Mike Tiemann, Cygnus Solutions

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And now, here's your host, John C. Dvorak.

DVORAK: What is Open Source Software? There's a lot of people might ask. You see it mentioned a lot: Open Source. It means the source code's available for the public at large. And when you buy the software, you get the source code, which means you look at the actual coding of the program. It's not scrambled or kept a secret. And there's a major movement going on about Open Source Software and supporting it. To discuss this we've got Michael Tiemann, who's the President and CEO of Cygnus Solutions here in the studio. Michael, welcome to Real Computing.

MICHAEL TIEMANN: Thank you very much.

DVORAK: Let's talk about this Open Source. If anybody reads the trades, they're always reading about Open Source. And what is that? What does it even mean?

TIEMANN: Well, it certainly wasn't always the case. Open Source, like many business models, is born out of a need. And that need was apparent to me back in the 1980's when I was using UNIX workstations, Sun Microsystems, Digital Equipment Corporation, very new and very hot. And also, amazingly proprietary. And the problem with these systems -

DVORAK: Wasn't Sun always arguing that their stuff was open?

TIEMANN: Well, people can say whatever they want. The realities are often quite different. And the situation in the case of Sun is that Sun provided the operating system, the development tools, the applications. Initially, it was a very closed system, in fact.

DVORAK: Okay. Now what is open - what's the difference between an open and a closed? And when we're talking about source, we're talking about source code?

TIEMANN: Yeah. Source code is the key to driving computers. And when you have availability of source code, when you have the ability to modify the source code, you have the ability to control the computers in ways that nobody could have imagined when they built those computers. In the proprietary world, you run the applications that they sell. And in the Open Source world, you build the applications you need to create.

DVORAK: Now, let's say, for example - let's explain this to people out there. Let's say that you

had two - say there was an Open Source version of Windows. What would that mean to people?

TIEMANN: Well, people have been arguing that Windows should become Open Source. And what that means, right now, when you want to build an application for Windows, you have no idea what's going on inside the operating system.

DVORAK: So it would make it easier to debug, for example.

TIEMANN: Absolutely.

DVORAK: Windows you have weird crashes and you never can figure out - Nobody can fix those.

TIEMANN: And nobody can fix it because the crash never happens inside of Microsoft. They always happen on your desktop and you have no tools to figure it out. With Open Source, that doesn't happen. The reason that Linux has burst onto the scene in the last seven years is because when the thing crashes, you can look at every detail of the system and chances are you can find somebody who can help you.

DVORAK: Because when you use Linux you have the source code available.

TIEMANN: That's right.

DVORAK: To the operating system itself. So you could actually, step-by-step through - In other words, you're running a program and it crashes, you can step-by-step through every line of code, even if it takes a week.

TIEMANN: Yeah.

DVORAK: And find out exactly where the flaw is.

TIEMANN: Now, today, they're estimated over 7.5 million users of Linux. And that's not to say that there's 7.5 million people who understand every line of Linux source code. But just like -

DVORAK: I would say that most of them don't understand any of it.

TIEMANN: That's absolutely right. They're just users. But just like in 'Six Degrees of Separation,' you know someone who knows somebody and the Internet connects you to Linus Torvold or it connects you to Ulrich Strepper or it connects you to Richard Henderson. It connects you to the people who make that code.

DVORAK: So now what do you do?

TIEMANN: Well, what I did was develop code in a research lab in Austin, Texas. And I was faced with the challenge of using some software developed by AT&T, a C++ compiler. And I was not satisfied with its behavior, performance, functionality, or anything else. But it was the only C++ compiler in existence.

DVORAK: At the time.

TIEMANN: At the time. So I downloaded the Gnu C Compiler, which had become available basically on my birthday in 1987, and I began writing the world's first native code optimizing high-performance C++ compiler that I released that year. And then, from there, the Internet took over and people started making it better and writing libraries and writing applications. And before you knew it, I was out of a development job. I could focus solely on promoting the compiler without having to write another line of code.

DVORAK: And you found that fascinating.

TIEMANN: I sure did. And, in fact, I began to find the business opportunity. The opportunities of scale to build a company, basically, to take advantage of the opportunity that this program had created.

DVORAK: Now, this is going on on a worldwide basis with a number of so-called Open Source systems.

TIEMANN: Yes. Cygnus really pioneered the model. We started the company in 1989. And the story I always like to tell is that when I would suggest to people that they base their development around Open Source tools, everybody says, 'Well, it would be a great idea,' because technically you can understand why you want access to source code. But nobody could see how to make the business work. So everybody would say, 'It's a great idea, but it will never work.' And after I heard that for two years, I realized if everyone thought it was a great idea, it probably was. And if nobody thought it would work, I'd have no competition. And for five years -

DVORAK: Well, that's an interesting logic there.

TIEMANN: Absolutely. And so for five years, we really, literally did have no competition and no company even attempting to do what we did. But at the five-year mark, Cygnus had hit $5 million, we had 50 or 60 people, we had international customers like Al-Katel, Ericsson, and Cisco, Sun Microsystems, even. And because of this, it gave other entrepreneurs the idea that they could do their thing. And so Bob Young did Red Hat Software, which is the world's premier Linux distributor. People have done packet driver companies, SendMail.com now. You've got - I'm trying to remember some of the other Open Source guys. There's Larry Wall with Pearl. And you've even got Tim O'Reilly, who's the leading publisher of technical books, now recognizing that 50% of his revenues are coming from books about Open Source software.

DVORAK: Now, what - could you give us names of what specifically is Open Source? I mean, Linux comes to mind. And Pearl, I guess, is out there. What else is out there? And let's also ask another question, which is that there is this argument in the industry that, you know, when it comes to Linux, that people don't want - like, big businesses, Fortune 500 companies, can't deal with this concept, because there's not a single source of information.

TIEMANN: Yeah, that's absolutely true. And, in fact, Open Source is about the democratization of technology. If you roll back the clock about 200 years and you look at the old royalty model, nobody who comes from the royalty mind set would ever believe that a population could control its own destiny. There simply wasn't enough education to go around. There simply wasn't enough governance or discipline needed. And yet America has solved that problem, regardless

of your opinion of the average American, the average American at the end of the day gets the job done and does it better than any Communist or Royalist or any other kind of dictator can do it. Now, this democratization comes into play as far as technology is concerned, in that companies inside their walls are running a whole lot of different activities, which, at the end of the day, need to be successful. And where Linux comes up is that these companies, in order to get their job done at the lowest cost with the greatest performance, have turned to Open Source, and you see skunk works projects. Federal Express put their whole tracking system on-line using Open Source software. Using Pearl, Apache, and ultimately, Linux. You also see people like Cisco Systems using our development tools for every product in their product line ranging from $200 web servers up to multi-tens of thousand dollar routers that are stackable and scalable and, you know, fully enterprised based. You see America Online using Open Source development tools like Pearl. These are indispensable tools for building Internet applications. So it's true that at the top there is suspicion about Open Source, just like I'm sure, you know, the kings and queens of Europe were highly suspicious of how this democratic experiment in America was going to play out.

DVORAK: I wrote about Linux recently, mentioning this exact same problem. And one of the comments I made was that some of these large corporations can't deal with the fact that much of the support comes from actually going on the IRC. Most people that I know that are Linux support types, they're essentially on the IRC, which is the Internet Relay Chat system, 24-hours a day, seven days a week. They've got one monitor on their desktop that is, then they're plugged into two or three forums. And they sit there, because they're doing something else usually, but once in a while a message comes through to them saying, 'Hey! I have this problem." And they answer it. Free.

TIEMANN: Yeah. And so -

DVORAK: What kind of person is this?

TIEMANN: This is a person who is hooked in to a collective consciousness. And you see this collective consciousness in other disciplines as well. You see this collective consciousness on Wall Street. You see people who are constantly connected to everything, you know, moving a consensus around and deciding 'This is right' or 'This is wrong.' In the IRC world, the ability to tap into whatever talent is awake in whatever time zone to get an answer to a question and to refine that answer in real time, that again is free-market economics applied to technology development. It's fascinating.

DVORAK: So if the IRC was brought down, the whole Linux community would collapse, is what you're telling me.

TIEMANN: Well, no. I'd think they'd fix it. That's exactly what they'd do. They'd fix it. You would not see the kinds of lock-ups that you see in the proprietary world because, you know, when something else goes down, it's all up to the guys in Redmond to fix it. And if they can't fix it, you're out of luck. You know, you've got one bet on a guy named Bill Gates and if he doesn't deliver, you're doomed. In the Linux world, you can find a hero from anywhere.

DVORAK: Now, what does this mean - I mean, do you think Microsoft takes this seriously? Because I know Bill has made mention occasionally that, to him, Linux is a big threat to

Microsoft's long-term strategies.

TIEMANN: Bill Gates is definitely one of the smartest guys I've ever seen in action. And I'm sure that he recognizes, I wouldn't call it the threat, but I'd say the value of Open Source software.

DVORAK: You think that he could co-opt it?

TIEMANN: I -

DVORAK: You know, how long would Red Hat last if Microsoft decided to start selling Linux?

TIEMANN: Well, Bob Young is also one of the smartest guys I've seen in action. Bob Young has been able to turn every paradoxical aspect of Open Source software into his business advantage. And I think that if Microsoft joined the fray, that Bob Young would be the #2 guy at Microsoft.

DVORAK: Oh, really? That's an interesting theory.

TIEMANN: Well, the reason is is because the #2 guy at Microsoft is entirely focussed on a Microsoft-only agenda. And in the event that Microsoft were to bring Linux into their camp, that Microsoft-only agenda would fall by the wayside.

DVORAK: Now, do you recommend the average out there--I mean the guy's a Window user right now--even considering Linux?

TIEMANN: Well, I think it depends on what sorts of problems and what sorts of solutions you want to have. I have never really had a satisfying experience with Microsoft software. I am constantly amazed at the amount of crashing and problems and other things that just don't happen on Linux. And I, of course, work at a company where lots of people are very Linux-savvy. So my up-time, in a sense, is ensured by the people around me. And I think that the average user, if they do extend into a technical field and do have access to technical expertise, Linux is certainly the most robust platform you can run on a PC today.

DVORAK: Well, if you don't mind re-booting a lot.

TIEMANN: Yeah. Well, if you don't mind re-booting a lot, then chances are you don't really care. You would be just as happy running Macintosh or Windows or anything else.

DVORAK: Now, what about the people out there - I mean, where does a graphical user interface stand now with Linux? Most of the guys running Linux are running old command line stuff. Very few of them are running a GUI, and if you see their machines, they might as well just have a green monitor.

TIEMANN: That's almost true. There is a very clever Window manager, which, if you aren't looking at it very carefully, you would think it was Microsoft. It's called FVWM. And it basically it looks just like Microsoft Window Manager. You can launch applications, you can drag stuff to the desktop, you can open applications by clicking on them, and the only difference you can see is that instead of seeing the Microsoft flag in the lower left-hand corner, you see the Red Hat.

DVORAK: Oh, is that right?

TIEMANN: Yeah.

DVORAK: And how does it work? Does it work fine?

TIEMANN: It works just fine, yeah.

DVORAK: A friend of mine who just recently put his Linux system up, he says there's a whole bunch of good stuff on that Red Hat disk, including a photo editor and all kinds of things. You get a pretty good deal there, don't you think?

TIEMANN: You absolutely do. And the Internet has been part and parcel of the success of Linux. As you probably know, the Internet was originally built using Open Source software. And then the Internet returned the favor by becoming the enabling technology for greater Open Source development. And I'll give you a quick example of that: there's a program called the Gimp. It' stands for Gnu Image Manipulation Program. And this was started by a couple of guys at Berkeley who just couldn't see paying $500 for PhotoShop and couldn't see running it on a Windows machine. And they sat down themselves to write a program that would be every bit as good as PhotoShop, but, believe it or not, they actually have an Internet interface so that you can download a plug-in from the Internet and you can do dazzling graphics. Www.gimp.org is a pointer to the amazing things that this program can do. And it's giving not only PhotoShop but other high-end paint packages that are being used in Hollywood, a run for their money.

DVORAK: And it's an Open Source?

TIEMANN: Absolutely.

DVORAK: It's free?

TIEMANN: Yes.

DVORAK: I love those guys from Berkeley. They're a bunch of Communists. I went to Berkeley, so I can say that.

TIEMANN: Sure.

DVORAK: Anyway, well that's an interesting - I didn't know about that. I should look into that myself. It only runs under UNIX, though.

TIEMANN: It runs - actually it does run under Windows as well. One of the things that Cygnus has done -

DVORAK: Oh, really? So there's a Windows version, too?

TIEMANN: Yeah. Cygnus has built a library called 'Cygwin 32.' And what this library does is if you happen to have come from the UNIX world, but you must use Windows - For example, our development tools, our C compiler, C++ compiler, debugger - you know, we have about 2.7 million lines of UNIX code that we sell commercial support for. With Cygwin 32, we can port all of that code immediately over to a UNIX compatibility layer that lives on top of Windows. So, if you have UNIX applications, yet another Open

Source software will let you run on Windows, if you have to.

DVORAK: Oh, really?

TIEMANN: Yeah.

DVORAK: And it works?

TIEMANN: It sure does. We've got - We estimate that we've got a user community somewhere between 100- and 200 thousand people. And that's based on the same kind of estimating techniques that are used to gauge 7.5 million Linux users or 5 million Pearl users or, you know - So many Apache sites.

DVORAK: Where does free BSD fit into the picture?

TIEMANN: Well, free BSD is, I think -

DVORAK: And tell people what that is.

TIEMANN: Sure. So free BSD is a variant of the Berkeley software distribution. Originally, Berkeley was one of the main driving forces behind the UNIX operating system. In fact, Bill Joy, one of the founders of Sun, had a very heavy hand in the development of BSD's version of UNIX. And Sun built a $10 billion company around that operating system. However, not everybody was satisfied with the terms between U.C. Berkeley and AT&T. And some groups started projects to 'free up' the Berkeley operating system. Unfortunately, different people had different visions, and so there was free BSD, net BSD, X-Free 86. And each of these different splinter groups claimed technical and moral superiority. And while they were fighting each other, infighting from the same release, Linux just came and stole the cake.

DVORAK: So you're a big - In other words, you're on the Linux fair wagon, period.

TIEMANN: We are on the Linux bandwagon.

DVORAK: As far as you're concerned, everything else is no good.

TIEMANN: Well, no. I wouldn't say that. But as far as I'm concerned -

DVORAK: Now, a lot of people'll tell me, for example, that BSD running on an X-86 machine, not to get too technical, of course, the absolute fastest version of UNIX you can use to serve web pages. There's nothing faster.

TIEMANN: That may or may not be true. But I would say -

DVORAK: At least I got that much out of you.

TIEMANN: I would also say, you know, just to prove that I'm not a complete free-bigot, if you look at the actual world record, it's on an SGI origin machine, running IRIX. So, it may be true that free BSD on an activity sites.

DVORAK: I would have thought it would have been a DEC 8600 or 8400--one of these. I came here with a number. It's 8400, I guess.

TIEMANN: Well, it's not DEC anymore. Maybe that's why it's not the fastest anymore. It's Compaq now.

DVORAK: Yeah, well -

TIEMANN: No, it's amazing. And, actually, another point I wanted to make: you talk about the--going back to the issue of corporate America being insecure about free software. You know 10 or 20 years ago, people were fundamentally insecure about the concept of software. When Bill Gates was going around trying to go public, you know, Ann Lindblad was one of the few people who could see the value in software. But the conventional criticism against software was, 'You know, there's no steel. There's no bricks. There's no--you know, all your assets go home at night.' Free Software takes that to the next level. Instead of it just being your assets, go home every night. Your assets were all over the world, everyday. And that two-edged sword means that not only does it make it more difficult to understand the investment proposal. But at the same time, it means that you are setting the standard. And we believe that whether true value in software is not the bits, it's the bits people use. And that's why Windows has so much value today is there are so many users. And that's why Linux and Gnu and the software that we're supporting is becoming so important is because, quite frankly, the world is starting to use that as their new favorite platform.

DVORAK: So how do you make money?

TIEMANN: Well, we do it in three ways. We do basic support, the kind of support that you would expect to get from a Sun or a Microsoft or an Oracle. Now, we sell support services for a variety of tools that sit in large market spaces. So we've got a pretty good upside in just our support business. We also do contract development services. And what that means is when a customer comes to us and they've got a specific need, we usually can deliver a better solution or a better - we can do the work faster than other people can. Why? Because we are experts in the software. It's a bit like the difference between prosecuting a case yourself or going to a professional lawyer to do the job for you. Everybody has the right to prosecute under the law. But when you need your job done, you're going to go to a professional, and that's what we do. And then, finally -

DVORAK: How many people you think have realized the importance of outside software development houses? Most people that have - this is now, you know, a lot of the software companies, none of this stuff they developed themselves. It's all done by guys like you.

TIEMANN: Yeah! No, and that's - I mean that's great news for the successful out-sourcing companies. As long as you can maintain your track record, it's great to be an out-source solution.

DVORAK: Sounds like a good, all-around scheme if you ask me!

TIEMANN: Well -

DVORAK: So now somebody wants to get involved with Open Source stuff, what would you recommend? They go in the web and just look it up?

TIEMANN: Yeah. Actually, we have our website: www.sourceware.cygnus.com. And on that website we have pointers to the development projects that we invite people to join in. We have an Open Source, royalty-free, real time operating system, which is the kind of thing that goes into, say, a car CD-player, or a video game, or a wireless cell phone. So if you're interested in building embedded systems, eCos, our royalty-free operating system is one thing. Our development tools which we consider to be absolutely leading technology, are available for download as well. And if you want to go beyond what we do, a good central place to start is www.fsf.org. FSF is the Free Software Foundation. And they were sort of the grandaddies of this idea of free software. They have pointers in the direction of the Gimp and the direction of fractal generators, music editors, math program spreadsheets, word processors, you name it. They've got the whole Pandora's box.

DVORAK: We're talking to Michael Tiemann, who is the founder of Cygnus Solutions out of Sunnyvale, California, about the free software that's available to us all. Michael, thanks for being with us today.

TIEMANN: Thank you very much, John.