Geointeresting Podcast Transcript
Episode 2: Ben Balter
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Welcome to Geointeresting, presented by the National Geospatial-Intelligence Agency. From the ocean's depths, to deep space, and everything in between.

NGA: Welcome to Geointeresting, presented by the National Geospatial-Intelligence Agency. Today on the show we're joined by one of the most influential people in government and technology. He was a member of the inaugural class of the Presidential Innovation Fellows, where he served as an entrepreneur in residence, reimagining the role of technology in brokering the relationship between citizens and government. Before that, he was instrumental in drafting the Presidential Digital Strategy and opened data policy as a Fellow in the U.S. Office of the Chief Information Officer within the Executive Office of the president. He is the government evangelist at GitHub, the world's largest software development network. Welcome Mr. Ben Balter.

BEN: Thank you very much for having me.

NGA: So one of the things you've said is that the government is the largest running open source project the world has ever seen. What do you mean by that?

BEN: So when you think about the idea of open source, the idea of open source is to come together to build a community around a shared challenge to solve a problem that we as individuals would not otherwise be able to solve. And without geeking out too much about political science, the Leviathan and Thomas Hobbes, that's essentially what a government is. The idea of coming together to solve a problem. We've got lots of different branches, we've got lots of issues, definitely got lots of trolls. But the idea is that everyone has the opportunity to contribute, everyone has their own say, and we're using it to solve a problem, of how we organize society, in a way that we would not be able to solve as individuals. And the fact that we can all see how it works, we can all contribute, really makes it more open than just kind of a traditional government.

NGA: You've talked about why we use closed source - some of the things you say is "open source used to be hard or used to be terrible." Can you talk more about that?

BEN: A lot of times, especially in government, when we think about open source, we remember open source of the 90s or the early 2000s. And I'm not going to lie, I used open source then and there were a lot of bad open-source projects, especially compared to the dot com bubble and the proprietary counterparts at the time. But the good news about open source is as open source has gained popularity, those projects have matured. If you look at LibreOffice, the successor to Open Office, that's leaps and bounds of when I first looked at it. But also more importantly the tooling has changed. If you look at how you contributed to the Linux kernel, a large, open-source operating system, when it originally came out – to how you contribute to an open-source project today, like Ruby on Rails, the process is simplified and standardized. Meaning you don't have to learn a process again, and the amount of meta-work, the amount of

friction, the amount of time it takes to get to the point that you can do the thing you want to do is minimized. If you want to contribute to one open source project, chances are you've contributed to another open source project, which means we get better open source, over time.

NGA: But one of the criticisms or one of the things people say about open source – is it less secure?

BEN: The idea that just because something is made public that it's less secure is an idea we call 'security through obscurity'. It's making the same argument that if you camouflage your front door, you don't need to lock it. The idea behind open source is that you build a logically secure system. I am going to build the most secure door in the world, but as long as I'm the only one with the key, I know that I'm the only one that can access that door. The good news about that is that door is going to be installed in somebody else's front door, somebody else's back door, in cold weather and in warm weather; and it's that diversity of tests, that diversity of environments that makes that a more secure project over time, so that by the time someone comes to my lock, knocking on my door, trying to break in, it's already been battle tested in lots of different environments and we've already up-streamed those improvements – so I have a better door as a result of it being open.

NGA: Let's talk about a brief history of open government. We started with a closed government, FOIA moved us into a more open government, the current administration started publishing this information without request, kind of a push-pull model. Have a synthesized that well enough? How do we move to a collaborative government, what can we learn from an open-source community that we can take back to government – here's how the sausage is made – help me make it better.

BEN: Think about open source not as a type of product or not as a specific skew, think of it as a workflow and as a philosophy. Developers know if so much as a comma is off, the entire program comes to a crashing halt. And so we've developed this really, really great tooling in the last 10, 20 years, to really collaborate over distributed teams – developers not in the same place at the same time, not working on the same thing at the same time, yet they build, produce better results than their proprietary or purpose-built counterparts. So if you look at that same type of trend, open source used to start where I'd email someone and ask them for the code and they'd send it back to me. Then we realized people keep asking for the code so we moved a place where we just proactively put the code online. An FTP server where you might be able to download a zip file or a text file with the source code. Then we moved to a place because we realized people were having issues, they were submitting improvements, where we automated that process as well. And I think we're seeing that same kind of trend in terms of open government efforts. It used to be that if you wanted some information from a government agency, you had to email them and ask for it. Then we have things like FOIA that standardized that process and then we have the administration's open government efforts- which proactively put that out. And I think if you follow that logical progression, if you look at open government efforts as where open source was five or 10 years ago, the next logical step is then standardizing of the ability for citizens to contribute things back. Right now, if I'm a citizen and I have a question about government data- is this month day year, or year month day? Is this feet or is this yards? I'm going to email the government agency, I'm going to email data@agency.gov. That's a one-on-one transaction and that's not scalable. The agency is a single point of failure. So instead if you take that lessons learned from open source, and answer

that question in the public, even better if you ask that question in the public – there's nothing secretive about asking a question to clarify a public data set. Then all of a sudden that question is not only answered because of them, as most consumers of modern technology know, if you have a problem, the first thing you do is Google it. The answer then becomes "Google-able" and it's no longer reliant on the agency to answer the question one-off, but the community then becomes self-supporting.

NGA: Let's talk about Github for a second. NGA established an official organization Github account a little over a year ago. This is thought to be the first time an intel agency had posted open-source code to Github. At the time, you called the top-down buy in from the director, incredible. In that time, the agency has announced 10 projects, for instance GeoQ. Can you tell me, in the past year, have you seen other government agencies, other intel agencies, soften to the idea of posting open-source code?

BEN: My role at Github is to have these types of conversations, to talk to government agencies, to make sure that when they take their first or second step into the world of open source, that they're successful and the community has a good experience. And oftentimes when I go to some of the more secretive agencies, at least from an outsider's perspective, the questions I'm asked is not how can we lock this down more, how can we make this more secure – but really we see the success of the open source community outside of government, within government. How can we open up more and emulate that in our own efforts, both internally and externally. So take some of the ideas, the workflows, the philosophies of open source, and bring them inside an agency, even if the code is never actually made public, to kind of bring that in behind the firewall and open source things behind the firewall, in air quotes if you will, to break down the traditional silos we have in government – where two developers and two project managers sitting literally 10-15 feet from each other, have no visibility into what other people are working on. While developers in the broader opean source community are working together halfway around the globe without any trouble whatsoever.

NGA: So where do you see the government's relationship with Github in five years or in 10 years?

BEN: Government started by using Github for open source, a very geeky thing, software development. You've got a bunch of people in their basement with mountain dew cans and Doritos crumbs all over the place, and that's awesome – that's the core of open source. Now we're seeing lots and lots of great open source projects not only to engage the public but also between agencies as well. To kind of build something once and share it elsewhere. But the idea of tracking who made what change, when – of having a trusted repository model, where anyone in the world can propose changes, but only the owner of that can accept or reject them – has far-reaching value outside of just software. There's no reason you can't use that for data, like some government agencies are doing, where all of a sudden you start treating data as code. You have the same issues, you have pull requests, you've got that pedigree of seeing changes to data over time, especially in the regulatory complex, that has a really, really powerful impact where all of sudden you can see not just where is this regulation today and what data informed that - how does that compare to five years to 10 years ago? The last kind of aspect of that, on the complete opposite side of the spectrum, going from geeky to wonky, is using it for open policy, for open government. The White House has been doing this a lot with FITARA, the IT reform act guidance, with their HGTDS guidance for building encrypting web-based services

with their playbook – playbook.cio.gov – for playbook kind of forces agencies to empower their CIOs – and all those efforts have something in common. Other than just being a PDF that's a time capsule set in stone, the White House views it as a living, collaborative document. Any member of the public, any government employee can see who made what change, when, over time, and kind of see who or what is influencing the policy, but also just hit improve this document, make an edit, hit submit and discuss it in the public rather than those conversations happening behind closed doors.

NGA: I want to close with a blog that you posted late last month; everyone can read it at ben.balter.com. Are there any reasons why technologists don't want to work at your government agency? Obviously with a headline like that I had to click on it. Some of these topics hit on improvements that NGA has been making over the past few years. Can we run through some of these?

BEN: Oh please, by all means.

NGA: You distrust your employees, let's start with that.

BEN: So, the type of work environment that a developer needs is different than the work environment that a knowledge worker needs. If you are an attorney you probably install outlook and Microsoft word and maybe adobe; 99% of your work is done in those three programs. Some sort of IT operator could set it and forget it and you will be set for your workflow for the rest of your career at that agency. Developers work a lot lower down in the system. They build libraries. They compile frameworks. If the agency doesn't trust the developer enough to empower them to accomplish that task- in practicalities we are talking about providing either some level of administrator access or at least an easy work flow to get those kinds of tools in place. As a developer myself I need to do that on a daily basis just to kind of follow along with the things my company are doing. So to provide that level of trust that says look we know that you are an IT professional, we know that you could possibly know how software could be exploited given the opportunity we are going to trust you not to do anything stupid. You probably have an unclassified laptop you have access to the public internet, you are not going to get a worm or something like that a much more traditional person might be worried about from IT to give them the tools they need to work on that job at a lower level in the system.

NGA: This is something that NGA is interested in right now- you measure your hiring system in months.

BEN: Yea, being involved in the hiring process at GitHub, a private San Francisco based company it's a complete 180. Prior to my entire experience, professional experience was in Federal Government. There you have a 13 page personnel description, a short personnel description that tells you what temperature you are going to be sitting in, how big the boxes are that you might have to lift and it's a very rigger process for good reason. When you are recruiting technical talent, if there are choices between working at some hot San Francisco start up or working for the Federal Government which increasingly developers are heading that call and heading that sense of specific duty the kind of cadence that San Francisco and the private sector works at could be days to weeks, to maybe a month from the time that you start the interview process to the time you get your first offer letter accepted and maybe even start working on the job. It's a fast moving industry. Talent moves around a lot and we need to enable

that. The government sector side of things that's not necessarily the case. If I am a developer and I would really like to work for government and the govt. says okay we know you are unemployed now and we can probably get you hired in six months, or if another start up is actively trying to recruit me and lure me in and say we can have you start tomorrow. Granted there is a lot to be said for working for the govt. and I encourage anyone who is willing to, as you know you should work for govt. but given the practicalities of the situation it's hard to hire the same kind of technical talent at the pace, speed, and scale that a lot of the private sector can.

NGA: Another reason why technologists, according to Ben Balter don't want to work for a government agency, and this one is interesting it goes to our discussion- working in the open is a novelty, and not best practice.

BEN: You'd be hard pressed to find a startup today that isn't in some way using open source on the back end, or more importantly and more likely contributing to it in the open. Look at twitter, Netflix, Facebook, you look at even large firms like Microsoft, and SAP, IBM, open source isn't the next big thing. Open source is just the way that you do business. Often times in government we like to think that government IT is probably 5-10 years behind the private sector and that's very much the case with open source. I think we are probably on the shorter side of that but we are still having the arguments for why open source is a viable option for the government and why it should be considered. A lot of times when those efforts are put out, they are done through public affairs offices or public affairs efforts when developers aren't necessarily as involved in a day to day basis as they would be in other organizations where as many organizations in the private sector and some of the more forward thinking government agencies [I would definitely include NGA in that] get involved in open source not because they like the headlines, not because they like the goodwill but because they know that's the best way to build software. They will get a better software product as a result and they wouldn't consider doing it any other way.

NGA: One last point in this that is also interesting to NGA is the culture. The culture of an agency vs. the culture of a startup. Can you talk a little bit about that?

BEN: One of the biggest things I realized going from one of the most bureaucratic organizations in the world, the federal govt. to one of the least bureaucratic organizations in the world, a San Francisco start up is the presumption is yes vs the presumption is no. I like to say you can think of an organization like a body that has an immune system. Just like your body, every time your body experiences an anti-body that it hasn't seen before it starts attacking it. The way organizations attack things is by saying no. In the private sector that is less so the case. Most organizations are less risk averse, there is less learning over time because they are younger. Where as in the federal govt. or in large organizations not necessarily limited to the federal government 'hey guys I have this crazy of the walls idea that has never been tried before. I'd like to take a week or a couple days to hack on this." Chances are your first response in govt. is going to be no. Even if it's not that crazy. Even if it's I want to use a program that the agency hasn't used before, or J query, or droople, whatever the open source project might be or a framework that the agency hasn't used before it's presumed guilty until proven innocent. IT's presumed that it's going to be a security vulnerability and that it's a bad idea. Where as in the private sector a lot of times I have experienced myself "Hey guys I have this crazy idea" and it's "Dude that's awesome! That's a great idea. Take a couple days, hack on it, and let's see where

it goes." "Oh you want to try a new framework? That's really great that you are staying ahead of modern industry trends. We want to be constantly evolving." Obviously there's a balance between them. We don't want you know-when the govt. [inaudible] if you look at the golden triangle down town they are big giant stone buildings. Startups don't build buildings that way, and as a result can move a bit faster. There has to be a happy balance between the fly by night startup that's using the hottest, greatest thing that might not be all that stable, and only using technologies that have been around for 10, 20, 30 years.

NGA: Mr. Ben Balter, the government avengist at GitHub. I am sure you can find him on twitter, Facebook, everywhere you can find-

BEN: Myspace

NGA: Myspace! Everywhere! Ben, I really appreciate you talking to us and hopefully we can talk to you again soon.

BEN: My pleasure, thanks for having me.