WEBVTT

00:00:02.040 --> 00:00:04.880
<v SPEAKER_2>Hello again, and welcome to another episode of Defence
Deconstructed.

00:00:04.880 --> 00:00:08.480
<v SPEAKER_2>I'm your host and president and CEO of The Canadian
Global Affairs Institute, Dave Perry.

00:00:08.480 --> 00:00:16.820
<v SPEAKER_2>On this Triple Helix edition of the show, we're joined by
James Grannan, Vice President Government Relations at Lastwall, to
discuss trends in cyber defense and security.

00:00:18.140 --> 00:00:20.380
<v SPEAKER_2>James, welcome to Defence Deconstructed.

00:00:20.380 --> 00:00:22.400
<v SPEAKER_1>Happy to be here.

00:00:22.400 --> 00:00:33.300
<v SPEAKER_2>So we're going to have a chat about some aspects of cyber
conflict, cyber defense, but to get started, you tell the listeners a
little bit about your background and what it is you're doing now.

00:00:33.300 --> 00:00:34.280
<v SPEAKER_1>Yeah, absolutely.

00:00:34.280 --> 00:00:35.920
<v SPEAKER_1>So I'm James Grannan.

00:00:35.920 --> 00:00:42.820
<v SPEAKER_1>Currently, I'm the VP of Defense and Government
Initiatives at a cybersecurity startup called Lastwall.

00:00:42.820 --> 00:00:53.080
<v SPEAKER_1>Lastwall specifically specializes in identity, like
digital identity, validating that you are who you say you are when
you're logging into your company's cloud systems, for example.

00:00:53.080 --> 00:00:56.260
<v SPEAKER_1>My background is actually from the Canadian Armed Forces.

00:00:56.960 --> 00:01:03.480
<v SPEAKER_1>I started there in a part-time basis, leading to a full-
time in the Canadian Naval Reserves.

00:01:03.480 --> 00:01:44.860
<v SPEAKER_1>I worked full-time as an intelligence officer in Halifax

for a number of years, working on conducting basically like threat assessments on vessels coming into our national waters from foreign countries on the Atlantic Coast, and then integrating that across other government departments, such as CBSA, Transfer Canada, RCMP, etc., as well as communicating different threats across within the communication systems of the Canadian Armed Forces, so notifying higher headquarters when vessels of higher threats came in, and sometimes partaking in various operations that they would organize as a result of the various things.

00:01:44.860 --> 00:01:47.040
<v SPEAKER_1>So that was pretty cool and pretty interesting.

00:01:48.600 --> 00:02:04.900
<v SPEAKER_1>I ended up finding that though very cool and fun, and I have a couple of interesting stories out of it, I actually desired some leadership experience, and that drove me to apply and transfer into the Canadian Army and specifically becoming an artillery officer.

00:02:05.940 --> 00:02:15.720
<v SPEAKER_1>Quite, quite different experience and different journey from sort of sitting, you know, sitting as an intelligence officer, as a watch officer, you're in a very small group of people.

00:02:15.720 --> 00:02:25.120
<v SPEAKER_1>Mostly the work is your own, and you're speaking at a very high level very quickly briefing admirals and generals and things as just a young officer.

00:02:25.120 --> 00:02:43.160
<v SPEAKER_1>The artillery was quite a different experience, but it gave me a lot of very good leadership experience at that tactical and operational level and really, I think, set me up for success in doing what I'm doing now.

00:02:43.200 --> 00:03:07.000
<v SPEAKER_1>But roughly, in the artillery, artillery officer, I became a forward observation officer, learning how to control artillery, use the different tactical nets that we have and the different computer systems to organize our artillery systems and units across large organizations integrating at the brigade and division, even went on a core level exercise in England at one point.

00:03:07.000 --> 00:03:18.120
<v SPEAKER_1>Gave me a very good experience about how we as a military communicate at all levels like up down and across how we integrate with other countries.

00:03:18.120 --> 00:03:25.840
<v SPEAKER_1>Most notably our closest allies UK and I say the US with

an asterisk now as we have to.

00:03:26.200 --> 00:03:32.640
<v SPEAKER_1>But realistically and at the ground level like yeah like fully integrated with those countries and very good experience as a result.

00:03:32.640 --> 00:03:48.420
<v SPEAKER_1>So fast forward 2020 I got out of the got out of the army got out of the Canadian Armed Forces and sort of ended up a little unintentionally unemployed, a place I had planned on working, ended up closing the office I was going to work in.

00:03:48.420 --> 00:03:54.460
<v SPEAKER_1>And so I ended up six months and rolling around not doing a whole lot, but it was actually very good for me.

00:03:54.580 --> 00:03:57.380
<v SPEAKER_1>I didn't realize how wound up I had become.

00:03:57.560 --> 00:04:02.760
<v SPEAKER_1>And this was actually a very good opportunity to unwind and to sort of process my experience.

00:04:02.820 --> 00:04:08.520
<v SPEAKER_1>I started building my, I had this idea, sort of building my own little startup, technology startup on the side.

00:04:10.000 --> 00:04:12.520
<v SPEAKER_1>Temporarily found another job I don't need to get into at the moment.

00:04:12.520 --> 00:04:21.480
<v SPEAKER_1>And about six months into it, I needed someone that had an ability to really like do coding, to build the idea that I had.

00:04:21.480 --> 00:04:28.240
<v SPEAKER_1>And I called up an old friend of mine, Troy Nelson, who's the Chief Technology Officer here at Lastwall.

00:04:28.240 --> 00:04:29.420
<v SPEAKER_1>And one thing led to another.

00:04:29.500 --> 00:04:34.180
<v SPEAKER_1>They were selling to the DOD in the States, a real small company.

00:04:34.180 --> 00:04:35.360
<v SPEAKER_1>They invited me to join them.

00:04:35.360 --> 00:04:38.060
<v SPEAKER_1>I was the sixth person to join the team.

00:04:38.060 --> 00:04:44.140
<v SPEAKER_1>And at first, it was really like I didn't know a lot about what they were doing, the identity.

00:04:44.140 --> 00:04:47.900
<v SPEAKER_1>They really just saw my military background as an asset.

00:04:47.900 --> 00:04:55.760
<v SPEAKER_1>I could speak very differently to the customer base that they're focusing on than they could as strictly technologists.

00:04:57.060 --> 00:05:07.660
<v SPEAKER_1>And that kind of became one of the main skill sets that I learned was that ability to learn about and understand the technology and how it applies.

00:05:07.660 --> 00:05:16.940
<v SPEAKER_1>And I owe a lot of that ability to learn fast and to learn how the effect of things matters on sort of like an operational output.

00:05:16.940 --> 00:05:20.620
<v SPEAKER_1>I owe that to my training as an Army officer, most notably.

00:05:20.620 --> 00:05:24.420
<v SPEAKER_1>So yeah, I'd say like that I've done a number of roles here at the company.

00:05:24.840 --> 00:05:32.760
<v SPEAKER_1>A lot of it's been organizational management, leadership, planning, process, building, as we sort of expand.

00:05:32.760 --> 00:05:37.980
<v SPEAKER_1>And as I said, I was number six and we're 35 now and that was just a few years later.

00:05:37.980 --> 00:05:48.500
<v SPEAKER_1>So we've been sort of like consistently growing and growing our business as well in the United States primarily, and really trying to knock on Canada's door.

00:05:48.500 --> 00:05:56.720
<v SPEAKER_1>But as you well know, it is not a simple task to do and sort of need the long game to get involved in Canada.

00:05:56.720 --> 00:05:59.180

<v SPEAKER_1>So really just chasing that down at the moment.

00:05:59.180 --> 00:06:04.580
<v SPEAKER_1>And before we started recording, I was saying I've been travelling to the US a lot.

00:06:04.800 --> 00:06:11.900
<v SPEAKER_1>We're really making a big push to expand in the United States as much as possible.

00:06:11.900 --> 00:06:21.180
<v SPEAKER_1>Defence spending across the board, not only in the United States and Canada and NATO is going up, but there's a lot of opportunities, particularly in cybersecurity.

00:06:21.180 --> 00:06:31.780
<v SPEAKER_1>A lot of bureaucratic red tape is kind of getting cut and slashed and streamlined rather quickly, sort of right across the board in all countries.

00:06:31.780 --> 00:06:37.240
<v SPEAKER_1>So it's an exciting time to be in this industry.

00:06:37.240 --> 00:06:48.820
<v SPEAKER_2>And so in addition to having met a number of years ago, we had the opportunity to chat with you and some of your other colleagues in the New Brunswick Industry Cluster last summer in Fredericton.

00:06:48.820 --> 00:06:53.380
<v SPEAKER_2>Part of a series of roundtables we're doing, trying to engage with some folks in industry across the country.

00:06:53.380 --> 00:06:59.500
<v SPEAKER_2>So a little bit more perspective from some of the smaller firms across Canada.

00:06:59.500 --> 00:07:10.460
<v SPEAKER_2>But since then, I know that in addition to that engagement in the summer in Fredericton, you've been traveling a lot, just over in Europe for some discussions at NATO of late.

00:07:10.540 --> 00:07:28.120
<v SPEAKER_2>So particularly since, in a highly dynamic environment, as we're holding this conversation towards the end of March in 2025, I've been some a lot, well, in the last couple of days, fair amount of discussion about strength and ties between Canada and Europe in that defence sector.

00:07:28.120 --> 00:07:34.640

<v SPEAKER_2>I guess to clear things off, kicked off substantively, I guess, did you come away from your discussion in Brussels?

00:07:35.660 --> 00:07:47.520
<v SPEAKER_2>What were some of the highlights about what folks in Europe are thinking about in terms of defence trends, technology, and the way they may be looking at this side of the ocean, at least the northern part of it?

00:07:47.520 --> 00:07:48.220
<v SPEAKER_1>Yeah.

00:07:48.220 --> 00:07:56.280
<v SPEAKER_1>So in terms of background, and also just by way of plug, that Triple Helix roundtable that you did hold was actually very good.

00:07:56.280 --> 00:08:00.520
<v SPEAKER_1>It caused a lot of side conversations after with a number of the companies.

00:08:00.620 --> 00:08:04.080
<v SPEAKER_1>So it was a really good initiative on your part.

00:08:04.080 --> 00:08:07.440
<v SPEAKER_1>So thank you for that, and thanks for including a lot of small businesses.

00:08:08.460 --> 00:08:08.700
<v SPEAKER_2>Yeah.

00:08:08.700 --> 00:08:16.440
<v SPEAKER_1>So we took part, Lastwall took part in this NATO private sector engagement that was put on by the Policy Insights Forum.

00:08:16.440 --> 00:08:28.800
<v SPEAKER_1>Sam Noam Associates organizes that, and a number of countries from primarily Canada, Canadian companies and might have had someone from whatever, like in the company that lives in England or whatever attend.

00:08:28.800 --> 00:08:33.280
<v SPEAKER_1>But it was first off very fascinating.

00:08:33.420 --> 00:08:39.360
<v SPEAKER_1>We went to a number of places like NATO headquarters, the civilian overall headquarters.

00:08:39.360 --> 00:08:40.700
<v SPEAKER_1>We also went to shape headquarters.

00:08:40.700 --> 00:08:48.040
<v SPEAKER_1>We went down to Luxembourg to the NATO procurement agency and spent a day with them, which was fascinating.

00:08:50.080 --> 00:09:01.920
<v SPEAKER_1>And we also visited a number of offices at the European Union, including the European Union Defence Agency and their Agency for Economic Engagement.

00:09:01.920 --> 00:09:06.480
<v SPEAKER_1>I'm going to mess up the name, but that's the rough outline of it.

00:09:06.520 --> 00:09:17.160
<v SPEAKER_1>But like thematically, like what we, what we, this group really found was how eyes wide open everyone seemed about what's going on.

00:09:17.160 --> 00:09:24.240
<v SPEAKER_1>Not only in Canada, but down, down to like political candidates of like, who do we think is going to win the Liberal Party leadership?

00:09:24.240 --> 00:09:27.800
<v SPEAKER_1>We're getting asked questions from like EU folks about that.

00:09:27.800 --> 00:09:43.140
<v SPEAKER_1>And it surprised me that they were that tuned into it, but they're tuned into it because the relationship that we have with the US, they're very intent and keen on learning how they can better their relationship with us because the same thing is happening to them.

00:09:43.140 --> 00:09:51.960
<v SPEAKER_1>US seems to be sort of withdrawing a little bit internationally, and they want to, you know, shore themselves up and they know that we're on the same boat.

00:09:51.960 --> 00:10:11.680
<v SPEAKER_1>So we got a very friendly and open impression about the desire to partner more, be engaged more, and really tighten those links between all of our countries, whether that's sort of under an EU umbrella or NATO umbrella or some other new thing.

00:10:11.680 --> 00:10:23.520
<v SPEAKER_1>You know, I actually just as a side note, I know recently they're talking about some kind of defense agreement between the EU and Canada, which is automatically overlapping the exact conversations that we are having.

00:10:23.520 --> 00:10:30.580
<v SPEAKER_1>And, you know, like on the funny side, we joke about like, yeah, OK, EU membership needs to be a, you got to be in Europe to be a member.

00:10:30.580 --> 00:10:34.040
<v SPEAKER_1>But we say, you know, we have France right next to St.

00:10:34.040 --> 00:10:36.760
<v SPEAKER_1>Pierre and Michelin and we're neighbors with Russia.

00:10:36.760 --> 00:10:40.300
<v SPEAKER_1>So we're not really that far off.

00:10:40.300 --> 00:10:45.060
<v SPEAKER_1>Yeah, so a lot of the discussions were about the defense industry in general.

00:10:45.060 --> 00:10:51.760
<v SPEAKER_1>You know, all the companies that were attending this event are in the defense industrial base in Canada and internationally.

00:10:52.500 --> 00:10:56.620
<v SPEAKER_1>And so obviously, like, okay, the defense, we're visiting defense organizations.

00:10:56.620 --> 00:10:59.340
<v SPEAKER_1>I'm there with a cyber security company.

00:10:59.340 --> 00:11:01.780
<v SPEAKER_1>There was one other that was along for the ride.

00:11:01.780 --> 00:11:06.040
<v SPEAKER_1>And so naturally, all of our sort of interests and might not sort of are in that realm.

00:11:06.040 --> 00:11:09.280
<v SPEAKER_1>So we paid a little bit more attention to that.

00:11:09.320 --> 00:11:19.460
<v SPEAKER_1>NATO, you know, it's interesting because, like, they have their different domains, right, like sea, land, air, space, cyber.

00:11:19.460 --> 00:11:22.380
<v SPEAKER_1>Great.

00:11:22.380 --> 00:11:28.380
<v SPEAKER_1>But the actual ability to order anything in the cyber

realm is left at the national level.

00:11:28.380 --> 00:11:34.320
<v SPEAKER_1>All procurement for IT systems and cyber security remains at the national level.

00:11:34.320 --> 00:11:48.800
<v SPEAKER_1>And so, like, if NATO has a headquarters or shape or whatever is, like, going to be doing some kind of operation, whether offensive or defensive in the cyber realm, they actually have to request an effect from the countries, and then countries will volunteer to provide the capability.

00:11:50.200 --> 00:11:53.280
<v SPEAKER_1>So I found that to be quite interesting.

00:11:53.540 --> 00:12:09.140
<v SPEAKER_1>But it's really tied to the fact that when we're defending stuff in a cyber context, we're usually using some kind of encryption, and those encryptions and what they are and how they're done really is still held at that national level at the end of the day.

00:12:09.420 --> 00:12:12.100
<v SPEAKER_1>And so it makes sense that it flows that way.

00:12:12.100 --> 00:12:37.460
<v SPEAKER_1>Now, that said, they too were pretty eyes wide open, but it was one sort of important takeaway that I noted from a cyber perspective and from a sort of defence perspective in a military context was the sense of urgency that we noted at SHAPE headquarters was noticeably different from what we noticed at the civilian NATO headquarters.

00:12:37.460 --> 00:12:55.000
<v SPEAKER_1>So the sense of urgency of like Russia being a threat, China being a threat, in particular as it applied to the information domain, cyber domain, and sort of the influence campaigns that they've been launching our way for some time.

00:12:56.280 --> 00:13:08.840
<v SPEAKER_1>They were a lot more aware of the significance and the seriousness of those situations than I think that we were able to glean at the NATO headquarters.

00:13:10.340 --> 00:13:20.480
<v SPEAKER_1>So at my company, one of our employees just finished a master's in law in her dissertation, a master's in law dissertation in cyber security.

00:13:20.480 --> 00:13:41.760
<v SPEAKER_1>And one of the main conclusions that she had was actually that if we considered the cyber domain as if it were a physical domain, that the systems that we own are a physical thing, and if they get attacked, that's a declaration of war.

00:13:42.740 --> 00:13:47.100
<v SPEAKER_1>We would already be in World War III from that perspective.

00:13:47.100 --> 00:13:52.500
<v SPEAKER_1>But we think differently for whatever reason about IT systems and cyber.

00:13:52.680 --> 00:13:56.080
<v SPEAKER_1>And we found that like at this NATO thing, it was no different.

00:13:56.080 --> 00:14:07.520
<v SPEAKER_1>One of the colonels or brigadier generals that was giving us a brief, when someone asked about cyber, he went, well, cyber is one of these special child things.

00:14:07.520 --> 00:14:16.280
<v SPEAKER_1>And we have found that, you know, when we get to those things, there seems to be some reluctance to really understand it.

00:14:16.280 --> 00:14:21.840
<v SPEAKER_1>And I think it's because very quickly a lot of stuff in the cyber realm becomes highly technical.

00:14:22.880 --> 00:14:35.380
<v SPEAKER_1>And so there's certainly like an understanding, an ability to like do all the reading, do your homework, to actually understand what people are talking about.

00:14:35.380 --> 00:14:38.280
<v SPEAKER_1>And there's, you know, I did it in this company.

00:14:38.820 --> 00:14:42.400
<v SPEAKER_1>But what we do in cyber security, like here's cyber, right?

00:14:42.400 --> 00:14:44.320
<v SPEAKER_1>And here's identity.

00:14:44.320 --> 00:14:47.280
<v SPEAKER_1>And then if this is identity again, here's what we're doing.

00:14:47.280 --> 00:14:49.700
<v SPEAKER_1>So it's like, it's very niche.

00:14:49.700 --> 00:14:55.300
<v SPEAKER_1>And so we company to company, capability to capability, there are common things like there aren't any industry.

00:14:55.300 --> 00:15:04.840
<v SPEAKER_1>But it's literally like its own world of products and services adjacent to all the physical ones that we have.

00:15:07.480 --> 00:15:17.900
<v SPEAKER_1>But I'd like one of the other take aways that we had was that defence production is increasing right across the board.

00:15:17.900 --> 00:15:23.260
<v SPEAKER_1>That puts a lot of strain on the existing systems, and that's a challenge that everyone has that we need to sort through.

00:15:24.440 --> 00:15:33.760
<v SPEAKER_1>Though there are a lot of innovation programs coming out, and like nationally, each country has their own, NATO has their own as well aimed at technology and whatnot.

00:15:36.140 --> 00:15:46.480
<v SPEAKER_1>The procurement of technology, and of particularly like IT and cyber, is still not really its own special thing.

00:15:46.740 --> 00:15:56.020
<v SPEAKER_1>It still very much falls into the same basket of the procurement of physical items, like big ticket items like tanks or whatever.

00:15:56.020 --> 00:16:20.760
<v SPEAKER_1>And the more I'm kind of like learning about how the situation is developing and learning about procurement a little bit more, I think that there's an endless amount we can learn about procurement, if you're so inclined, is that if we look at like physical assets over here, like IT and cybersecurity over here, cyber is kind of being forced into the physical one in some capacities, long, long programs drawn out over many years.

00:16:20.760 --> 00:16:27.080
<v SPEAKER_1>But really, the way that the IT development cycle works is very quick and very iterative.

00:16:27.080 --> 00:16:29.680
<v SPEAKER_1>It follows a program called Agile mostly.

00:16:31.880 --> 00:16:36.560

<v SPEAKER_1>On the flip side, physical procurement is very, like I say, long, slow, drawn out over a long period of time.

00:16:36.560 --> 00:16:51.980
<v SPEAKER_1>But I know that there's an interest in trying to make it more iterative, trying to make it more streamlined so that increasing or I guess decreasing the distance between the customer, the end user and the manufacturer in the design phase.

00:16:51.980 --> 00:17:03.620
<v SPEAKER_1>It's a very difficult thing to do, especially under a large administrative organization that requires zero financial risk and 100% operational risk.

00:17:05.220 --> 00:17:08.660
<v SPEAKER_2>This episode of Defence Deconstructed is brought to you by Irving Shipbuilding.

00:17:08.660 --> 00:17:11.180
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00:17:11.180 --> 00:17:19.600
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00:17:22.140 --> 00:17:31.920
<v SPEAKER_2>How would you characterize at a high level the discussion in Europe on the kinds of slices of the industry and the marketplace that you're interested in?

00:17:31.920 --> 00:17:35.640
<v SPEAKER_2>How does that juxtapose with the kind of conversations you hear in Canada?

00:17:35.640 --> 00:17:43.480
<v SPEAKER_1>When I'm looking, when discussing specifically what we do at NATO, and I'll bring up an example at the NATO procurement agency.

00:17:45.820 --> 00:18:01.560
<v SPEAKER_1>Because technology and IT is still something highly controlled at the national level, one of my takeaways was like from a selling perspective, if we want to sell to the NATO countries, we actually still have to just go to those countries basically.

00:18:01.560 --> 00:18:15.240
<v SPEAKER_1>They can try, if we know that there's a few countries all interested in our product, we could try to send that to NATO and the NATO procurement agency could certainly do all the administration to facilitate the purchase across the countries.

00:18:15.240 --> 00:18:18.640
<v SPEAKER_1>But the countries have already agreed to buy that one
product.

00:18:18.640 --> 00:18:26.640
<v SPEAKER_1>So from an effort perspective, including NATO from that
angle is actually just an extra step, and I don't see advantage in it
right away.

00:18:27.980 --> 00:18:32.400
<v SPEAKER_1>Now, the agencies themselves could actually be potential
users, though.

00:18:32.400 --> 00:18:37.480
<v SPEAKER_1>Like the NATO procurement agency itself could potentially
be a client or other NATO organizations.

00:18:37.480 --> 00:18:42.600
<v SPEAKER_1>So it's interesting from that perspective.

00:18:42.600 --> 00:18:51.940
<v SPEAKER_2>As you're thinking about, so part of what we're doing
with our Triple Helix Network is looking to situate a couple of
different aspects of emerging technology, their implications.

00:18:52.080 --> 00:19:03.860
<v SPEAKER_2>Again, so tying it back to kind of the cyber discussion
and what your firm works on and in that particular segment, what are
some of the impacts of some of the wider emerging tech trends?

00:19:03.860 --> 00:19:09.960
<v SPEAKER_2>So, you know, pick anyone you want, but, you know,
quantum advancements, AI, machine learning.

00:19:10.780 --> 00:19:15.220
<v SPEAKER_2>How would you characterize some of those
interrelationships with the cyberspace in particular?

00:19:17.960 --> 00:19:35.800
<v SPEAKER_1>Yeah, I could probably like include cyber in general and
sort of defence in this because the backbone of either is the ability
to communicate, the ability to communicate uninterrupted and
unmanipulated by an adversary.

00:19:35.800 --> 00:19:40.360
<v SPEAKER_1>And so the ability to do that becomes centralized around
your ability to secure that information.

00:19:42.260 --> 00:19:51.420
<v SPEAKER_1>And we do, right, like the Army, the Navy, everyone is

securing their information, securing their communications through classic encryption.

00:19:51.420 --> 00:19:56.380
<v SPEAKER_1>So they're using like algorithms like RSA and Diffie-Hellman or whoever.

00:19:56.380 --> 00:20:05.000
<v SPEAKER_1>They're securing their data before it gets transmitted and the recipients have the ability to unencrypt it and read it correctly.

00:20:05.000 --> 00:20:07.620
<v SPEAKER_1>And in an ideal situation, our adversaries cannot.

00:20:08.480 --> 00:20:15.180
<v SPEAKER_1>So that's true like whether we're talking on a radio that goes over the Internet or a radio that goes over HF or VHF.

00:20:15.180 --> 00:20:23.120
<v SPEAKER_1>It's true right now our communication, David, over the Internet can be encrypted if we're using a VPN, for example.

00:20:23.120 --> 00:20:35.140
<v SPEAKER_1>But it can be all the systems in between, all the systems that support and conduct the business that we do every day in government, in intelligence organizations, in the military.

00:20:36.360 --> 00:20:40.880
<v SPEAKER_1>A lot of times, I think when we think cyber, we think like someone sitting in an office.

00:20:40.880 --> 00:20:52.580
<v SPEAKER_1>But it applies to any time that we're sending data over a network using Internet protocols, which we do even at a brigade command post, talking to another brigade command post.

00:20:52.580 --> 00:21:00.640
<v SPEAKER_1>The means in which it utilizes it might go by one point to another, by satellite or over VHF or whatever, in like Dataverse or wherever we do it.

00:21:00.640 --> 00:21:06.280
<v SPEAKER_1>But the information gets transmitted in some capacity and it needs to be encrypted in some capacity.

00:21:06.280 --> 00:21:20.460
<v SPEAKER_1>With that knowledge that it's everywhere, and encryption is basically everywhere, one of the growing trends, and we could almost look at it like a threat, in fact, we should look at it like a

threat, is the rise of quantum computing.

00:21:20.460 --> 00:21:29.420
<v SPEAKER_1>Now quantum can do all quantum computers once they are created at a capability level that's significant enough.

00:21:29.420 --> 00:21:39.460
<v SPEAKER_1>And what that means, I won't go into the really technical aspect of it, but their capability is increasing every day, their ability to process in what's called qubits instead of bits.

00:21:39.460 --> 00:21:51.720
<v SPEAKER_1>At some point, so between now and a future date, quantum computer will be able to process data in a significant way such that it can break all modern encryption.

00:21:52.180 --> 00:22:01.980
<v SPEAKER_1>So all of those communications that we utilize every day, and including, like for the listener, including your banking information.

00:22:01.980 --> 00:22:08.060
<v SPEAKER_1>When you're doing your online banking over your phone or whatever, your computer, all of that is encrypted.

00:22:08.060 --> 00:22:11.120
<v SPEAKER_1>Quantum computer eventually will be able to break that.

00:22:11.120 --> 00:22:13.880
<v SPEAKER_1>So that obviously has some significant implications.

00:22:13.880 --> 00:22:31.960
<v SPEAKER_1>So there's the physical threat of that happening, the being able to break it, and there's also the informational threat of adversaries collecting data now, knowing that one day they'll be able to decrypt it, and basically retroactively learn about our secrets.

00:22:31.960 --> 00:22:33.980
<v SPEAKER_1>There's some assumptions based into this as well, right?

00:22:34.940 --> 00:22:36.960
<v SPEAKER_1>Like, when's it going to happen?

00:22:36.960 --> 00:22:38.280
<v SPEAKER_1>Where is it going to happen first?

00:22:38.280 --> 00:22:42.320
<v SPEAKER_1>If these systems come out, there won't be many of them at first.

00:22:42.320 --> 00:22:51.260
<v SPEAKER_1>So it's not like you could blanket the entire earth and collect all the information and decrypt whatever you want at any one point.

00:22:51.260 --> 00:22:53.940
<v SPEAKER_1>But eventually that might be true.

00:22:53.940 --> 00:22:56.840
<v SPEAKER_1>So in the near term, when countries, and they're starting to, right?

00:22:56.840 --> 00:23:10.040
<v SPEAKER_1>Like Canada has a national quantum strategy, and the UK just came out with one for their government defence organisations about a planned rollout of when they need to be quantum safe.

00:23:11.200 --> 00:23:19.020
<v SPEAKER_1>And it's usually like right now a lot of countries are talking fully capable into the early 2030s is kind of the timeline.

00:23:20.280 --> 00:23:26.120
<v SPEAKER_1>It's likely that there'll be a quantum computer available to our adversaries.

00:23:26.120 --> 00:23:30.840
<v SPEAKER_1>We call it a cryptographically relevant quantum computer, probably before that.

00:23:30.840 --> 00:23:35.780
<v SPEAKER_1>And so there is an impetus to start building in protection now.

00:23:35.780 --> 00:24:00.080
<v SPEAKER_1>For the last, I can't remember the exact time frame, eight or ten years, the National Institute of Standards and Technology in the States, which governs a lot of different standards for how IT systems and whatnot works, actually has a line on quantum encryption and quantum algorithms that they believe, if used, will be safe from a quantum computer being able to break it in the future.

00:24:00.080 --> 00:24:07.440
<v SPEAKER_1>And so it's called MLChem for anyone that's interested, the one that we would use.

00:24:07.440 --> 00:24:24.840
<v SPEAKER_1>So where this is going is that there's products available now, either products that are hardware-based, that can conduct this type of encryption to protect data now in hardware systems.

00:24:24.840 --> 00:24:28.200
<v SPEAKER_1>So I think radios or servers or computers.

00:24:28.200 --> 00:24:32.800
<v SPEAKER_1>And there's also software-based ones that utilize these algorithms to protect our data now.

00:24:32.800 --> 00:24:42.380
<v SPEAKER_1>So there's products available that can protect our communication between you and I right now, David, in a way that a quantum computer couldn't break that downstream.

00:24:43.920 --> 00:24:46.820
<v SPEAKER_1>So there's a big tail on that.

00:24:46.820 --> 00:24:48.860
<v SPEAKER_1>I know there's a lot of explanation coming back to this now.

00:24:48.860 --> 00:24:53.700
<v SPEAKER_1>So like our company specifically, we're looking after identity.

00:24:53.700 --> 00:25:05.340
<v SPEAKER_1>And we're logging, like when you're logging into your cloud system or your server, and you're logging into services that you need to use, services that likely again utilize communication.

00:25:06.720 --> 00:25:11.860
<v SPEAKER_1>The log in itself is a critically important operation.

00:25:11.860 --> 00:25:17.100
<v SPEAKER_1>At the log in, you see the exchange of credentials, and that can happen in a number of different ways.

00:25:17.100 --> 00:25:21.100
<v SPEAKER_1>And it's the credentials that help validate if you were the right person logging in.

00:25:21.100 --> 00:25:25.760
<v SPEAKER_1>And so we hear a lot about like phishing attacks.

00:25:25.760 --> 00:25:33.360
<v SPEAKER_1>That's one of the, like basically 80% of unauthorized network infiltration is a result of lost or stolen credentials.

00:25:33.780 --> 00:25:44.940
<v SPEAKER_1>And some of that is a result of a phishing campaign by whatever malicious actor, criminal or whatever, collecting your data and then utilizing it to log into your account later.

00:25:44.940 --> 00:26:00.220
<v SPEAKER_1>There are lots of products available, like ours included, that is phishing resistant by virtue of the way that we store the credential in your computer and the way the protocols we use to do the exchange basically of information and the secure handshake it's called behind the scenes.

00:26:02.280 --> 00:26:04.820
<v SPEAKER_1>It gets very technical, very quick.

00:26:04.820 --> 00:26:10.820
<v SPEAKER_1>From a user perspective, the newer technology that's like orders of magnitude more secure is actually way easier to use.

00:26:10.820 --> 00:26:15.660
<v SPEAKER_1>It's usually just a like a face recognition or a fingerprint on your computer.

00:26:15.660 --> 00:26:17.380
<v SPEAKER_1>Yeah, exactly.

00:26:17.380 --> 00:26:23.820
<v SPEAKER_1>When you're starting to see a rollout now too of pass keys, you might have heard that term being thrown around.

00:26:23.820 --> 00:26:27.340
<v SPEAKER_1>That's like orders of magnitude more secure than passwords.

00:26:27.340 --> 00:26:29.720
<v SPEAKER_1>And it's a little less secure than some of the other ways that we can do things.

00:26:30.040 --> 00:26:33.340
<v SPEAKER_1>But it's like very good and it's very easy and it can be deployed very quickly.

00:26:33.340 --> 00:26:39.220
<v SPEAKER_1>So you'll probably start seeing that a lot more even in the workplace in the coming years.

00:26:41.520 --> 00:26:45.620
<v SPEAKER_1>Yeah, so like all of this is like pretty critically important.

00:26:46.160 --> 00:26:53.600
<v SPEAKER_1>The login, as I said, the login, the moment of logging in, that authentication that happens in the background is the keys to the kingdom.

00:26:55.500 --> 00:26:57.400
<v SPEAKER_1>At least keys into the first place that you get into.

00:26:57.920 --> 00:27:08.980
<v SPEAKER_1>I'll add one other piece here that I think is like relatively important, is that the idea of like zero trust, I'm sure you've heard that term as well being tossed around and it's becoming fairly fundamental.

00:27:08.980 --> 00:27:10.520
<v SPEAKER_1>Sorry.

00:27:10.520 --> 00:27:11.500
<v SPEAKER_2>Explain the fundamental part.

00:27:11.500 --> 00:27:15.220
<v SPEAKER_2>It seems in some cases, in some circumstances, it's buzzword deep.

00:27:15.220 --> 00:27:16.040
<v SPEAKER_1>Yeah, totally.

00:27:16.340 --> 00:27:16.620
<v SPEAKER_1>Yeah.

00:27:17.340 --> 00:27:20.000
<v SPEAKER_1>And I won't go much deeper at the moment, but we'll keep it pretty high level.

00:27:20.000 --> 00:27:41.300
<v SPEAKER_1>But in terms of like a metaphor, the classic way of thinking about how we break in or get into a system or how we protect a system rather would be like, if I have a village in a castle and I have a wall around that and I have a moat around that and the drawbridge goes down and I let people in based on who has the right whatever, they come in.

00:27:41.300 --> 00:27:46.720
<v SPEAKER_1>But inside of this town or castle or whatever, all the doors are unlocked.

00:27:46.720 --> 00:27:49.220
<v SPEAKER_1>That's like classic architecture.

00:27:49.260 --> 00:27:50.320
<v SPEAKER_1>You log in to the system.

00:27:50.320 --> 00:27:52.740
<v SPEAKER_1>Then once you're in, you have free range.

00:27:52.740 --> 00:27:54.580
<v SPEAKER_1>You can get into everything.

00:27:54.700 --> 00:28:04.980
<v SPEAKER_1>The zero trust from again, using the same metaphor is more like, there might still be a moat and a gate around the external thing, but every door is locked inside.

00:28:04.980 --> 00:28:11.260
<v SPEAKER_1>Every door is vetted whether or not you, David, are allowed to go into that door, even if you have the key.

00:28:11.260 --> 00:28:12.880
<v SPEAKER_1>That's basically in a nutshell.

00:28:13.060 --> 00:28:17.840
<v SPEAKER_1>It's an oversimplification, but it's a good visual way to think about it.

00:28:17.920 --> 00:28:25.100
<v SPEAKER_1>So at no level of entry into any subsystem, is there any trust assumed?

00:28:26.720 --> 00:28:43.460
<v SPEAKER_2>So just to start concluding the conversation, as you're thinking about some of those trends, and you're pointing out a tech evolution that is moving rapidly, but just thinking about quantum issues in particular, there's still some time to get ready.

00:28:43.460 --> 00:28:56.720
<v SPEAKER_2>If you were to think of a couple of things beyond what you'd already touched on there, that we could do to get better prepared for some of those problems we're going to be facing in a not too distant future, what would one or two of those considerations be?

00:28:56.720 --> 00:29:03.580
<v SPEAKER_1>I mean, right off the bat, it's the different projects and program managers need to be tuned into this stuff right away.

00:29:03.580 --> 00:29:10.160
<v SPEAKER_1>The evolution, like the technology life cycle, is something like two to four years and it's accelerating.

00:29:10.160 --> 00:29:13.920
<v SPEAKER_1>It's very different than the traditional industrial life cycle of decades.

00:29:15.300 --> 00:29:26.980
<v SPEAKER_1>And so the people that are in positions, decision making

positions about our technologies and how we bring them on board, really need to start moving faster, and they need to be able to accept some more risk.

00:29:26.980 --> 00:29:32.920
<v SPEAKER_1>And there's mitigations that exist to offset the risk that we accept as we're trying to purchase these things.

00:29:32.920 --> 00:29:37.780
<v SPEAKER_1>But if we don't sort of move at the speed of technology, then we'll very quickly be left behind.

00:29:39.780 --> 00:29:42.980
<v SPEAKER_2>Well, James, thanks for joining us on Defence Deconstructed.

00:29:43.280 --> 00:29:49.040
<v SPEAKER_2>Talk a little bit about some of your experience with Lastwall and some of your recent travels.

00:29:49.040 --> 00:29:50.220
<v SPEAKER_2>Last question to you.

00:29:50.220 --> 00:29:52.180
<v SPEAKER_2>What are you reading these days?

00:29:52.180 --> 00:29:56.400
<v SPEAKER_1>I almost nonstop read about Antartica.

00:29:56.580 --> 00:29:59.840
<v SPEAKER_1>Ernest Shackleton and the heroic age of exploration.

00:29:59.840 --> 00:30:01.700
<v SPEAKER_1>I've been very obsessed with it for a number of years.

00:30:01.700 --> 00:30:04.320
<v SPEAKER_1>So I'm just still working through a lot of the big ones.

00:30:04.320 --> 00:30:10.540
<v SPEAKER_1>But yeah, if you haven't explored the story of Ernest Shackleton, you can pick it up almost anywhere.

00:30:10.640 --> 00:30:18.220
<v SPEAKER_1>And it's just an outstanding story of grit and leadership and determination against all odds.

00:30:18.380 --> 00:30:20.600
<v SPEAKER_1>It's wonderful.

00:30:20.600 --> 00:30:29.080

<v SPEAKER_2>And as you're having this conversation, at some point, you might have an opportunity to exchange with some of your former, I guess, in a wider sense, shipmates.

00:30:29.200 --> 00:30:35.100
<v SPEAKER_2>Now that they're from the Royal Canadian Navy, it's going to have a bit of an Antarctic experience of its own.

00:30:35.100 --> 00:30:35.740
<v SPEAKER_1>I bet.

00:30:35.740 --> 00:30:36.300
<v SPEAKER_2>All right.

00:30:36.300 --> 00:30:36.640
<v SPEAKER_1>Right on.

00:30:36.640 --> 00:30:37.260
<v SPEAKER_1>Well, thank you, David.

00:30:37.260 --> 00:30:39.220
<v SPEAKER_1>Appreciate the opportunity and always good to see you.

00:30:40.280 --> 00:30:41.920
<v SPEAKER_2>Thanks, James.

00:30:41.920 --> 00:30:44.120
<v SPEAKER_2>Thanks for listening to Defence Deconstructed.

00:30:44.120 --> 00:30:49.580
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00:30:49.580 --> 00:30:56.180
<v SPEAKER_2>If you like what we do and want to keep us going, think of donating to us at cgai.ca slash support.

00:30:56.180 --> 00:30:58.780
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00:30:58.780 --> 00:31:02.440
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