Barclay Damon Live Presents: The Cyber Sip Podcast

Episode 9: "Russian Cyber Threats, the FDIC, and 'Tech Hesitancy,' With Sultan Meghji, Part 1"

Speakers: Kevin Szczepanski, Barclay Damon and Sultan Meghji, Former FDIC Chief Innovation Officer

[Kevin Szczepanski]: Hey, everyone, this is a Barclay Damon Live broadcast of Cyber Sip, Practical Talk About Cybersecurity. I'm your host, Kevin Szczepanski. Let's talk.

[Kevin]: Hey, everyone, welcome back to another episode of Cyber Sip. It was one year ago last month that Sultan Meghji became the first chief innovation officer of the Federal Deposit Insurance Corporation. That is the independent federal corporation that insures bank deposits in the U.S. But equally impressive is Sultan's 30-year career at the forefront of security and technological innovation. Sultan has launched, scaled, and sold startups in frontier technology, biotech, and fintech. He has built some of the core plumbing of the internet. We're going to ask him about that if we have time, along with missile defense, national security systems, and even lip-reading supercomputers. He's also a professor in the graduate programs at Washington University's Olin Business School, where he focuses on AI, startups, and quantitative risk. And notably, at least to me, Sultan served on an aid mission for Africa and Asia, where he worked to provide banking solutions to hundreds of thousands of residents who would not otherwise have had them. Sultan Meghji welcome to Cyber Sip.

[Sultan Meghji]: Thank you so much for having me, Kevin, it's a pleasure to be here.

[Kevin]: It's our pleasure to have you and thank you. Before we talk about your service at FDIC and what you learned there, I think I'd be remiss if I didn't focus first on the Russian invasion of Ukraine. There's been a lot of talk, experts telling us that the invasion increases the risk of cybersecurity attacks and the risk that there will be collateral effects of those attacks on consumers and businesses throughout the world. Can you talk to us a little bit about that? What's the nature of the risk and what should we as consumers and in small to midsize organizations be worried about?

[Sultan]: Well, first off, I think like you and like most of the listeners to this podcast, I think we're all just sitting here in shock and horror at what the Russians have been doing. And I just can't, for the life of me, believe that we're having this war and we're seeing this happen in front of us in 2022. My heart goes out to the poor people of Ukraine and the other people in the region. It just it's awful.

[Kevin]: Absolutely.

[Sultan]: On the cyber side. Absolutely. So a cyber offense is part of the Russian playbook, whether it's overtly, through their own actions, or covertly through fronts, criminal gangs and things like that. And every single American, and every single American business is a target of someone in that Russian sphere of cyber influence. Now, as a consumer, I would say there is a lot of basic triage that we all need to do. We need to make sure to have good password hygiene. We need to make sure our firewalls are on.

We need to use multi-factor authentication, and we also need to remember that there are a lot of bad people with a lot of technology who are trying to get our dollars. Because the dollar is still the best currency in the world to have. So as a consumer, always, err on the side of caution. You get an email that seems weird, delete it, call the bank or call whomever sent it to you. There are a lot of basic things you can do there. If I was speaking as a business owner or a senior leader in a small to midsize business, I would say, you know the playbook. Make sure that your technology teams are patching things. Make sure they're reporting on them through the leadership team, to your C-level suite and your board of directors. I always say that the way I can tell an organization is doing the right things in cybersecurity versus not is I ask, do you have a board member who is accountable to the shareholders for the cybersecurity of your organization? If the organization says, oh yes, and it's this person right here, then I know they're in the right, they're doing the right things. There's a lot of tactical things I could talk about, but that's a second one. You know, I think a lot of us are very concerned about offensive cyber activities by the Russians, and it...at least so far has not seemed like there's been a lot going on, at least publicly. And the thing I would say to a lot of people is that doesn't mean you should lower your guard because just because things aren't hitting your inbox doesn't mean they aren't happening. We've seen satellite disruptions. We've seen a variety of different activities both in and around Ukraine on the internet, as well as military and national security infrastructure being attacked. This is going on right now, every moment of every day. And that knob has been turned up a couple of notches. So don't think that just because you haven't heard lots of companies struggling with it, that it hasn't been occurring. The second thing I would say is it is absolutely clear that Vladimir Putin completely misjudged the timing and how quickly this this exercise, the set of terrible exercises as he's been calling them in Ukraine, would go. Everything indicates that he thought this would be a three- or four-day activity. This is, I think, 10 times worse than his Vietnam. This is this is going to conceivably take down the Russian state. And he's seen pushback not just from neighbors, but also globally, from individuals, from American business is really flexing its muscles here, and at some point he's either going to have to admit defeat, or he's going to have to continue to ratchet it up. So and I worry that cyber is one of the ways he would do that.

[Kevin]: Yeah, no, that's definitely a concern here as well, Sultan, that's a great point of just from the humanitarian disaster, seeing thousands of Ukrainians, hundreds of thousands of Ukrainians displaced, the firing of missiles and attacks on civilian targets, it's something that many... a good portion of our population has not seen in in their lifetimes, and we certainly hope that we hope for the best. But as you say, we have to plan for the worst, and cybersecurity is certainly one of the big risks.

[Sultan]: Absolutely, it is. And I think the apparent war crime of using cluster munitions against civilian populations has no place in the 21st century. And I really do. I think, like so many people hope that we can all convince him to stop the terrible things he is doing. But you know, Russia really has a conventional military. They have an intelligence service, they have a degree of a space-based system. They have nuclear, and then they have cyber, right? And we've seen almost all of these, you know, so happily, not nuclear yet, but he's been rattling that saber. So I would not be at all surprised if we start seeing more cyber activities now. And I think we've certainly seen it already in civilian populations. But then the ...what do they call it? The Ukrainian IT army? They've gone on the offensive as well. I mean, I think we've all seen some of the videos and certainly having all of this broadcast on social media is making this a radically different experience to a war. And it's a I just really pray and hope that the civilians are out of harm's way and we get this stopped as quickly as possible.

[Kevin]: No. I share your concern and your prayers. Our hearts and thoughts go out to them, and we'll certainly keep monitoring the situation and appreciate your thoughts on the cyber security aspect of this disaster. But there certainly are far more serious humanitarian issues and we'll talk more about those in the in the days and weeks to come, I'm sure. Well, let's move from this topic to your role at

FDIC. I want to ask you first about the position itself. So you were the first chief innovation officer at FDIC. What was the position supposed to be when you joined in February 2021 and how did you find out about it?

[Sultan]: Well, it made a big splash when then-Chair McWilliams announced it because she announced it a few years before. They tried to get a couple of people in the role. And when they announced it, actually a number of us in the private sector all applauded it. We thought it was an amazing thing for an agency like this to do, especially because she was very clear she didn't want a long-term government employee. She didn't want a lawyer, she didn't want a policy person. She wanted someone who actually knew how to get things done at a pace that kind of matched what the private sector did. She didn't want a three-year white paper exercise or something like that. And so, you know, there were a number of us that had been part of the discussion early on and had recommended names and kind of been part of the process and making introductions and all that good stuff. And it just never took. And so then about 18 months ago, I was basically giving a speech and was in, you know, one of the Zoom green rooms and made an off the cuff comment that I was going to stepping out of the CEO job I was in and it was going to kind of plan to retire and sit on the beach for a year or two and relax because I've been going through, I think, seven years at that point between the aid work and then building this company. And about 15 minutes after the Zoom panel ended, I got a phone call from the FDIC and the rest was history. I won't say I was drafted because they don't have the authority to do that, but it was an amazing opportunity. And the role was really to look holistically at really three things. One, was to look at how the agency itself operated and to find ways to transform it and make it more digital and make it more efficient and really make it a more appealing place to work. The second piece was looking at the entire banking ecosystem in the United States and figuring out what we could do to help keep it the best banking system in the world is how I would say it, whether we're talking about cybersecurity and resilience, or making sure it was an equitable system where everyone had equal access to the kinds of products and services that they needed as individuals. And then the third was figuring out how the agency would interoperate with its other regulatory partners at the state, federal, and international level. And so it was a very broad mandate, and the idea very early on was to take a subset of that total picture and find a couple of places to really start to derive some direct value. So an example of something we did very early on was when I joined the FDIC, you know, everybody had smartphones, but they couldn't use all of the products and services that we used in FDIC. So you couldn't get on Teams, couldn't get on Zoom, couldn't open email attachments. And so, you know, working with some technology providers in about 90 days, we got it so that everybody at FDIC who had a smartphone or tablet had all of those features on their devices. So they weren't tethered to a, you know, a big eight-pound laptop in the midst of COVID lockdown. That's one example. I like really giving people technology where they are, and some people are very comfortable sitting at a desk all day. That's great. Some people like sitting on, you know, having like a speakerphone on their desk. Great. That's great. Some people want to have earbuds in and be on their smartphone. You know, the purpose of technology is to enable people to do the best job they possibly can in the way that makes the most sense for them. And if you are, if you are of one generation and you're used to sitting at a desk and being on a phone, that's great. But if you were of another generation and you're used to staring at your phone, you need to be equally effective. So that's one example, and that was, I call that an amplification project. We want to amplify the staff of the FDIC. A second example of something we built up was a desire for us to be more transparent and more integrated with what's happening in the private sector. Technology change is accelerating at a rate that is almost unbelievable.

[Kevin]: Right.

[Sultan]: Ten years ago, you would need $10 million and a team of 30 people and a few years to build a new piece of technology. Two years ago, it would be five people and a couple of million dollars and six months. Now it's 90 days and three people and $0. The tooling and technology has advanced so much in the last few years. So when I was leaving and that's I was leaving FDIC, I went out and bought myself a laptop, like a personal laptop, right? Brand new, fancy, fancy laptop. And I talked to a bunch of my friends and just in the really 18 months since I started talking to them and told when I left, the tooling had evolved so much that I could, in 45 minutes, get on and build something on my laptop, and I'm a gray-haired old guy, at this point. I'm not like as sharp as any of the any of the people in their 20s, for example, that the quality of technology of the of those people in their 20s right now blows anything I've ever seen. they're just the best of the best. I could in 45 minutes, build something that would have taken me years just a couple of years ago. And that iteration, that pace of change has been so integrated into the younger business community that I feel like it's like almost two different languages at this point we're seeing. And so what I was trying to do with our Texprint program, with our office hour program, with our interagency programs at FDIC, I was really trying to get the agencies to understand that's how quickly things were moving. And if you decide to spend two years having a discussion about something or a three-year program to implement Zero Trust or whatever or any of these, any of these like 36 months, 72-month kind of things—the market is going to shoot right past you. And the way I articulate it is a friend of mine runs a very large hedge fund, and he is absolutely convinced that we will see 75% change in the S&P 500 in the next six years and that every single one of these. [Kevin inaudible.] Yeah, every single one of the companies that is no longer on it is going to be replaced by a new digital native company that's being created right now that will knock them out. And it'll be an apple to apple competitor, and they will just do it faster, cheaper, higher quality of service. And just go. I'm not going to bet against this guy; this guy's made all the money in the world as a hedge fund guy for decades. If he's saying this, I believe it. I would have a hard time disagreeing with him.

[Kevin]: So you have this sense of the breakneck pace of technology and just listening to you, I can tell you're someone who is...you want to get things done, but you're also thinking ahead. I take it, though, there was a certain... there came a time shortly after you joined FDIC where you encountered what you have called technophobia, or at least a tech hesitancy. Can you talk a little bit about that? What do you mean by those terms and how did it begin to appear to you?

[Sultan]: Well, I'll tell you, anyone who's ever interacted with the regulatory system has been exposed to this. And so I went into this job knowing that there would be a decent amount of tech hesitancy, as I call it. I like tech hesitancy because it doesn't have quite a pejorative kind of feel to it. You know, just like there are people who are vaccine hesitant who, you know, they don't have PhDs and molecular biology or any of this other stuff, and they have somehow decided that in their ignorance, they know more than someone else does. And so they act against it. And fundamentally, they're also acting against their own self-interest. And that's why I say "tech hesistancy" this, because it's a very similar phenomenon for people who just don't understand technology. They're ignorant of it. And instead of going off and learning about it and figuring out how to navigate it, they just sort of push it to the side and say, you know, I'm retiring in a few years. I don't have to worry about this. I'll wait for the next guy. And that's causing some issues and I highlight some of the cultural and human capital side of it in recent discussions, mostly because I worry if we have a regulatory system where 60 or 70% of the people that work in it are going to retire in the next couple of years and they can't bring in more people, they can't attract the sharpest like these people in their 20s I was talking about. But we are at a pretty significant moment. There is more change happening in the financial system than at any other moment in our nation's history. There is more opportunity for risk in the system now than there has ever been, whether we're talking about cyberattacks like we were a few minutes ago or global competition...and the way I measure that, by the way, as I'm old enough to remember when the US dollar as a percent of global reserve currency was 85%. I am old enough to remember that. That was a couple of decades ago. Last quarter it's 59% and we're losing about a percent and a half every year. And that, by the way, I think is going to accelerate not just because of global phenomenon, but the strength of the People's Republic of China's currency and their economy. Cryptocurrencies is having an impact on that as well. The minute we get to 50%, everything changes. The US dollar is no longer the global reserve currency. That could happen in the next four years. And that fundamentally alters everything, it'll alter how expensive it is for people who are running businesses in the US to buy goods, it'll decrease the opportunity for them to sell them at premium prices. I mean, there's a million things that will happen because of that. And for me, the biggest challenge with any regulatory body (and I'm not just talking about FDIC), is that with all of this happening in the next five years, we need to have leadership and people running those organizations that are digital natives. I don't want analog people making digital decisions and trying to shoehorn a 20th century analog worldview into the 2022s of the world, 2023s, where the people who are inventing the future are doing it right now, and they're the people I was talking about in their 20s. It's an amazing community of people and they're building an entirely new world in this space, and the regulatory community really needs to see more of that so that we can understand how to make sure it's done in a safe and sound manner. And that doesn't put people at risk.

[Kevin]: Before we move on from this topic, Sultan, I want to ask you if you could give us an example. You talk about analog minds making digital decisions, 20th century lagging behind the 21st century. Can you give us an example of that? What did you see at FDIC that highlighted that problem for you?

[Sultan]: So there are just over 4,000 banks in the United States. I'm sure some people listening to this would be like, wait, that seems really low, and I'm like yes, it's the lowest it's ever been. And we lose, you know, a decent percentage of banks every year. I have in multiple examples, I saw banks come into the FDIC wanting to offer a new product or service or wanting to use a new technology to offer an existing product or service. And because the technology was unknown to the people that they were explaining it to, they were told "we won't let you do this." Or they were on a mainframe to do something and they wanted to get off the mainframe because nobody should use a mainframe anymore. Nobody should for the last 10 years and they go to a new system. And because the person at the FDIC, they were talking to you only understood mainframes. He's like, well, I won't approve you making this change because I don't understand how the internet works. So you see a lot of that, and it really has stifled innovation. And I think it's also put more people at risk because if I'm the customer of a bank, which I am and I was told, well, we can't use multifactor authentication because our banking system is too old, which the vast majority of them are. I now know that my bank account is not as secure as it used to be.

[Kevin]: Right.

[Sultan]: And so I will move to a bank that is more secure. The challenges is if you only have 4,000 or so banks and a huge number of them don't have multifactor authentication, they don't have the latest connectivity to the way people live their lives today, you know, like tap to pay with cards just in the last couple of years has come here to the United States. That's been everywhere else in the world for 20 years, and the reason it took so long is because of these same mainframe systems. So we're in a situation where every single day, every single financial institution in the United States is having to not... is fundamentally being told not to innovate, not to be as globally competitive, not as hard-driving as I'm sure some of their leadership would want to be because they have to keep the regulators happy. And now I'm not... that sounds like I'm painting a very broad brush, and I want to make it clear I am not. I'm giving some very, very specific examples of what I would consider to be analog behavior. There are some in the regulatory community, and I would highlight the FDIC as having the best, the best examiners, the best regulators in the United States. Full stop. I am still to this day. I am super impressed with the people I got to work with at FDIC. But there are some that are truly analog. I mean, some of the coolest data analytics out there, you know, there's artificial intelligence in there, they're doing all sorts of very interesting stuff to keep us all safe. But there are some people out there who fundamentally learned how to do their job in the 1980s and refuse to change, and they're just a few years away from retirement. They're like, well, I'm not going to worry about them, I'm just going to wait to retire. And when you have layers of that, layers and layers of that, you're looking at seven, eight, nine years before you get somebody in one of these jobs who's under the age of 55. And now all of a sudden, you know, we won't ever get to a digital native workforce. And in those communities, which is to me, the biggest challenge.

[Kevin]: Yeah, you're not going to have that openness to change that's so critical.

[Sultan]: So I were actually, let me tell you a really interesting story, Kevin. So earlier today, another regulator, the number two or number three in that entity called me up. And I have known this guy for a while and we had this really great conversation, and he and I were kind of, you know, just chatting about stuff, catching up or whatever. And he made the case to me. He's like, listen, I'm in my late 60s. I am not comfortable with any of this technology. I just know how to ask questions, right? And he's like, why is it up to me to be asking these questions and doing all this, like why aren't my peers doing this? I'm like, so and so, you know, your peers, they're talking about their grandkids and they're retiring and all this stuff. You've got to appreciate it. So there are some people whose heads are in the right place doing the right stuff, asking the right questions, but they are sorely outnumbered. And so I think we have to do a lot more to support them so they can get out of their hesitancy, their tech hesitancy as quickly as possible.

[Kevin]: Right. So in the time we have left, I want to ask you about a couple of other issues that you raised in your recent letter in Bloomberg. You talked about the dislike of change. Lack of expertise and the absence of continuing education. We could probably talk for a while about each of those and feel free to do just that. But I want to focus on the continuing education because that strikes me as one of the critical areas you've highlighted. And I know we're going to talk about a little bit, but because it seems to me that you could have these generational differences. But if you have a strong system of continuing education and it works from the top down, you can erase that deficit and digitize your employees and your expertise. But that was not something that was happening while you were in your role at FDIC, was it?

[Sultan]: No, it wasn't. And it's it is absolutely, I think, the silver bullet to solve so many of these problems because they don't require Congress, they don't require new budget. They don't require anything other than the will to do it. And that's why I focus so much on continuing education in so many of my conversations. You know, most of the agencies that I interacted with had some degree of a corporate university. They all had capabilities there. You know, the FDIC library, which I didn't even know existed until I joined, was an absolute amazing resource. I interacted with it all the time. These are all fantastic resources. But without the top down, without this being built into the culture, you know, I always joke people ask me if the FDIC was a meritocracy and I said, no, it's a gerontocracy. It's really based on tenure. And if you look at announcements around things, you can always kind of see where that is. When people talk about their tenure at FDIC as a as a meaningful characteristic of their qualified-ness for a job. I always laugh at that. But continuing education is easy because these are not new things. These are not skills that are just unique to the regulatory bodies. They're not unique to anything. You can go out and take the existing training resources and freshen them. You can go out get new training resources. You know, being a scrum master for a thoughtful person who's spent a few decades in the workforce is an afternoon to learn how to be a scrum master. It's not complicated, right? But because we do not require continuing education for advancement in these bureaucracies. You get people who are promoted because of their loyalty to a specific executive or promoted because of their tenure in the organization and not because they have the best skill set. And so if we're going to do that, then everybody just needs to be trained up. And so putting a continuing education requirement that is tested that isn't just like, listen to a YouTube video for an hour is, I think, the easiest thing that we could do across this entire ecosystem. And it should be, in my mind, because no one in these agencies or very few, I should say people have STEM backgrounds, it should be focused on STEM. That is the single biggest gap area.

[Kevin]: And you could be a leader in an organization without being a master of every single subject, as long as you know your weaknesses and you have people that work for you that can help fix those weaknesses and people who do understand the discrete subjects that you need to master in order to achieve this digitizing of the spectrum.

[Sultan]: I would say that that is exactly correct, and I would also say that, for so many people, in the in large organizations, and this is not just a public sector discussion, I've seen it in the private sector too. They focus on the process of doing their job and not the outcome of what their job is supposed to be doing. So it's really, I use the car example, right? If you are putting a truck together at the Rivian plant in Normal, Illinois, you know you're being successful at your job if trucks roll off the assembly line.

[Kevin]: Right.

[Sultan]: It's binary. They're either rolling off or they're not, right? You do not judge yourself a success if you went to 37 meetings in a week. And there are people who used to work for me who would judge their success at the agency based on the number of meetings they went to and how much of the process they participated in. Well, I was part of the team that worked on this thing. I, you know, I was part of this government's internal governance thing, whatever. That does not matter in the grand scheme of things. The grand scheme of things is, is the outcome of what you're doing, actually making the banking system safer and sounder? And that I said that sentence many times when I was in the FDIC and I could always tell the kind of person I was talking to because sometimes they would be like, well, I just explained by sitting in this process made it safer and sounding like it didn't. And then there were people who were like, no, no, I get what you're saying. Here's the quantitative side of what it was and that that was a big difference, but the outcome is a big deal. And so for those listening to this, it's one of the few kind of management recommendations I'd give is make sure that you're accounting through your organization, your people, everything based on the outcome. Is ...am I increasing shareholder value? That's an easy one. I'm on the board or the C-suite, right? If I'm at the C-suite or staff, it's "are we building the thing we said we were going to build? Are we servicing our customers the way our contracts are telling us to?" It is very discreet and very applied the "how many processes can you put on the head of the pin" conversation, I think really causes a lot of heartburn. Because a lot of people, I think, grew up in that environment. And given the power of the technologies today, simply by being saying, I went to this meeting or I got the email and I replied to the email or whatever that that's pretty pointless in 2022 and I feel over the next three or four years, it's going to go from being kind of not additive to actively detrimental to organizations.

[Kevin]: We're going to run out of time in a couple of minutes, Sultan. But before we do, I want to ask you about that because when you talk about the difference between process and outcomes, I think the temptation to focus on process is the metrics are there, right? I can count how many meetings I've gone to. I can count how many employees I've hired. But if I'm thinking about the metrics to measure the outcomes, it's not always as easy. How do you think about that? And what are some of the ways that an organization can recalibrate so that you have the metrics you need to measure whether you are achieving the right outcomes?

[Sultan]: So I'm going to start with one thing, which is if you don't understand the quantitative outcomes that measure your organization, that's a great place to start because that would imply that your operating model is not aligned to your stakeholder community.

[Kevin]: That's a good point.

[Sultan]: So FDIC, I'll use that as an example. It's much simpler than most people realize; FDIC was created by an act of Congress, and it has two outcomes. Outcome number one is it creates and manages an insurance fund. So, you know, when you go to a bank and you see that little plaque and you know that your checking account is insured, that's the insurance fund for that insurance for your bank account. We all know that. We all understand that that insurance fund has to be in the black and it has to be able to be there in case we need it. And only a few times in our history, we needed it and it's been there every time.

[Kevin]: Right.

[Sultan]: Second use case is to ensure—and this is almost a direct quote—"the safety and soundness of the American banking system." OK, and then there's a lot of legal language around that. But basically, it means the FDIC has to pay attention to a percentage of the financial system in the United States, the banks, and make sure that they are operating in a manner that is safe and sound so we don't see what happened with the Great Depression. Right? And that's radically changed. In 1933, it looked like one thing, in 1980 it looked like something else. In 2008, it looked like something else again. And in 2022, it looks like something else. So it's very simple. There are 4,000 or so banks in the United States. Roughly one out of every three has an in-person examination every year. Okay, fantastic. How many exams did we do? Did we find errors? Did we find success? Do we really design a system that allow us to not just understand the individual what I call the vertical risk of any one organization with a horizontal risk across the entire portfolio, i.e., the banking system? Do we at any one moment have a very good handle on what that risk looks like and what the trends are against that? That, to me is how you would analyze a discussion like this, and I don't think there's any organization in the world; doesn't matter if it's public sector, private sector, startup, 100-year-old company, non-profit, school, you all have those things. And it's not 500 outcomes you're going for. It's two, three, four. And that, to me, is a huge thing that I think a lot of people just jump right past that, and they go right into, you know, how many how many widgets are we creating or how many processes are we running? That's it.

[Kevin]: Right. Those are the right metrics. That's how that's how you think about discovering the right metrics and then measuring them. Well, Sultan, thank you so much for joining us. I want to ...I wanted to ask you about what eventually led you to leave the FDIC and some of the solutions that you proposed, including in your recent Bloomberg piece. But I wonder if that might be best for another episode. Would you be able to come back on a future episode and talk to us about those things?

[Sultan]: Absolutely.

[Kevin]: I appreciate it. Sultan Meghji, former chief innovation officer of FDIC. Thank you so much for joining us. Really enjoyed talking with you and thanks to all of you. We will be back soon with another episode of Cyber Sip.

[Kevin]: The Cyber Sip podcast is available on barclaydamon.com, YouTube, LinkedIn, Apple Podcasts, Spotify, and Google Podcasts. Like, follow, share and continue to listen.