to talk about the collaboration and the integration has to happen within the four walls of the company and outside of the four walls of the company, which really pulls in your supply chain.

So, the solution that we have been talking about is very comprehensive, to go back to your original question. And it's something that we're very proud of and that we'd love to have our clients come in and talk to us more about.

MATHENY: We are very proud of that. And as we wind down the podcast, any parting comments?

KATRANA: Yes. I think that we've actually covered it today. I would just end again with the fact that the integrated product management solution from IBM has a number

of components. The one we're talking about today is obviously the focus on the actual product development process itself.

But I do want to just play up again that I know we have a number of podcasts in this space, and I would encourage those of you that are listening to us today to really learn about the other areas that we are able to focus on, all the way from doing that first-end analysis on what are the features and functions and the right business processes to put in place in order to develop these products...

Then the actual product development lifecycle itself; the collaboration within the four walls and outside of your four walls; and then, how you actually maintain that product through end of life. So, and I think that that really kind of wraps it up and puts a bow on it.

MATHENY: I think it has, too. And Nicole and Steve, thank you so much for sharing your time today. Great discussion, and we really appreciate it.

SHOAF: You're welcome.

KATRANA: Thank you.

MATHENY: That was Rational's Steve Shoaf and Nicole Katrana discussing product and systems development, designing, delivering and managing product value and

differentiation. To share this podcast with your colleagues or if you are interested in more podcasts like this one check out the Rational Talks To You Podcast Page at www.ibm.com/rational/podcasts.

We'll post a link to the integrated product management page to help you get started so you can design, deliver and manage more products. This has been an IBM podcast. I'm Angelique Matheny. Thanks for listening. Keep tuning as Rational Talks To You.

IBM Podcast

[MUSIC] [END OF SEGMENT]