

EPISODE FIFTY-TWO OF "ARMED WITH SCIENCE: RESEARCH APPLICATIONS FOR THE MODERN MILITARY," A DEPARTMENT OF DEFENSE WEBCAST HOST: DR. JOHN OHAB GUEST: R. PAUL RYAN, ADMINISTRATOR, DEFENSE TECHNICAL INFORMATION CENTER SUBJECT: DEFENSE TECHNICAL INFORMATION CENTER'S DODTECHIPEDIA DATE: WEDNESDAY, JANUARY 27, 2010

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(Intro music begins.)

ANNOUNCER: "Armed with Science: Research and Applications for the Modern Military" is a weekly Webcast that discusses cutting-edge science and technology and how they apply to military operations.

Each week we will interview scientists, administrators, and operators to educate and inform our listeners about the importance of science and technology to the modern military.

(Intro music ends.) DR. OHAB: Good afternoon, and welcome to Episode number 52 of "Armed with Science: Research and Applications for the Modern Military" on Wednesday, January 27th, 2010.

I am Dr. John Ohab. I work at the Office of the Assistant Secretary of Defense for Public Affairs.

As you may know, "Armed with Science" is all about communicating science to the public. Today we're going to be focusing on how the Defense Department is helping scientists communicate with each other.

We're joined by Mr. Paul Ryan, administrator of the Defense Technical Information Center, or DTIC. He's going to give us the full run-down on the suite of collaboration tools known as DoDTechipedia.

This scientific and technical wiki provides DOD scientists, engineers, program managers and operational war fighters a forum to communicate, to market some of their expertise, and to monitor current trends and advancements in their fields of knowledge.

Mr. Ryan, it's a real pleasure to have you here on the program today. How are you?

MR. RYAN: I'm doing fine. Thanks very much for inviting us, Dr. Ohab.

DR. OHAB: Well, thank you for being here.

Now, Mr. Ryan, could you get us started by just telling us what is DoDTechipedia and why was it launched?

MR. RYAN: DoDTechipedia is a site that we created to provide a forum for DOD scientists, engineers, policymakers, as well as their contractors, to have a more open, collaborative environment to discuss things as they were developing, as opposed to -- what our normal process is here at DTIC is to collect formalized, finished products and services, a technical report, for instance.

We wanted to have something to bridge in between there that allowed discussion of quickly emerging topics and have an opportunity to have that collaborative experience back and forth across the Department, given the pace of how things continually move in today's world.

DR. OHAB: So there was no formal mechanism for scientists and engineers to collaborate across the Department before DoDTechipedia?

MR. RYAN: Not that we're aware of, not with using a wiki technology. And that was part of the process here, to integrate a Web 2.0 technology as one of the tools to begin to help the Department see also how these tools might be useful within our workspace.

DR. OHAB: And when was it launched? MR. RYAN: It was officially launched October of 2008. We clearly did some prep work ahead of that, but that was the official hard launch date, 1 October.

DR. OHAB: So it's had some time to breathe. How many users are currently on DoDTechipedia?

MR. RYAN: We're -- probably get about 11,000 users now. In the early stages, it was growing at about 1,000 users per month.

So some of those -- there's been some turnover, but we're at 11,000 at this stage.

DR. OHAB: And what individuals currently have access to the wiki?

MR. RYAN: It's a limited wiki, so it's not open to the public. So it is accessible to DOD employees, military/civilian, DOD contractors, as well as we've opened it up to other federal employees and their contractors.

So we have a registration system in process that allows all of these people in. We essentially vet who comes into the system to make sure they have the proper credentials to gain access.

DR. OHAB: And what type of information are they sharing on the wiki?

MR. RYAN: They're sharing a very broad array of information. We have a number of technology areas that are being populated, and much like the well-known Wikipedia and other elements in government -- Intellipedia and Diplopedia -- the people that use this system get to propose the topics and the subject areas they want.

So we've had a lot of -- a lot of these topics have been generated by the customers, the users, because they're of interest to them, to their research, or it's of some need for their organization. So they're populating it.

But -- everything from data and sensors to medical to biometrics to industrial processes, networking, non-lethal weapons, you can just -- you name the subject, and it's eligible to get on the -- become part of DoDTechipedia. We're constantly looking for people to add new topics that are of interest to them.

DR. OHAB: Do you have a sense for what some of the hot topics right now might be on DoDTechipedia?

MR. RYAN: I think sensors is certainly a hot topic. There are things like myotraumatic brain injury. Biometrics is a hot topic. And advanced materials, for instance. Energy is a hot topic, given the Department's consumption of energy. DR. OHAB: Now, DoDTechipedia is a collaboration tool. Can you pinpoint examples in which DoDTechipedia has actually stimulated information sharing and innovation?

MR. RYAN: Well, I think -- I guess the best way to talk about that would be to talk a bit about how it works and the fact that somebody has a topic out there that is of interest to them. They write up a short blurb, a discussion of it.

And then the people that then come in and contribute and how that discussion grows is an example of how it works. And we're talking about people joining a discussion by virtue of seeing a topic that interests them who might not have known whoever authored the initial piece of work.

So it's opening up doors and collaborative opportunities for people that might not know one another.

And it's also -- because Defense contractors have access to it, it's letting them see some of the areas and challenges that the Department faces. And if their company has something that might relate to that, they get to talk about it. They get to draw attention to it. So it's also that collaboration with the contractor community.

DR. OHAB: So essentially, the wiki has a blog component that anybody who's using it can use to kind of talk about what their particular interests are, or expertise?

MR. RYAN: It does, yeah. And that's just kind of the tip of the iceberg.

In addition to that blog feature where we've got topics and people back and forth, we have other sections in there where we kind of lay out -- we allow an organization to put something in about themselves.

For instance, the current featured organization right now is the National Geospatial Intelligence Agency. We have other designations in there where there's ongoing descriptions of various countries, and people can add to that.

We have an entire section on how do you do business with the Department of Defense, for -- if we've got a contractor coming in and wants to get a better idea of how do they go about doing business, there's a whole section there that they can get to.

So a whole lot of different capabilities that we either gleaned from talking to others who've created wikis, or the customers who've been using DoDTechipedia brought to our attention and said, we'd like this feature, or, can you give us this capability.

DR. OHAB: Now, is there any kind of mechanism to harvest some of these ideas and interactions, and then to translate them into a tangible, usable product that would benefit the war fighter? Is that part of it right now?

MR. RYAN: That's part of it in another piece of what we call the DoDTechipedia family of services.

We have a piece that's called DefenseSolutions, which was launched in February of '09. And the whole purpose of the DefenseSolutions website is to pose a challenging question that the Department has a high level of interest in and ask for, particularly, contractor responses to that. The question, the one question that this process started out with was battlefield forensics. So they had a number of sub-areas underneath it, but it was -- here's what we're trying to do in the Department, here's our problem, what can you do for us in a way to help us solve this problem, like picking up fingerprints out in the desert on some item they might find.

So that was designed to answer that specific question. And the promise of DOD was we will have somebody take a look at that input that you, as a company, put in there, very quickly, and evaluate whether it has merit.

And if it has merit, they would make sure that it went off to the DOD organization that had direct responsibility for that.

And we have had -- I think we've had what we call success in that area, in that the office that is driving the functional support of this, I think we're up to about almost 100 ideas received in less than a year.

And after having winnowed them all down and taking the best of them and passed them off to some DOD organizations for some evaluation,

we have four as of this date that contracts have been awarded. And two more are in the source-selection process.

So the Department had a need; they publicized very specifically in February. And in a rather quick fashion, for normal procurement standards, we've got a number of organizations, contractors, that put forth a solution that the Department is very interested in.

Now we're getting ready to expand from that single here's-this-issue to a host of issues. And that should be coming soon, where we'll put more questions out there.

But we really wanted to get our feet on the ground and firmly understand the process to fulfill our commitments of putting out a question, hearing what contractors had to offer, getting those evaluated and taking the gold nuggets there and keep pushing them down the line till we when had a contract with the contractor.

DR. OHAB: So DoDTechipedia and Defensesolutions.gov are part of a larger suite of applications.

Can you round out the rest of those applications for us?

MR. RYAN: Sure I can. The third leg of that is really DoDTechipedia up on the SIPRnet in a classified version. So the main DoDTechipedia is on a limited site. Sensitive information can be put in and discussed there, but it stops at sensitive.

So we have taken DoDTechipedia and put it up on the SIPRnet so that if there needs to be a higher-level discussion, up to the secret level, it can occur there. So the suite really is DoDTechipedia on the NIPRnet, DoDTechipedia on the SIPRnet, and DefenseSolutions. That's what we refer to as the DoDTechipedia suite of services.

DR. OHAB: And DOD, in many ways, is a leader in the government use of social media. But there are certain areas like internal social networking which, for most organizations, are yet to be fully realized.

What are the hurdles that you've encountered, and how are you guys overcoming them?

MR. RYAN: Well, you're right. DOD pushes technology as well as any department. But there are some limitations of the technology that the entire Department's ready to sign up for right away, given the unknowns of the technology, as well as given the concerns with national security information.

So when we start to look at these new technologies and try to get them vetted within the people that have the say over whether this makes sense, you're addressing security issues, you're addressing OpSec, you're addressing privacy information, you're addressing public affairs, you're worried about proprietary information by contractors being protected.

So there's a whole host of bona fide issues that really have to be worked through and understood by all of the various pieces of the Department that are the proponents for those particular areas.

So that's one of the challenges we face and the Department faces in just adopting everything wholesale, right from the get-go. So we work our way through these things.

We started with this wiki technology, and we'll continue to work with the Department in addressing what the issues are, what are reasonable risks, what are some mitigation strategies, and how can we move forward.

DR. OHAB: What kind of feedback have you received from leadership around the Defense Department?

MR. RYAN: We've received a lot of positive response to DoDTechipedia. The former DDR&E in AT&L, Mr. Young, was really the first person to challenge us to do something like this, to bring something -- bring people in the Department together for something quick that they can discuss. So he was one of the first people who talked about it.

We've also been receiving recognition from the new administration, the Office of Science and Technology Policy, looking at the president's push to transparency and open government. They learned about DoDTechipedia and its ability to involve wider audiences. So we've shared what we've learned with those offices and how we've been pushing forward, as well as we've -- we got some recognition from outside the Department about DoDTechipedia. We won a Government Computer News award for outstanding information technology achievement, in late 2009.

So we're very pleased with the reception that the site has with the customers, with so many people signing on, becoming users of the site, contributing to the blogs, asking questions -- being gardeners, which implies a certain cultivating of the content going in to make sure there is some strain of reliability of the information, to senior leadership, pleased with the progress as well as some recognition by some independent groups of --

This is a nice tool that really moves the Department a step ahead.

DR. OHAB: What other organizations are you working with to maintain and further develop DoDTechipedia?

MR. RYAN: Well, DoDTechipedia really grew out of a collaborative effort between at least three offices within DDR&E. One was DTIC, who's a part of DDR&E. But also the Rapid Reaction Task Force was very interested and very helpful. And they're the driving force behind the DefenseSolutions.

But also, the other office that was heavily involved was the NII, Networks and Information Integration, the CIO's office, who also participated very heavily in moving this forward, being a partner in

working through issues, helping all of us understand what the issues were, what people were looking for, what was the best approach.

So it was really a partner in a cross-DOD, cross-agency DOD team of several members that came together at the right time and worked at DoDTechipedia.

DR. OHAB: Tell us a little bit more about DTIC, or the Defense Technical Information Center, beyond the work it's doing in DoDTechipedia.

MR. RYAN: Our organization can trace its existence back 65 years. In fact, this year, 2010, we're celebrating our 65th anniversary.

We began with a collection of research information developed by and worked on in the War Department during the war and prior to the war. Added to that was collections of captured documents from World War II, and it became the basis of a scientific and technical information collection.

And we have grown from that to be the Department's brain trust and central repository for the billions and billions of dollars, over the last 65 years, that have been poured into research, development, tests and evaluation.

So our main focus throughout that period of time has been to collect that information, format, process, preserve it, make it available, disseminate it to the user community and head down that path.

We are also strong, very strong in providing Web services for the Department. We got into the business of doing Web pages when they were in their infancy. We recognized the power of that.

And one of our , I think, lucky breaks was we recognized that putting together a Web page, we ought to have some librarians and information people work on what that Web page ought to look like. Because they had navigation skills, organizational skills, search skills that really made our pages kind of pop.

And we were then, from there, asked to do a page for the Department. And so we did DefenseLINK for its first 10 or 12 years of existence, out of DTIC, helped create the hosting environment and supported it here.

And to this day, we probably do about 100 different Web pages for various elements of the Department because, A, of our skill, the economies of scale that we can offer here because of the environment we've got here and the expertise we've got here in putting those kinds of things together. So that's another phase of what we do.

And I would say the final, main thrust of what we do is we also manage 10 centers of excellence for the Department. These are contractor-operated organizations, and their generic name is information analysis centers.

But there are 10 of these in very specific slices of technology or a function that is very important to the Department, such as chem, bio, nuclear or radiological protection; or information assurance, or advanced materials, or reliability analysis, or survivability/vulnerability.

So we have under contract 10 centers that have bona fide experts in all of those areas that offer their services to the Department, to the CO-COMS, to the services, to look into very specific problems that they may have and try to turn around quick solutions for them.

At the same time, those outfits are generating a lot of scientific and technical information that plows back in to our large databases here and becomes available to the rest of the Department.

DR. OHAB: Just a couple of questions left before we finish today's program.

Mr. Ryan, you are the administrator of the Defense Technical Information Center.

MR. RYAN: Correct.

DR. OHAB: Can you give our listeners a sense for what it means to be the administrator?

MR. RYAN: Well, for me, this is a great job. I have the responsibility for a staff of government employees of about 300, or a little bit less. We have another 50 or so contractors that support us a great deal.

And it's an organization of people that really believe in what we're doing. We have people that have been here their entire careers -- and I'm talking 30 or 32, 33 years' government service, and maybe 30 of those years have been right here at DTIC.

So we have people that believe in what we do here, so leading that organization is really a blessing for me. I also am very much a believer -- my background is information and a hard science. So I'm very much a believer in the use of technology and science that is what has kept this country at the forefront of defending it.

And the ability to gather that and then make that available in the widest range as possible to the Department, cognizant of protecting limitations and security with that, is a challenge that I enjoy and it's a challenge that we as an organization, I think, do very well at.

DR. OHAB: Yeah, and I did read your biography a little bit. And it said that you worked at the Ballistics Research Laboratory at Aberdeen Proving Ground, providing scientific and technical information on major Army weapons systems earlier in your career.

MR. RYAN: Yes.

DR. OHAB: And then you've since had a variety of roles in information science and technology.

I was hoping you might tell us a little bit about your background training.

MR. RYAN: Well, I -- as I alluded to, my undergraduate degree is in a hard science, it's in mathematics from Villanova University. And from there I went to graduate school, and I went to Drexel University's Graduate School of Library and Information Science.

And the information science, the use of computer and automated systems to work with information was just emerging there. And so that's the program I was in. And by the time I graduated, the Army was recruiting for people with backgrounds in a hard science as well as a library or information degree.

And so that's essentially how I started, and I was lucky enough that the first two organizations I worked for, Army organizations -- the Picatinny Arsenal and the Ballistic Research Laboratory themselves were very steeped in technology, the use of technology, advanced technology.

Plus, particularly at BRL, a recognition that regardless of the expertise of the scientists in that laboratory, if they didn't commit their work to paper, to journal articles, and get it disseminated, that work was done in the dark. And the director there at that time was a firm believer in that.

So it was certainly being at the right place at the right time. And coincidentally, it didn't hurt that the Ballistic Research Laboratory, with the University of Pennsylvania, helped develop the first computer, the ENIAC.

So that strong connection to technology and moving information around -- and large amounts of information -- was kind of a heritage of the Ballistic Research Laboratory. They were one of the early participants in ARPANET, which became the Internet.

And from there, my natural progression was to the central organization within the Department that was responsible for that across the Department.

DR. OHAB: And just a couple minutes left here.

I was hoping you might comment on -- what are some experiences that you learned from, or what are some learnings that you could pass along to the broader science and technology community that you've learned from being part of DoDTechipedia?

MR. RYAN: I guess I would answer that by saying it's the recognition that whatever your question is, generally the tendency that you as a scientist or engineer might have to look in a particular place needs to be tempered by that may not be the right place to look.

And you need to expand your horizons in where you look and who you talk to, and -- whether it's expanding by looking at things like DoDTechipedia, these new tools that are trying to cross a broad spectrum of scientific endeavor, or whether you talk to information professionals that, through their experience, can help guide you to what might be a source of information for whatever it is you're looking for.

We're looking to take next steps of we've got this pool of information. What we'd like to do now is identify the researchers in the Department and be able to say, here's something on nanotechnology --

I didn't realize there was an individual at China Lake and an individual at Wright-Patterson Air Force Base that were heavily involved or have an interest in technology. I knew about the guy down at Dahlgren, but I didn't know about these other two.

So we're -- our next step is going to be to look at something where we identify the people in the Department and what they're working on, what their interests are, what kinds of things they've published by subject, and be able to link in that manner.

DR. OHAB: Our guest today is Mr. Paul Ryan, administrator of the Defense Technical Information Center, or DTIC.

Mr. Ryan, thank you again for joining us today. It's been a real pleasure. MR. RYAN: Thank you very much, Dr. Ohab.

DR. OHAB: Listeners, please tune in next week when we are joined by Dr. Thomas Meitzler, scientist at the U.S. Army Tank Automotive Research, Development and Engineering Center, or TARDEC, and Dr. Joy Hirsch, professor at Columbia University and director of the Program for Imaging and Cognitive Sciences.

They will discuss functional magnetic resonance imaging, also known as fMRI, and its use in investigating mild traumatic brain injury.

Thank you again for listening. I am Dr. John Ohab, and you've been scienced.

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