For Cloud Professionals, part of the On Cloud Podcast

David Linthicum, Managing Director, Chief Cloud Strategy Officer, Deloitte Consulting LLP

Title:	**Leverage open source to drive cloud innovation**
Description:	Once considered an unusual way to develop end-user software, open source is now pervasive, and it has come into its own as an innovation engine—especially for cloud. The open source development model fosters the kind of creativity and associated speed of production that is largely unavailable with traditional, proprietary development models. In this episode of the podcast, David Linthicum and guest, Chris Wright of Red Hat, discuss the benefits of leveraging open source development. Chris argues that using open source models can help organizations unlock value by pairing tools and technologies with people in a collaborative environment that stimulates great ideas. He also gives his predictions on the bright future of open source and discusses ways open source development can help companies operate more effectively in times of disruption.
Duration:	**00:20:56**

Operator:
This podcast is produced by Deloitte. The views and opinions expressed by podcast speakers and guests are solely their own and do not reflect the opinions of Deloitte. This podcast provides general information only and is not intended to constitute advice or services of any kind. For additional information about Deloitte, go to Deloitte.com/about. Welcome to On Cloud, the podcast for cloud professionals, where we break down the state of cloud computing today and how you can unleash the power of cloud for your enterprise. Now here is your host David Linthicum.

David Linthicum:
Welcome back to the On Cloud Podcast, your one place to find out how to make cloud computing work for your enterprise. This is an objective discussion with industry thought leaders who provide their own unique perspective around the pragmatic use of cloud-based technology. On the show today we have Chris Wright. Chris is the senior vice president and chief technology officer, CTO, at Red Hat. He leads the office of CTO which is responsible for incubating emerging technologies and developing forward-looking perspectives on innovation such as artificial intelligence, cloud-based computing, distributed storage, storage-defined networking, and network function virtualization, containers, automation, and continuous delivery and distributed leverage. So what's a typical day in the life like of Chris Wright, CTO of Red Hat?

Chris Wright:

Well, judging from that list it sounds really busy. A typical day in the life is – well, actually to be honest, a typical day in the life has changed a little bit. You know, we're in a different place in the world right now, and as a result I'm working from home and doing a lot of remote connections with customers and partners and internal Red Hat associates. And so the way I describe it is there's two key areas: emerging technologies, which would be a set of technical trends that are happening across the industry, but also emerging markets, which could look like applying some existing technologies to new market spaces, and where those are relevant to Red Hat to ensure that we're kind of staying fresh and helping drive direction across the industry and providing the right value to our customers and our ecosystem.

David Linthicum:
I've been a CTO of different publicly-traded companies three times, all of them sold, and the good CTOs that I saw, the patterns that really go to success are the ones who are out there meeting with the customers all the time. So I was always teamed with marketing and sales, and also R&D, to go out and actually discuss the way in which people are implementing the technology, whatever you're building, because that's really kind of the only way you can take it back to the group and actually define what the next generation of innovation steps are. Would you agree?

Chris Wright:
I would very deeply agree. I'm passionate about connecting with especially our customers and understanding what are the challenges, what are the key inhibitors to business success: velocity, the efficiencies that you're trying to drive into your business, and understanding that not just at a technology level. I mean, I'm a technologist so I steep myself in technology, but it's not always the technical solution that's the critical part of unlocking the value for a customer. It can be a combination of understanding the technology, understanding how people and process need to intersect that technology, and that's just a little more subtle. There's a more human experience associated with that, and again it's not only the best technology that wins. It's really understanding how you can use technology to make real, meaningful business-level impacts for our customer base, which is really the enterprise.

David Linthicum:
Amen, brother. So we're in some challenging times right now, and one of the things that I notice as someone who monitors the technology space and looks at the innovation level and how things are moving forward, that there was a group in this day and age that actually responded almost directly, and with a continuous response into what the things that were needed, the ability to build 3D-printed ventilators for a very inexpensive price, the ability to open source different designs that are going forward to allow us to have different face shields and different medical devices. So in essence to kind of fill up the surplus if they were needed in terms of what the medical profession needed to in essence treat the patients that were coming in. And it was neat to me that this was all open source stuff. And ultimately that's where the innovation seems to be occurring. So what is innovation's secret ingredient around open source?

Chris Wright:
Well, I like to say we don't actually know the magic pixie dust. There is some magic that happens in community collaboration, and the reason I believe you see responses like you described, the ventilator response, or a group of people combining together to try to solve a big, challenging problem, is today the things that we're trying to manage are getting increasingly complicated. And we have this rich set of capabilities that we can build upon through open source technologies. And when you bring together a combination of great tools and technologies, people that have a shared vision –we're trying to achieve something together – a collaborative environment that really allows great ideas to flow through the community and come from anywhere, rather than a traditional software environment that there can be a lot of hierarchy imposed on decision making, some of the associated, I'd say, trust relationships that are built by human beings that are in these communities – it all fosters a kind of creativity and collaboration that today you can't really do easily within the four walls of a single company.

And so I believe that the open source movement, the open source development model, enables a kind of creativity and associated velocity that means, today, the innovation engine for the industry is open source. It's open source communities. And the way I kind of frame that is, one, all of the software that we see coming out of places – you know, community development activities. There are millions of Git repositories with source code in them that are all open source. There are millions of developers developing in these projects. But it also branches out into other areas of interest. You see in the medical world, you see even in the legal world, people talking about how we can share our ideas, because as you share an idea it has the potential to grow and be more powerful. So I think the source of some of this innovation, the power of open source and community collaboration is in that sharing of ideas and bringing in diverse groups to really tackle a problem from every different perspective and all different sets of skill sets.

David Linthicum:
So how does Red Hat promote some of the innovation that's occurring in the open source world? And ultimately what's in it for the developers? There's lots of people who are contributing to a lot of stuff that I use every day. My drones, the operating systems are open source. My 3D printer, the operating systems are open source. And we're actually dependent on lots of open source capabilities today, but you track it back, there's a lot of volunteerism that's occurring, and different organizations with different kinds of motivations. And certainly the poster child of someone who's made good in the open source space has been Red Hat. So how do you guys consider yourselves an open source player, and what role do you play in it?

Chris Wright:
We like to say we wear different hats. So at Red Hat, in the end, we're a business and we serve a customer segment, which is the enterprise customer segment, and we bring IT solutions into that customer set. So at a very high level we're delivering software to help our customers run their businesses. We do that all through the open source community development process, and what that means is every one of our products starts with an open source community. We call that upstream, and we often refer to what we deliver as a downstream product of the upstream project. And one of the things that we do is directly involve ourselves in those upstream communities, in those open source communities, and that helps us with understanding the code base. It helps us with taking the really important needs that we understand from our customer base and reflecting those into influence and change in those open source community projects, which ultimately means we can deliver software through our products to meet those features and needs of our customers.

So we play a very important role in the community in terms of being key community participants. We're big community advocates for the communities that we work within and the communities at large. The community development as a concept, we're huge advocates for. And we play a commercialization role of just productizing software and developing enterprise quality, robust, mission-critical infrastructure for our customers. So a whole set of activities that starts in that open source, upstream community and ends with delivering software to a customer who's going to use it to drive their business, run their business.

David Linthicum:

So I think there's kind of an innovation desert out there right now and basically lacking the skills to kind of differentiate your technology from the base. And I think the technologists out there, and certainly the commercial players, are operating like a kid's soccer team. The ball's getting kicked in the other side of the market; everybody runs over there. And ultimately there seems to be lacking a real fire-in-the-belly approach to making key innovations that are strategically different than the patterns that are around today. And I see open source as sort of breaking that mold a bit. And so, how do we unlock developer creativity, and how should people who are leveraging open source technology or not consider empowering the developers to be creative and create something different?

Chris Wright:

There's an interesting challenge that comes along with the ease of access to creation of new ideas and new ultimately open source projects. The challenge is we've really lowered the bar to creativity and innovation. Many projects already exist that become dependencies for your new idea. There are many tools out there that are easily accessible, freely available. And so I think we've enabled people to be creative.

What's challenging is identifying where those key creative activities are really surfacing in a way that are uniquely interesting. And there's an interesting intersection of open source and company or corporate involvement and nonprofit, foundation organization involvement which tries to bring some visibility and even highlight certain types of activities. Often that's done in a more commercial context where you're thinking here's a group of companies that are trying to solve a problem together. If they bring their developers together and bring some of their resources together, they can advocate for a particular project and try to you know, kickstart it to help it really get momentum.

The thousands of projects that are out there that aren't always getting clear visibility to the broad world – I think that's a hard problem to solve. How do you get that visibility? And one thing that helps is developers I think in many cases are just passionate about the technology that they're developing. That's why they're involved to begin with. And they want to share their ideas and it's so easy to share ideas today. We've got social media and maybe today more virtual than physical conferences, but a lot of outlets for getting your ideas out there.

I think it's a different challenge to bring that into a business context. And the difference is kind of the speed. There's a potential impedance mismatch of how quickly things come and go in a highly creative environment, versus the stability and long-term investments needed to make something really successful in a business context. And that's an area – certainly Red Hat thinks a lot about that, because it's kind of core to our business. And there's some group thinking that happens, take the Linux project, Linux-Kernel project as an example. This is a 25-year old project, actually over a quarter of a century old. And the value that it brings to the world is in part the degree to which so many industries have leveraged it as a key technology It's not just the new ideas, but it's the ideas that are – no pun intended, but kernels of innovation and help evolve the overall technology landscape.

I don't know if that makes sense. A lot of ideas in there, but a core piece is there's value in consolidating our focus. It's pretty easy to innovate. It's not always easy to see the new innovations; I think we're changing that. And it's hard to bring innovation into a commercial context which moves at a very different pace.

David Linthicum:

So what about the market? You know, going forward we do have to have some market viability with open source or any other technology moving forward. And of course we have very amazing technology, Kubernetes being one, and the container-based standards being another, and you can go on and on and on. So how do you see the market evolving this year into the next in terms of how open source is going to basically play a role?

Chris Wright:

Well, on the one hand I like to say open source has won in the sense that it is no longer considered an unusual way to develop software. Most of our world is dependent on it at this point and most of the businesses are leveraging it in one way or another, whether it's the core infrastructure, whether it's application dependencies close to the run time of your actual application, or all up and down that stack. So it's there. It's pervasive. We've won as an open source community movement.

We have understood over the last decade the power of a cloud environment. And a cloud environment I think brings a couple of key characteristics, and one of those is an operational efficiency, and that operational efficiency is associated with the fact that public clouds run as managed services. So somebody else is running it for you, so your operational experience of running that software is pretty well, because it's managed and run for you. There's a developer velocity that happens in the public cloud environment, and I think what we see is developers have a lot of access to a lot of tools through APIs and services. And I think the open source communities are fueling a lot of that. If you look inside most of those services, they're often built from open source software projects.

So one of the interesting things certainly for Red Hat and more generally I think for our customer base and the industry is the notion of a hybrid cloud. You hear it a lot from different vendors. You hear it a lot from customers looking for a choice in how and where they deploy their software. And Kubernetes plays a really interesting role in providing some continuity in how you support infrastructure and support applications at the same time on this container platform. And I think it becomes the building block that gives us the tools we need to create that experience of a cloud in a hybrid cloud context, so building operational efficiency, building that developer velocity. I think that's where we'll see a lot of activity over the next year or so of open source development, building around Kubernetes, so there's tools that enable the codification of the expertise of an SRE, a site reliability engineer, in code, to help run Kubernetes as a platform or services that sit on top of that.

So a hybrid cloud, the flexibility of bringing operational efficiency and developer velocity with choice of how and where you deploy is a lot of what we're seeing emerge from projects in open source communities.

David Linthicum:

So kind of back to the crisis we're going through right now and the integration and use of technology to in essence bring us out of the crisis and also help us recover and thrive kind of after the crisis kind of goes away, so just kind of parting thoughts. Where do you think this could lead us?

Chris Wright:

Well, I've given it some thought, and I think there's a few interesting outcomes. One is I think that this isn't just about open source development; I think it's just about how we operate. I think we're learning a lot collectively, globally, about what it means to do distributed work. Now that happens to be the exact pattern for open source development. It's a very distributed community because people are spread around the world. They're not all in the same company, let alone in the same building. So I think we're learning a lot, and I think there's some potential really positive outcomes of the flexibility and the need to be clear about how you communicate, how you write decisions down and share those amongst teams. I think there are some really interesting side effects that could come from this distributed working experience that we're having.

I think there are some technology solutions that are also interesting that can help us understand how we can apply technology to data, data sharing, and privacy concerns. So when you talk about how do you do contact tracing in a way that doesn't feel like a surveillance activity, there's a lot of technology that's in there that could enable us to realize some interesting new ways to share our data while we're retaining ownership and authority over that data and privacy associated with that data. So I think there's just some interesting technical side effects. And I also think that open source development communities, through their diversity, are examples of communities that will continue to grow and thrive because of the resiliency of diversity that's built into the community process. So I think of a few interesting outcomes there.

David Linthicum:

Yeah, I can't say enough that we're going to have to change the way in which we work, and I think the distributed workforce really is a positive and was a core advantage of organizations that are going through this crisis. And those who hadn't thought about it and didn't have the infrastructure to support it are really trying to play catchup football and making sure that they're getting these things done. So we're going to see more of it. We're going to see more innovation, and I do believe just as you believe – I think that the technology is the root of solving many of these problems.

If you enjoyed this podcast, make sure to like and subscribe on iTunes or wherever you get your podcasts. Also check out our past episodes including On Cloud Podcast hosted by my good friend Mike Kavis on his show Architecting the Cloud and his book by the same name. And if you'd like to learn more about Deloitte's cloud capabilities check out www.DeloitteCloudPodcast.com. So, Chris, where can we find more information about you and your company on the web?

Chris Wright:

Hey, you can always check out RedHat.com.

David Linthicum:

Yeah, go check out RedHat.com. They've got a lot of great content out there and check out their technology. So if you'd like to contact me directly you can reach me at DLinthicum@Deloitte.com, L-I-N-T-H-I-C-U-M. So until next time, best of luck with your cloud computing projects. We'll talk again very soon. You guys take good care and be healthy.

Operator:

Thank you for listening to On Cloud for Cloud Professionals with David Linthicum. Connect with David on Twitter and LinkedIn and visit the Deloitte On Cloud blog at www.deloitte.com/us/deloitte-on-cloud-blog. Be sure to rate and review the show on your favorite podcast app.

Visit the On Cloud library
www.deloitte.com/us/cloud-podcast