INNOVATIONS FOR SUCCESSFUL SOCIETIES

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[Excerpted to reduce length]

DREISBACH: This is Tristan Dreisbach, with Steve Strauss, for Innovations for
                    Successful Societies. We are talking with Santi Garces here in South Bend [Indiana]
                    on July 16.

                    Just briefly, you've got an interesting personal story. Could you tell us a little bit
                    about your background and your experiences before you came to this community
                    and started working for the City of South Bend?

GARCES: *Sure. So I am Colombian. I grew up in Colombia around all the time of turmoil into
                    the late nineties and early 2000's. I decided to come to school at Notre Dame, where
                    I studied electrical engineering and political science. I did the dual degree. They
                    have an engineering and arts and letters dual degree program. So I stayed five
                    years and then I got a masters in entrepreneurship in science and technology.
                    Around the time that I was graduating from the masters program, I thought that I was
                    going to go back to Colombia to try to figure it out how I could use what I had
                    learned.*

                    *Growing up I had always seen people come up with creative solutions to problems. I
                    remember there was a person who had a disability, who had rigged a bicycle onto a
                    wheelchair that was powered by his hands. And this guy was begging for money out
                    in the street. This guy was anywhere else but Colombia, he would probably be a
                    millionaire because he would just commercialize these things that he welded. But
                    instead he is just kind of stuck.*

                    *So it [finding creative solutions] had always been in the back of my mind, and at the
                    end of the master's in entrepreneurship in science and technology, my class did a
                    trip to Durham [North Carolina]. There were a couple of people from South Bend and
                    they saw what was happening at the American Tobacco facilities and the
                    resurgence of Durham—how they have been able to pivot from the tobacco and
                    textile industries into this tech hub. And they thought why couldn't we do it in South
                    Bend?*

                    *So we all got back, and those folks started talking to each other about why couldn't
                    we do it in South Bend. At the same time, a couple of mentors—like the former
                    director of Public Works and the former CIO for Bosch for North America and South
                    America--lived in South Bend. …Long story short, they decided to create a nonprofit
                    to help people to do interesting projects for a year.*

                    *At the time, I was buying my ticket back to Colombia. I was listening and I thought
                    that this is never going to work. I still have the notebook where I wrote: "this sounds
                    interesting but crazy. I will try it for a year and then bring it to Latin America."*

                    *So we started. There were seven graduates from the Master's program. We got
                    contracts with the school, the corporation, with the city, with the Transit Authority
                    and with a couple of other people, to try to make it better. So I started as the lead,
                    because the city was working on some smart city projects and I am an electrical
                    engineer and also had experience doing computer application development. So I
                    knew about databases and API's and all that sort of stuff.*

                    *I became the prime person in the city. That first year, we did a couple of data
                    analytics projects. We did a fleet optimization project with the fire department*

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knowing that there is an increased proportion of fire calls that are done in medical response rather than in fire response, then trying to see how they could use smaller vehicles to respond to the medical calls that don't require fire suppression. Then we also did some route optimization. So we basically showed the city they could save $3 million doing those things.

So I thought I have done my duty. I did my year. Then the mayor came to me and said, "I would like you to stay." The mayor was also the commencement speaker at our graduation, our Master's graduation. It was an interesting time because South Bend had just been named one of the top ten dying cities by Newsweek. There is not a lot of things going on, but there is this new leader. Throughout that year, I knew that the city was doing some interesting stuff. So I said all right, I'll stay around another year and we will see what happens.

So I started helping the mayor build out the performance management system. They had been reporting on KPI's [key performance indicators] when he first joined, and he basically mandated that every department track KPI's and report them in every department head meeting. But there were some challenges in terms of data collection and data maintenance and strategy. A lot of people that were just reporting whatever number was easy to report on and not necessarily things that were meaningful.

So I started working on reforming that whole system. Two months later, the mayor announced that he was being deployed to Afghanistan. So I said, "while you are out in Afghanistan, is there anything you would like to see [happen]?"

So he just assigned to me [a task]: "Help us with the gnarliest, most challenging things that are going on at the city." At the time, there were some big issues with solid waste collection. There were some customers who hadn't had their trash picked up in over two years. There was no 3-1-1. So a lot of these things surfaced because when [the new] 3-1-1 came online, we started hearing directly from residents about all these things that were going on that obviously the departments hadn't [dealt with]. …

The Director of Public Works bought this smart system for trash where they put RFID tags on every trash bin. …They were basically tracking the trucks. The idea was if we really missed someone's trash, that we would know whether it was our fault, or it was their [the resident's] fault because we would know that we had picked up their neighbors' and there is an affidavit from the picker saying that we hadn't picked them up. So that was one project.

Also, vacant and abandoned properties, which was the first big mayoral initiative, [his pledge to remove 1,000 abandoned] houses in 1,000 days. So when I started doing work, I projected out. Based on how many houses we were dealing with, the rate at which we were dealing with houses, we would have only 660 houses. So there was a big gap…. So we also worked on process improvements and on a big overhaul in code enforcement in some of the housing programs.

[Then] the former Deputy Mayor said we would like to create this new Chief Innovation Officer position. So I accepted to stick around a little bit longer. In 2015, I became the first Chief Innovation Officer. At the end of 2015, we decided to consolidate all of IT, 3-1-1, and we created a new Office of Business Analytics. So that officially started in 2016.

STRAUSS: Okay, so the Business Analytics {Office] covers the innovation, IT, and other things?

GARCES: *Yes, …basically when I started, there were no functional divisions. It was just a hodgepodge of people. In 2016, when we became a department, the first thing that I did was to create three traditional IT divisions, if you will.*

                      One of the things that allowed us to be successful is we actually were pretty radical and different in our approach. We moved to the cloud. We didn't want to maintain servers and hardware because Amazon or local providers could do it better than we do it.

                      We outsourced the help desk. Before about three-fourths of the capacity in IT was people fixing computers and I wanted our team to be able to spend more time engineering solutions and then figuring out how to deliver value to the departments and to the residents rather than changing hard drives. There were a couple of other reforms.

                      So we created the services division which does all the budgeting and service delivery. They manage the contract with the help desk. There is an infrastructure division that manages our servers, infrastructure, network, all that stuff and security. Then we have an applications division that does all the software, full lifecycle of buying the software, implementing the software, assessing the implementation of the software, and also planning for end of life of the software.

                      3-1-1 is the other division.

                      And then the Business Analytics [Office] basically took over a lot of the work that I had been doing, especially in the early days… We became almost like internal consultants to the departments, with the thought that usually the most important things are the things that no one ever has time to do…. We also worked with the departments to identify where the biggest strategic gaps were.

                      …
                      This past year, we established the Division of Civic Innovation.

                      … I was thinking about Alexander Gerschenkron and some of the advantages of being slow in adoption. …We leveraged other efforts [to promote economic development].

GARCES: *[Brian Donoghue] was a contractor and we just hired him as the Director of Civic Innovation. [He is] thinking about the pieces that are missing in the ecosystem for technology and [the new way of working in the city]…*

DREISBACH: You mentioned the mayor. So do you remember when you first met the mayor and what your impression were of him at time?

GARCES: *Yeah, well it's funny. The first time that I actually met him was at the graduation for the Master's, which was a breakfast at the visitor's center at Notre Dame [University]. He sat at the table with my mom and my sister. So my first impression was kind of funny because my mom was delighted with him. She said, "He speaks really well, really good Spanish." The first couple of years, too, he would go to the*

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Latin radio station. He would ask me to go and help him with vocabulary. He speaks pretty good Spanish, but he also speaks a bunch of different languages and sometimes the words get confused. So I would sit with him and write on napkins words that I thought that he might need. Then we start talking about snow plows and police and whatnot.

…

DREISBACH: When you and others where were [developing this program]… were there other examples that you were looking to, other cities in the U.S. or internationally that you think have some similar things well?

GARCES: *Yeah, … I leveraged the mayor's network as well as my own network to try to learn really quickly. Daro Mott and the people from Louisville were awesome. They opened the doors. We went to Louisville a couple of times. Again, we adapted some of the stuff [they were doing there]. Daro and I have a lot of similarities in how we see things, but also some conceptual differences. We talked to Nigel Jacobs in Boston. … [Brian] did a visit of the U.K. We wanted to learn a little bit of how Bristol was doing. Bristol is … a test spot for advanced wireless research. We were really interested in doing the same thing here with the PAWR program that NSF has.*

So the nice thing is I think as we have tried stuff we have actually had things to share, …and then we also learn what other cities have done. Being from Bogota, I was very familiar with the stuff that Mockus and Penalosa had done in their first terms. So that's pretty interesting to me, too.

DREISBACH: When you were looking at different examples, were there things where ..South Bend really decided, "okay, we are going to do this differently than what we have seen elsewhere?"

GARCES: *I think that here are several things that were a little bit different. One, …this is a very pragmatic place. It's almost got an anti-planning mentality. So we steered away from big sophisticated reports. Rather, you gain goodwill by doing and demonstrating that the things you did actually, had a visible [impact]. That also makes it a little bit more discombobulated because [change] tends to get going all sorts of places. …*

…We also used some of our disadvantages,--like our size and some of these things that other people think are disadvantages—to our advantage. We have the ability of coordinating a lot of things that are very hard to coordinate in a larger city, like the data strategy, the IT strategy, and behavioral pieces. There are all of these tools that are popping up in local government that I think that in a larger city have different owners. That comes at the price of them not being fully articulated, kind of in the same strategy. We have that. So what we lose in capacity, I think that we gain in kind of articulation and coordination. I think those are the two most fundamental differences.

…

DREISBACH: What do you think it is about this office that makes people want to stay?

GARCES: *…I think from the beginning the promise was stay here for as long as you need personally and professionally to stay. We are going to give you some of the biggest*

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challenges there are. There is also the expectation since we are a small team, you have to, everyone has to step up. You own it. Even people that are interns, if they are working on a policy or they are working on something… There is no, "I just want you to consider stuff."….It's you are doing the thing that needs to be solved, whether it's pre-K, whether it's the mayor's innovation challenge. I think that's something that's very empowering.

As we have continued working, we have emphasized teamwork. We have a very diverse team in experience and backgrounds and everything. But I think that everyone values what the other does. There are no egos. So it's more if someone needs something, you step up. …I think it is the thought that whatever you do could have a big impact [and also] that we were very open and I'm going to give you a general sense of what are the things that need to be done, but it's up to you to shape it however you want. So you own it. Since again part of it is there is a good amount of risk tolerance both in the city and internally, it's fine if you fail as long as you don't fail catastrophically. Let's think about how this is going to fail. It's fine, I'll have your back. It's just a lesson.

We also have been investing a fair amount of time and effort in building each person's professional network. We develop skills matrix for each division. So every year, a lot of the evaluation is, how much did people grow, what are they doing to advance themselves.

DREISBACH: What would you pick as maybe three or four most successful projects or innovations that have come out of this department?

GARCES: *That's hard to keep track. Well, it's hard because we are always thinking more about the next one rather than the ones that we have done.*

Some of the ones that I think that are very interesting are the police transparency portal. I think is really interesting. It addresses two challenges in my mind. Open data sounds nice, but I think open data means very little to the majority of people because it lacks context. I think that what we were trying to do with the transparency portal is add a lot of context to [the information made available]… We also started challenging the idea that open data is only the tabular data. There are reports that are important for understanding tabular or machine-readable data.

I think the 3-1-1 service portal has been the biggest, the crown jewel, the one that we spent the most time, but it's also not fully finished yet. So the vision is could you build the equivalent of what Dominos has as a pizza tracker, but for government— more than a case management system. [The idea] was to bring full visibility of the process...

We have engineered customer relations management (CRM). We chose Microsoft Dynamics for our CRM. We are working on an external facing portal right now.

In the first phase, it's become the Wikipedia of the city. We tell residents how they can request services, what are the services that are offered, how long can they expect a service to take. I have some visions how you can integrate open data directly into things, like publishing the [service agreement or contract] directly into the knowledge article. [For example] Currently the average wait time for an extra item pick up is about two weeks.

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Think about this 3-1-1 portal as the central nervous system, at least the peripheral part of the central nervous system. Whenever a resident initiates a request […] this needs to articulate in all sorts of other systems including the smart system for the collection of trash and whatnot. So there are a lot of interfaces that we need to build. So that's the other one that I think we are doing a good job…a smart city is a responsive city where everything is tailored to the residents, I get all of these complexities, all this data, all of these operational pieces, and then translate it into something that is meaningful for our residents.

STRAUSS: For the average citizen, there are things you get from the city, the county, the state, and the federal government. Some of these things kind of overlap and interface manually. How does this work here, when there some services the county provides?

GARCES: *Yeah, absolutely relevant and it's an interesting strategic issue for us. As the city has gotten better, a lot of the local other players have been leveraging. I spend a substantial amount of my time working with other units of government--sometimes to advise them, sometimes to help them, sometimes to push them. Right now, the county accounts for one fifth [of the 3-1-1 time]—the county would be the fifth largest department for 3-1-1 usage, partly because now when they have questions, they say, "Oh, call 3-1-1." So then the design question that we have is do we interface with the county [on behalf of residents]. We could choose to do that. Or do we just push people to those units of government? What seems to be emerging as the answer is the "fine, we'll do it mindset." If nothing else, people are going to hold us accountable. They are going to blame the mayor when their recycling isn't picked up. Recycling is offered by the county, but everyone calls and they get upset at the mayor when the recycling doesn't work. So you say "oh fine, I'll just fix it".*

STRAUSS: So are you saying about *one-fifth* of the calls coming in are your city residents saying I've got a problem and your knowing that that problem is really a county problem?

GARCES: *It would be the <u>fifth largest call volume </u>by department [not one-fifth of the total]. … It's about 4,000 calls every year. We get 150,000 calls every year.*

       There's a lot of fine tuning that we can do internally. …The largest marginal benefit is helping the other units. So we've spent a lot of time working with the school corporation, and the school corporation doesn't report to the mayor at all. They are publicly elected board members. But we help them use technology in a more meaningful way. That is a good thing in and of itself, but also good schools are probably what we need most to attract people to move to the city. They are also the biggest need if we are going to have good employees. The employers won't move here if they don't have a good base of employees.

       …

DREISBACH: Who is sort of the lead on the 3-1-1 portal? Is that you personally?

GARCES: *Yeah…. That was kind of my vision, but obviously, as with all things, once you put it to the team, they start shaping it. Michael Kennel on the technology side has been the prime person. …[But] it's an interesting thing, … a lot of the people that we have hired, especially in the business analyst side of things, are people that had a background in humanities. They are not who you think would be tech, but who were smart and caring about stuff. Then all we have done is give them the tools. So we have a religious studies person who does business analysis for public works. The*

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person who is the business analyst for code enforcement and for parks has a humanistic studies background. Anna, who is our business analyst of all the central departments is a designer by training. So Michael who is the guy who is responsible for the portal itself, and he is a theater person. He worked in theater and then he said, "I need more money to provide for my family." He had some kids. So then he got a degree in computer science and was working with this group called the South Bend Code School. …

A lot of the work that we have been doing there is how do you go from a call center to being full service, doing knowledge management, incident management, and service request fulfillment, and that stuff. …

STRAUSS: What are the learnings from the failures?

GARCES: *Some of it is on how you buy technology, but I think thinking about the interfaces with other systems is as important as what you buy, because again part of the core value of some of these systems is having the ability to automate the information that's coming into them. For example, it's like code enforcement. We consume the land management data from the county and we have had to go and clean the land management data from the county to make that work. The solid waste systems consume the data from the utility billing system. Who is actually getting charged for trash and what not. So we actually found about 200 customers that were getting their trash picked up that were not paying for trash. … In some cases, it's not even their fault. We just weren't charging them. […]*

Since I did my Master's in Tech Entrepreneurship, I have a sense of how venture companies think, how startups think. The problem for us is making improvements to government doesn't translate into more revenue. Sometimes it helps you save costs, but sometimes it actually makes you drive demand. I am sure that when we make it more convenient for us, for residents to request services, it's going to drive up the demand. We might be putting more challenge to ourselves.

So having a longer-term outlook and knowing that some of these things could happen and doing the compromise of what are strategic wins that we need to get them now versus what are things that are fine because they will keep getting better. I am a very impatient person. So that's tough one, too.

DREISBACH: Looking back, when you sort of started this position as Chief Innovation Officer, what were the biggest challenges that you anticipated at that time? What did you think would be the most difficult parts of the job?

GARCES: *I think change management. There has been a lot of change throughout the city. But when I started there were some pretty long tenured employees… There were some amazing people that were kind of kept at bay. They were like actual super heroes who were dealing with a lot of negative energy for a long time. But yeah, there was the mentality of "if it ain't broke, don't fix it." It's just the way that we do it. I knew that that was going to be tough.*

I think that now that the mayor has had a lot of reforms that have happened, one of the biggest challenges that I didn't anticipate is …everyone is trying to do good things. Everyone is trying to get in the mayor's good graces. Everyone is trying to get attention. They all should get attention. They are all in good graces.

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…[You also have to ask] yourself how to manage the friction between the different departments and the different people. It doesn't happen all the time, but I think that that's been interesting problem that I hadn't suspected was going to happen.

DREISBACH: How do you deal with that problem? What's your strategy for dealing with that?

GARCES: *Well, sometimes for me, take a deep breath, knowing that I am the problem. That's a hard one to acknowledge. [Focusing on the outcomes helps.] Keeping the outcomes as the number one thing. What is it that we are trying to do?*

The really good people are here not because of the pay, and not because it's particularly glamorous to work in South Bend, but because we want to affect change, and the best times are when we say check your ego or check your agenda, because we need to get this big thing done. We all care about it.

DREISBACH: Is there any example you would say of when you did face some institutional resistance, some reluctance to acknowledge that it should be done in a different way where you were able to get over that and you know get people to understand why we are doing the things we are doing?

GARCES: *Yeah, there is every day. One interesting example was when we were doing a lot of changes in code enforcement. We were giving them tablets, and I had made an application that enabled them to do all of the code enforcement [tasks]: assessing a violation, generating the letters, and all of this stuff. …But the first time that we gave the inspectors iPads, they freaked out. They thought that we were going to track them, that we were just trying to monitor them. They thought that it was just a ploy for us to fire them because we were just going to be judging how much [they did] and …stats on how long did a case lasted before they inspected it, how many open cases they had, all this stuff. …*

This was an interesting moment. It was apparent to me that I was persona non grata in the thirteenth floor. So I tried to stay away for a little bit, but the interesting thing is we chose to give them tablets partly because we were listening to things that they cared about. One of the things that they said is that it was very hard for them… if you gave a resident a ticket because there was garbage in their front lawn, they would go and say no, there is no garbage in my front lawn. It's the inspector's voice versus the other person. With the tablet, they were able to take pictures of all of the violations and the pictures were automatically stored with the [record of] the violation. So there are a number of times that residents would come and contest the violation. Then the person at the desk would just flip the screen and ask, "This is your property, right?" They would reply, "Okay." So that I think that made them see [the usefulness of the tablets].

Another thing that code enforcement did--this was one of the best things that has happened because code enforcement did it without any involvement from us--they redrew the inspection districts. In the past, two inspectors carried about half of their workload.

So what was interesting was the Director of Code Enforcement also used some police data thinking [and tried to assess what influenced the numbers of properties likely to have violations]… Then they balanced the caseload. They got some of the people that had the neighborhoods around Notre Dame [which were better off] to take also part of some of the neighborhoods that had more violations. So I thought that was super neat.

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DREISBACH: You said that was implemented independently but do you see it as something that was inspired by the work that you were doing?

GARCES: *I think so. I mean I think it's definitely built on top of the work that we were doing because they couldn't have done it on their own if they didn't have the data and they didn't have the GIS stuff and everything all of these things set up.*

So in fact, what's been interesting is also seeing kind of this change in faith, there are stages of implementation. So the technology the work that we have been doing, that has been really interesting to see. At first people resist. Then people are okay and they are trying it out. The recent problem that we find ourselves in a lot of cases is people become really good customers and they want everything. They want everything to be automated. They want the technology to you know error proof their work--so I can't click on the wrong thing. Again, this is an unexpected thing for me.

We don't have enough people [to tailor interfaces]. Expectations are also changing. Everyone interacts in their personal life with Google and Outlook and all of these things. They think if these systems are … intuitive, why can't you [do the same]? It's because we have 20,000 buttons and we have one person for the 20,000 buttons. So that's been an increasing challenge for people. As more things automate, we also have more and more applications. As there are more and more applications, the degree, the number of interfaces between the different systems and the permutations of that grows, but we don't grow our stuff exponentially the way that the complexity grows.

STRAUSS: The three stages of any project, this is never going to work. It's a lousy idea. Okay, you can make it work, but it's not worth it. I want it. What's wrong? Why isn't this moving faster?

GARCES: *Yeah.*

…One of the more interesting changes that we did was we centralized all of our budgeting. … Everything that we do, we charge out to the departments. … each department gets an itemized bill of what they spent. But try to explain to the police department why they are paying for 3-1-1. You are actually getting 3-1-1 calls! These are the calls that you are getting, and this is why you have to pay …Once they see that, they stop arguing. …Technology is expensive. All of this stuff is expensive. It's helpful. It's good, but it's part of what has to be done.

DREISBACH: Is that how you are funding works here - you are charging different departments for services?

GARCES: *We have been getting better and better at getting external funding. So we have also tried to kind of incorporate kind of a risk mentality, so all the internal works are funded through allocating out to different departments. …if you have an idea, but you don't know if it works, you need to go and get grants to pay for it. If you think that you have something that works, but you are not really sure and there is still a high implementation risk-- maybe the technology risk is a little bit, the market fit is still risky--you are going to give it to us at price, unless you move to South Bend and maybe we will give you a better deal. I have to justify to the departments why we are buying that.*

So that's what happened with Roadbotics, which is this technology that came out of Carnegie Mellon to do visual inspection of potholes. At first, I met the researcher. I thought this looks cool. So he gave me a camera. We were supposed to do a pilot. Then they gave us a really good deal, too. Test ten percent of the roads. The public works people liked this vendor [so we bought a lot].

DREISBACH: How do you choose, what your priorities were?

GARCES: *It's changed. It started by being very mayor centric. I have benefited from the fact that I used to sit close to the mayor, much like the deputy chief of staff's office. So initially, it was just what does the mayor think that we need to do, partly because it is trying to validate. The thought was this was early on. There was not a lot of buying into the program and all of these things. So it just had to be the vital few, like we're Seal Team Six. Just going to go in, figure it out, and then go to the next thing.*

The next stage has been getting more and more involvement from department heads. …The business analysts are half-embedded into the departments. So they suggest things. …At the first stage, 100 percent of the projects or 95 percent of the projects were mayor-based. Now, the next phase probably about 20 or 30 percent of the projects were mayor-based and 70 percent were department based. I think in the stage we are entering now about ten percent of the projects are the mayor, about 60 to 70 percent of the projects are the departments. Then 30 percent of the projects are external. So they are philanthropy or something else. What's weird, too, is some percentage of those projects are us working with an external entity because someone internal cares about it. …

DREISBACH: Who are you working with externally?

GARCES: *Bloomberg [Philanthropies] What Works Cities program. Then the Bloomberg Harvard Leadership Initiative. There it's interesting because again it's like this creative tension of us doing what they want us to do, but then also us asking them to shift their focus to do the things that we actually think that we need to do. They have been very responsive.*

On digital divide and digital access, we have been working with the Metronet, which is this nonprofit that was set up. There is a nonprofit and a for profit branch, but it was set up to lay out a network of dark fiber [unused fiber optic cable than can be leased] ...

...Because of the railway easements, South Bend is where the fiber that connects Chicago and the West Coast to the East Coast lies. So South Bend has the second largest carrier hotel in the state [A carrier hotel is a physical interconnection where fiber and internet providers come together.] A couple of years ago, in 2005 or a little bit earlier, a lot of the major institutions wanted to be able to tap into that. So they made an agreement with the city where the city would give them access to the conduit that it built for street lights and all this stuff. In exchange, the nonprofit would lay fiber but then charge businesses to come. In exchange, the city gets free fiber.

We have a ton of super high-speed connectivity. Most of the major institutions like Notre Dame were interested ...because around that time is when they started getting all the data from the particle accelerators in Europe and whatnot. So they needed super high-speed internet. Bosch which used to be here, was trying to connect to all of these things. At this stage, a lot of the large institutions are connected. But since it

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takes a fair amount of sophistication, you need to know how to manage a fiber backbone and then have your own network engineer and all this stuff.

We have been focusing on how we make some of these things accessible to residents. One of the projects that Brian is working on... is ... a partnership between the library and the Metronet, where the Metronet would cover the cost of bringing the fiber to our community centers. We would use the savings from not having to connect the fiber to the community centers to partly build out the space, but also to contract with the library. The library would give us devices that would give super high bandwidth free wi-fi in the community centers. ...

Now we are starting to go to third parties [too]. The idea is that all residents would live within a 15-minute walk of a place where they can access free wi-fi, but also have access to free devices to do what they need to do in a safe space. That's why we are starting to go to nonprofits and other kind of community center-like things. […] We are also deploying a free wi-fi canopy—we have one downtown. I mean we are starting to take it to different urban nodes within the neighborhoods. So it's more of an amenity, though so far, I don't know how many people go do homework on a bench.

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DREISBACH: You mentioned that you were going to use the cloud instead of having to build a bunch of new servers. I would love to hear a little bit more about that.

GARCES: *So the city's mainframe used to be in two rooms downstairs. It used to be covered with a tarp because the water from the AC leaked on it. That's not good.*

Again we started with the thought "let's get good at the things that we should get good at," things that have value. ...We probably don't need to have super expert in information security. We can hire that out every once in a while. Some of the intermediate technician work, other stuff, we could also hire it. ...I was super aggressive, first of all because we are deprived of space. You will see that we have a lot of people and not a lot of space, that there is a space consideration.

[On this same premise] we went to the cloud. So now we pay for what we use. But also unlike the other devices, like laptops and whatnot, we went for leasing versus buying. So basically, we know how much it costs month after month. Our capex (capital expenditure) is zero. It's all opex (operational expenditure), which also helps budget because we know. We budget for a certain percent increase, but there is never that we are not able to do what we are supposed to do because we didn't budget for it or because we have unreliable technology. We saw the performance of the systems increase. ...the nice thing about the cloud is also you are not committed to a particular strategy for a long time. You can just change the way that your networks are configured and don't have to worry about it. If you want to have Oracle servers because that's what your legacy infrastructure is in, you can have them. It just made us a lot more nimble, a lot more flexible and more agile. That fit what we were trying to do.

DREISBACH: What cloud service are you using?

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GARCES: *When we started we tried Amazon, Azure, and then we had MicroIntegrations, a local provider. So it's basically this massive virtualized environment where we can allocate resources. So when we started, probably a little bit reckless in my part. Just we thought "Let's try it all." I thought, in eight months I don't want any servers to be there. It's just like, let's try whatever fits.*

DREISBACH: Eight months from when?

GARCES: *From when I took over. So it was by the summertime, there will be no more servers —[…] we ended up going with the local provider partly because we knew that we could probably do a better job of leveraging the relationship there. We give them a ton of tax abatements and stuff, you know. That's worked really well. T*

                   That group also ...ended up becoming the main provider for the help desk. ...Before, five and a half of the six FTEs that were in central IT, and most of what they were doing was help desk. So in salaries, that's $340,000 with benefits. So I went to Microintegrations […] if we give you $90,000, would you do our help desk? And they did it. So that freed up everyone's time. It upset the departments a little bit, because [it may take longer to respond to a service request]. It might take a day. You are going to talk to a faceless person that is somewhere else.

DREISBACH: A few more questions. You talked about the big reorganization a few times. So is that specifically when you go from an office to a department? Why was that needed?

GARCES: *There were six different groups, not coordinated. So if a person in GIS wanted to do improvements to GIS, they would have to go and talk to the person in IT, but the person in IT says, "oh I don't know if we budgeted for the bigger server" or whatever. For me to be able to do analysis, I needed the GIS stuff to work and the computer to work.... So the thought was the department model just does a better job of meeting our needs.*

                   [Also] byy pooling more resources we have more opportunities to get creative and do funny, interesting strategies, like paying for digital literacy centers out of the savings from the phone bill. So it's something that the residents care about. But instead of having to go and beg the departments to give me the savings to do this stuff, now we can say "hey we saved this money; we are going to use to it for this."

DREISBACH: You mentioned what the residents care about. How much are you getting resident input? Is that something that is built into how you do things? Or are you sort of more just talking to different departments for what they need?

GARCES: *I think especially since we became a department, we became more responsive. Before it was kind of very internally geared. We have been leveraging a lot, especially with university classes because 30 students can talk to more people than three people can. That's been really helpful.*
                   I go to almost every city council meeting. I's not that representative. The people that show up there are not representative of everyone, but we do hear some interesting complaints.

                   I have been working on developing better relationships with the council members ... We copied what Kansas City does with their city survey. They do it quarterly. But we just did our first one. We are going to do it probably semiannually. That's been really helpful, too, to get a little bit of ground truth of knowing what are the things that people think that work and don't work. We have not been involved with a lot of

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*community groups. So Hack Machiana, which is our local Code for America brigade,
it's a little bit small. It's probably less influential than [similar groups] in a bigger city,
and a lot of the work that we have been doing is trying to prop them up and help
them grow.*

...

DREISBACH: Oh, that's interesting. I wanted to ask in terms of for the department, how you are
setting goals and tracking progress and monitoring your performance here?

GARCES: *...We probably have spent time working with other departments and tracking their
performance than tracking ours, internally, but here is how we do it. We use a
project management methodology. So every project has a project charter and then
we have a project plan for every project. […] So can we accomplish the project for
less than we set out to do. There is the timeline. So we try to be sticklers to our
timeline. ...*

*But it's been a little bit tough. I think in some cases we look at the performance gains
that other departments have had. So we have been helping facilities and the parks
departments and they saved $100,000 by centralizing their HVAC contracts. So we
say that we helped, if nothing else. ...*

DREISBACH: Is that something you want to change in the future, if you could have more capacity
to do so? Would you like to have a better sense of the overall performance and what
kind of metrics can be used?

GARCES: *...I have a general sense of what are the KPI's that I care about for the divisions. 3-
1-1, the call, cost per call, or cost per interaction, because part of what we are trying
to do with the whole 3-1-1 project with the portal is reconceptualizing what an
engagement with the resident costs.*

*If you come to the city and you have to talk to an employee, let's take into
consideration the rent, the space, that person's time, and all of this stuff. If you call
3-1-1, it's $3.60 per call. If you go online, it's ten cents per call. We have developed
a prototype for a bot where you can chat with this thing. Then it gives you answers
that 3-1-1 would give you. It's less than a cent per interaction.*

...

*Network availability. We know when the systems go down. We have also started
pushing more into monitoring not only the infrastructure, but the availability of the
service. ...Our network reliability now is upwards of 99.98%. But in the past, we
didn't even know. I know that it was way lower than that.*

*There is a funny story ... one of the things that we did based on the design of the
Metronet is that now we can do redundant loops, where the fiber comes in from two
different paths. So if it gets severed in one part, the router just starts sending traffic
through the other one. We got a notification that one of the paths in Animal Care and
Control had gone down. In the past that would have brought down that site and all of
the other things in that ring, but now there is a fix. So we went there, and they find
out that a mouse ate through the fiber. So we had to insulate the cabinet with wire
mesh to prevent the mouse from eating the fiber. [But thinking about performance*

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management we thought] ...Animal Care and Control is filled with cats and they are not very good cats. They need to do a better job. […]

...

DREISBACH: One thing that I read about was the Metrolab Network. My understanding is this city and Notre Dame together are involved in this federally supported network. But could you just tell me a little more about that and what it's done?

GARCES: *It built on top of some of the things that were going on even before Pete came into office. So around the time of the previous mayor Gary Gilot was Director of Public Works. ...So we had this long-term sewer control plan that basically said that we needed to invest about $700 million or a billion dollars in the present value of money for building bigger tanks and tunnels and stuff to do separation between the sewage system and the storm water system. Gary went to Notre Dame and found some professors that were doing work on control systems. They were doing some of the first work in embedded smart systems through a DARPA brand. So they were embedding sensors in a war-like scenario, trying to detect toxic plumes and all this stuff. One of the students was born in South Bend, but he grew up in Peru, and he was said, "Hey, I think that we could deploy the system in your sewer system." If nothing else, you have a better sense of how the overflows occur and how they are doing.*

Long story short, they started instrumenting a few systems. Gary worked with them all the way from this concept to actually creating a company. Now, they are growing super-fast. Xylem just merged with them, just acquired them. They got this big contract in Kansas City because they demonstrated how they could save $1 billion out of the $4 billion plan. In South Bend, they are probably going to help save about $400 million. They reduced 72 percent of the overflow volume, costing us $6 million whereas the equivalent would have cost hundreds of millions of dollars. So since we had that story, Pete had been invited to the White House to a smart infrastructure meeting where this guy, Rick Stafford, from Carnegie Mellon was. Pete told Megan Smith the former Chief Technology Officer of the U.S., about it, "You guys might not know, but we have this." People wondered they hadn't heard.

So around the time the people at OSAP were thinking about building, Rick thought it would be great if the U.S. had this network of city and university partnerships where you could actually reduce the risk of transferring some of these technologies ... So first, I got invited in May 2015 to the White House. So there were four presenters. There was Pittsburgh, Chicago, New York, and South Bend.

I was thinking this is prime time. I am making it big, mom. They liked it, so out of that workshop came the idea of actually doing the Metrolab. During the summer we started getting city universities to sign MOU's where they committed to having a single point of contact. This is all modeled after what Carnegie Mellon had done, what Rick Stafford and Deborah Lamb had done. So an MOU that established that there is a single point of contact in each place. They agreed to collaborate on at least three projects every year. So I think that by the time that we launched, we had 35 people. Then Mayor Pete and Mayor Padudo were the two people that launched the network. They asked me to be on the steering committee of the Metrolab...The MacArthur Foundation gave $1 million to seed it. They gave it to Carnegie Mellon to host, just to incubate it. Now we have spun off our own 501(c)3.

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In some ways the fact that we are getting national recognition was kind of shameless because none of the water stuff had happened under me, but I was very happy to talk about it. ... it put pressure on Notre Dame and the city. We were already doing a lot of stuff, but then we signed the MOU and then we started meeting the Vice President of Research, a couple of the deans, the Vice President of Systems, Vice President of Community, the public affairs, and then the mayor. Now we meet every quarter to talk about how to drive more energy towards that. As a consequence of that, Notre Dame, ...is about to announce the creation of a Center for Civic Innovation, initially the College of Engineering.

It also has made it easier for us to collaborate with other universities, lots of stuff with Carnegie Mellon and with the University of Chicago. We have great relationships with people at Georgia Tech and Case Western. The thought there, what's challenging with the universities is that they have such a different approach. The things that they care about are so different from most of our other constituents. It's fundamental research, super high-risk stuff, more conceptual stuff. So what we have tried to do, and we are trying to get better at it than almost every place partly because there are not any big fast-growing industries in South Bend, how can we become a prime—we used that to become a better collaborator for researchers, but at a cost. So trying to see how then we can also recover some of the costs of investing.

So Brian spends a lot of time coordinating and helping researchers write grants. Then what we are trying to do now is do we recover some of the grant money to pay for that. ...

DREISBACH: From what you have learned over these years in South Bend, what would you say were two of two or three things that you want other people to keep in mind?

GARCES: *Well, I think the first piece [of advice] is that there is a toolkit of innovation in government, especially in local government, that is no longer experimental. I think that there is an expectation that all cities are going to be doing some of these things. Then part of what every city will have to do is determine what is the best fit--which tools and how do you adapt them to a context.*

Bloomberg through the What Works program and the mayor's innovation project and ICMA--everyone is trying to make investments into this type of stuff. I think that whereas five years ago, it was still a little bit divergent in terms of what the tools would be and what does this look like. Now there is a sense that these are […] a must in terms of performance management. Adapting them and incorporating them to the context is something that you have to do, but the nice thing is that since it's become more prevalent, there is also network of practitioners. So we host a lot of people and we talk to a lot of people on how to get this stuff stood up, so you don't have to go through some of the bitter lessons. I think it's also interesting because this there is a lot more portability, even across whether you are small city or a large city. You get to learn both ways. I guess some of it is a little bit untested and the types of work that you are doing is not set by skill or by context as much.

Again, another thing that I think that is interesting is navigating the tension between centralization and a more distributed approach within a local government. This is a design element something that you have to figure out. The benefit of centralization is you get to leverage, you get the economies of scale and better strategic alignment.

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But you also run the risk of alienating other people within the city and then just actually that becoming a problem for good change management...

There is also both a cultural thing, but also, I think, a strategic question how it is you can build risk into the operations of government. Taking risk is tough. ...our residents' expectations about how they consume government, what government ought to do, and what government ought to tell them about how they do their stuff is changing really quickly. So there is an inherent risk in not doing anything that I think that maybe some people are not aware of. But I also think that there are rational ways of approaching setting up [innovation] that won't break the bank. We have stayed away from smart cities stuff, because ...it could attract the wrong vendors because you are just buying stuff for the flare of saying I am a smart X.

In reality none of the things that we are trying to do fundamentally change the fundamentals of what a city does, as a network of resources for transportation, for goods, for services, for information, for waste, and for all of these things.... One person asked me "wouldn't you like to be the first city on the block chain?" I said no. Not intrinsically. I want to be if there is something about being on the block chain that makes me do my job better for our residents, hell yeah. But no one knows who the first city was to have a website. That was pretty smart at the time. I found out which was the first city to have a police patrol car—it's Akron. But the technology comes as paradigm shifts, and then when things get standardized, it doesn't seem so smart anymore. You look bad if you don't have them.

...

Smart is about good design. There is room for technology, but it's not only about the technology. It's not only about sensors. It's not only about stuff because ultimately all of these things are about people. So if something has been well thought out and it's physical and static and kind of boring, it's still good design because it solves the problem with very little money and it interfaces people in a way that is positive. That's pretty good....

I like that the mayor uses the term beta city. It comes at the risk of people thinking they will never get to full production. We are always just testing. ...How do you integrate the mindset and this pool of values that existed here and then energize it to something that is positive?

The pragmatism that at times might have made you think that that you were unsophisticated is actually a virtue. ...in some ways [the mayor] has been repurposing some of the city's cultural assets and the culture that was here to something that is positive. I think that's pretty cool.

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