School of International and Public Affairs
Case Consortium @ Columbia
Columbia University

SIPA-14-0004.5

ANNEX B: Interviewee Bios and Transcripts

ANNEX B-1: Interviewee Bios, listed in order of appearance in case study

ANNEX B-2: Interview Transcripts

ANNEX B-1: Interviewee Bios, listed in order of appearance in case study

Dennis Smith, *Associate Professor of Public Policy at the Robert F. Wagner School of Public Service at New York University* – Smith previously led the Wagner School's International Initiative, through which he created the Executive MPA in International Public Service program. He has worked with public management faculty around the world, including at Escuela Superior de Administración y Dirreción de Empresas (Spain), École Nationale des Travaux Publics de l'État (France), and Seoul University's Graduate School of Public Administration (South Korea).

William J. Bratton, *New York Police Department Commissioner* – Bratton has previously served as Commissioner of the Boston Police Department and Chief of the Los Angeles Police Department. This is his second term as New York City Police Department Commissioner, the first being under Mayor Michael R. Bloomberg from 1994 1996. In addition to these positions, he was awarded Commander of the Most Excellent Order of the British Empire in 2011.

Claudia Gerola, *Executive Business Strategist at International Business Machines Corp.* – At IBM, Gerola serves as a consultant for business strategy and development for C level executives. Prior to holding this position, she was Associate Partner and Executive Consultant for IBM Global Services. She also owns the art advisory services company ArTech Consulting, which appraises and promotes private art collections.

Richard Tobin, *Fire Department of New York Assistant Chief of Fire Prevention* – Tobin has served as FDNY Assistant Chief of Fire Prevention since 2008. He is also FDNY Citywide Command Chief. In addition to his work as Assistant Chief of Fire Prevention, Tobin has spoken at various press conferences and conventions regarding fire prevention and safety.

Michael Flowers, *Director of Analytics at New York City's Office of Policy and Strategic Planning* – In addition to his groundbreaking work as Director of Analytics for the City of New York, Flowers has worked as a high profile lawyer in Manhattan and Washington and was employed by the US Justice Department to work on Saddam Hussein's trial in Iraq. In 2012, he was also honored by the White House as one of thirteen Local Innovation Champions of Change for his work using data mining and analysis to improve city management, particularly in reducing high risk illegal housing conversions, prescription drug abuse, and cases of mortgage fraud.

Stephen Goldsmith, *former Deputy Mayor of New York City for Operations* – Prior to serving as Deputy Mayor of Operations under Mayor Michael R. Bloomberg, Goldsmith was Mayor of Indianapolis. As Mayor, he vastly improved public spaces in the city and organized the reconstruction of neglected neighborhoods. In the 2000 presidential campaign, he served as chief domestic policy advisor to President George W. Bush, and then as Special Advisor to President Bush on faith based and non for profit organizations. Currently, he is the Daniel Paul Professor of Government at the John F. Kennedy School of Government at Harvard University.

ANNEX B-2: Interview Transcripts

Interview with Dennis Smith on February 17, 2014 at Columbia University

Interviewer: Adam Stepan

STEPAN: Professor Smith, could start us out by setting the scene in New York City in the late 80s. What were the contributing factors in the development of CompStat.

SMITH: Well, all over America, but certainly in New York, crime was going up in the 80s. It actually peaked in New York City in 1990 with 2,200 and some homicides. And at that time, it may have been between 500 and 600,000, 500 or 600,000 serious crimes in New York City. And places like New York Times were characterizing New York as the new Calcutta in stories as like a little byline for many of the stories about what was happening in New York City. Time Magazine had the rotting big apple on the cover. And the pictures on that cover were scenes of crime, basically. Somebody with a knife in an apartment, and things like that. And so there was this sense that New York was declining and that crime was a critical part of that.

When David Dinkins was elected, there was a headline, governor to Dave, do something. There was just a general sense that New York City was in great trouble, and that crime was central to that. They passed a law called Safe Streets, Safe Cities, that created a dedicated supply of resources to help rebuild NYPD. It had some other funds in it for things like Midnight Basketball and so forth that were very near to David Dinkins' heart, Mayor Dinkins' heart.

But the public sort of rationale for it was really to help rebuild public safety through the police. We had lost, in the fiscal crisis in New York City, more officers through attrition than most other departments had officers to begin with. The department was reduced from '75 to '80 by 25%. And the first study I ever did, I actually did it with some students from Columbia and from Wagner on how NYPD handled retrenchment, cutback management in the police department from '75 to '80. And it's a really interesting story.

But we came out of the fiscal crisis with a smaller police department than we'd had for some time in the 70s. And we also had come out of it with kind of a focus on serious crime only, even though during this period and coming out of the fiscal crisis, there was beginning to be, emerging this idea of broken windows. It came, you know, it was published a little later than that. But there was being discussed the idea, the police really need to focus on sort of minor crimes, too. They can't ignore that, because they kind of like grow, if you don't weed a field, it grows into trees, you know?

So these kind of things were happening in the background, and they used Safe Streets, Safe City money to start hiring new people to go to the academy and becoming police officers. They also introduced community policing in New York under David Dinkins, with Lee Brown first and then Ray Kelly picking up that theme, claiming it was the dominant organizational philosophy of the police department. An important shift from the 911 radio dispatch rapid response policing of the 70s and 80s, community policing said, no, we've got to get back in touch with the community.

And interesting, many people are not aware of it, and certainly in the political dialogue between Mayor Giuliani, candidate Giuliani and Mayor Dinkins, Giuliani didn't call attention to it because people were still concerned and worried about crime. But crime started coming down under community policing. The drop was not dramatic, but since it had been going up so steadily, any statistician would say it was an important change. But David Dinkins didn't, I think, maybe even believe it was the police who had brought that about.

I think that because he deferred by one cycle, using some of the Safe Streets, Safe Cities' money to bring in a new class to help with some other budgetary issues. So as a result of that, he lost the election, in a lot of factors, but he lost the election. A crime fighting mayor came in, brought in William Bratton, who had sort of this reputation for being an effective crime fighter from his days at the then separate transit police in Boston.

And so that they had sort of a couple things going for them. Crime had already started going down a little bit, and they already had sort of this pipeline of more officers coming in through Safe Streets, Safe money. And it gave Commission Bratton the opportunity to innovate. And I say that because the tremendous pressure on police departments all over America prior to this point was to maintain things like their stats on rapid response to 911 calls.

And the average response time was something that the press paid attention to, City Council paid attention to. And if that was what was driving your performance, it took a lot of your resources to maintain the average response time. Bratton had the luxury of some slack resources with Safe Streets cops coming in to say, I'm going to use these in a different way, and I'm going to use them to deliver on my promise. And this was pretty unusual.

In 1994, Mayor Giuliani and Bill Bratton, Commissioner Bratton, appeared before the press and they said, we're going to reduce crime in the coming year by 10%. No police department in America, no police commissioner in New York had set a target for crime reduction like that. And you know, they didn't continue with targets like that. But they set this target, and it got a lot of attention.

A lot of people in the research world thought that they were smoking something. They'd use language, you know, it's bravado. Are they going to fudge the statistics? But nobody, according to James Q. Wilson, according to other experts, the police departments in America did not have the technology for reducing crime, preventing crime. They had a system for responding to crime, but not for preventing it. So this claim kind of seemed exceptionally bold.

And you know, fortunately for Bratton's career and Giuliani's political reputation, they delivered. And at the end of the first year, it was more than 10%. And the next year it was even more than the '94 accomplishments. And so something pretty dramatic had happened here in New York in terms of a turnaround in the way we approach public safety in the United States, and that was the transition that I've had a chance to study and write about, including writing about it with Bill Bratton in a chapter in a book on performance management in America.

And I think it's very fascinating. And it's been something that got the attention not only in the police world, and we can talk about how it has spread to other police departments, but it got the attention of

other public managers who said, there's something that they know that we should know, and maybe we should use that. And it's been very important.

STEPAN: Initially with CompStat, people didn't have an efficient way to collect and share data, but slowly, they started using computers to help them. And then eventually it became very much a digitized way of looking at important facts. Can you walk us through the computerization of the CompStat?

SMITH: You know, the police department was sort of an epicenter of big data from at least the creation of the 911 call centers in the early 70s. Because almost immediately, there were ten million calls a year to the police department, and five million radio runs dispatched. You know, less than ten million, because some of those calls were duplicate calls. If there's a gang, you know, a loud bang, they get more than one call. If there's a car crash, they get more than one call. So they dispatched five million police cars a year.

So they needed computers in the 70s, and they got the biggest, meanest mainframe from IBM of any city agency, and they had to create a staff of people to manage that. And I call them the mandarins of the mainframe, because they got these, they wanted to give the good jobs to police, you know, so they, it was a good assignment. It's like, not walking down alleys. So you could schedule your time. And so it was a preferred job. But interestingly, not that many cops had the skills to work with computers.

So if you got that job, you held onto it. And so they kind of grew up a cadre of people who control the management information systems part of NYPD, and they had a mountain of data. And it all flowed into this mountain, and they massaged it and analyzed it. And three months later, they would produce these elaborate reports, which I still have copies of, detailed reports of crime statistics precinct by precinct. I'm talking about the 1970s, now. And into the 1980s, these reports would come out monthly.

But the monthly report that came out now was, you know, the Marsh Report that was actually, had December's statistics in it. So in retrospect, I characterize it as a management information history, rather than decision system. Because in, you know, the world of policing is so volatile, three months later is another season. And policing is seasonal, and policing is immediate. But that system of centralized, I mean, no [Soviet?] system is more centralized in terms of data management, I don't think, than NYPD's, you know, management of crime statistics.

But there also was a different philosophy. And these two things had to both change in order for what we're talking about today, CompStat, to come about. As long as you were just kind of keeping track of what you had done and had to report your average response time and your arrest statistics and so forth, you didn't need that information, if you weren't using it to make decisions in the here and now that was fine. But when, you know, you decide you're going to actually try to get on top of crime, you're going to try to fight crime, you're trying to fight it block by block, you need to have information that is more timely, more disaggregated, and given attention of a different kind than it had in the past.

All of those things were element of what, the reform that Bill Bratton brought, and Jack Maple, his sidekick and crime strategist advisor who he had encountered when he was at the separate transit police and took back with him when he went back to Boston, never let go of him, brought him back with him to New York. And he was a character, everybody who ever met Jack Maple was struck by him. He was Damon Runyon esque in his qualities, in terms of his look and his style, and he was amazing and brilliant.

And what they decided that they need was to make police managers responsible for crime reduction. Now, that sounds pretty like, weren't they always? But in fact, they weren't. Precinct commanders, traditionally, for a long time, had, under 911, it was argued, didn't really even control sort of their officers very much, because they were getting their directions from centralized operators who would say, you know, cars 94 go to this particular address and report back.

So they kind of got the statistics three months later about what their folks had been doing, but they were not on top of the crime statistics of their responsible area, their precinct. And they weren't expected to. They weren't being asked questions about it. They were maybe being asked questions if there was a scandal that arose in their district, so they wanted to keep their nose clean. They might get some attention if their troops didn't get out on time or if they didn't, you know, were not responding on time.

But they weren't being under significant pressure to reduce crime. That changed when Bill Bratton said, we're going to reduce crime by 10%, because he said, we're going to have to fight this block by block, and that meant precinct commanders and their lieutenants and so forth had to kind of get on top of it. And this was kind of community policing at the precinct level. Community policing before that, under Ben Ward as police commissioner who created it as a program under Lee Brown and Lee Kelly, community policing was something that focused on beat cops.

And serving, getting to know a community and serving that community and being on top of the patterns and statistics in their beat. Bratton's view was, and I think some of the other people who were working at NYPD who had gone through community policing for a while, came to the conclusion that crime patterns in New York were not city wide, certainly, but they also were not localized enough to be the focus of just beat attention and beat chronology, keeping track of it. So precincts were the chosen locus of focus for crime fighting. So they had to get personal computers into each of the precincts, which in 1994 they did not have.

By that time, my guess is up here at Columbia and certainly at NYU, I was maybe on my third sort of edition of computers provided by the university to academics working there. They did not have personal computers in the precincts because there was no use for them. They basically got their data from central, and they didn't, central didn't want them to have data. That got changed. Basically they started in every precinct to have a computer and to have personnel who could enter the crime data there, and then share it with the centralized management and affairs.

So they were both working on the same data, but the precincts had it first, and they were expected to begin analyzing it and looking at it. And pretty soon, they got help from the Vera Institute of Justice and others in terms of mapping it and so on. That came a little bit later. But basically the idea that they needed to look at their numbers, see what was happening this week, figure out if there were patterns to it, and then come up with some ideas about what they would do if there was a pattern of crime in their area.

And commanders who could handle those kinds of challenges, of analyzing data, looking for patterns, becoming responsible for reducing crime, became the stars of CompStat. And they showed up as stars at something that was new, which was these meetings where officials from the precincts on a schedule, not that, I mean, the meetings were scheduled but in the first days you would find out a couple days ahead of time, you're up for, and so you had to stay on top of your game so that if you got the you're up call you were ready.

And so you and your closest team of lieutenants and so on, and people from the other bureaus that were working with the precinct commanders, would be up there on stage, in effect, in a big office in One Police Plaza, and they would have the data from your precinct. And they would be discussing it with you, and say, what's going on here? We're concerned that this particular number is getting worse. This particular problem hasn't been solved. Are you aware of it? What do you make of it? What are you going to do about it? That conversation about crime reduction was one of the critical breakthroughs and one of the sort of distinguishing features of this whole approach of moving from measuring performance to managing performance with measures. And so that's CompStat.

STEPAN: So the desire to give this power and this accountability to local policing commanders also changed the demands of the equipment they needed. And what were the setbacks there? What was the relationship between the technology and the management needs?

SMITH: Well, I think that the transition was pretty fast. My recollection is, I don't think this is apocryphal, is that the commissioner was able to use the resources of the police foundation to go out and buy computers for then 75 precincts. We now have 76, but then there were 75. And have them delivered, you know, probably in the boxes by police car, to each of the precincts. And to go through their personal system and find people who were trained, had some kind of thing in their resumes that said they could do data entry or data analysis, to make sure every precinct commander had some people on his or her staff that could do the data entry and analysis with them.

And I think it was such a competitive environment under Bratton to kind of get going on this that it happened pretty fast. I mean, I'm sure in the first meetings they didn't have, I know they didn't have the maps and things like that, but even that came fairly quickly because they had the data, and the data lent itself to comparison. People say CompStat is Computer Stats, or Comparative Stats, and so on. But the key thing is, if you have 75 units of production, and each of them are dealing with similar kinds of data and similar kinds of things, it just builds in something that, you know, some of the, you know, management gurus have been calling on the public sector to try to take advantage of, which is ideas of sort of competition.

And so when there's this pressure to achieve this target of crime reduction, and you have these 75 aspiring commanders who are on stage periodically, they all want to shine. And so I think there was a pretty strong wind in their sails to kind of get up to speed. And I think they provided some technical assistance along the way to get there. But basically I think it was the fact that they were, there was a lot of motivation to get up to speed on this. And they did.

And I think, you know, I think the accomplishment of the crime reduction of the first year is pretty remarkable because they really only had part of that first year with the new system up and running, because it certainly wasn't up and running in January when he announced his target, or February. But maybe by April, May. So the fact that they got maybe 12% the first year, I think it was 17% the second year, the 17% the second year is probably a reflection of, it was operating the whole year. Using this outcome oriented.

And I think that that's key, the fact that crime reduction as an outcome, citizens, communities feel that. Absent, you know, rapid response time, a study as early as 1975 said, that really didn't matter that much to citizens. What mattered to citizens was, in terms of response time, was whether or not it matched their expectations. It was a study done in Kansas City that showed that.

So if you're measuring things, and they were, that don't matter that much to citizens, and don't matter, you know, just not intrinsically that obviously important to officers, they don't take them very seriously to do much with them.

Once there was this thing that people were talking about, that were part of, you know, the annual surveys of, what's the biggest problem in the city? And it came up to be people's fear of crime. All those things kind of came together to create a crucible for management reform.

STEPAN: Can you describe these early CompStat sessions?

SMITH: The first one I ever sat in on, I was sitting, doing a little, you know, back of the envelope calculation of how expensive it was. Because you had maybe 120 people in the room, a lot of commanders and their deputies, sitting around on either side with this leadership team, maybe several in one CompStat meeting form different precincts, up there getting grilled would probably be a good term for it, as they experienced it.

I remember sort of being surprised to see these burley cops with their big weapons and so forth and so on, trying to get coffee, and their hands were shaking so bad the coffee was spilling and they'd say, aw shit, and throw it away. Because it was intense. And for some of them, it was a whole new world because they hadn't been in the world of data, they hadn't been in the world of having to demonstrate their performance around crime reduction. So there were a lot of changes going on at one time.

But basically there would be a panel in the front of, typically not the commissioner, but leaders of the department, heads of major bureaus, sitting there in front, you know, like a doctoral defense, asking their precinct commanders who had their lieutenants there with them to help them answer questions or do part of the presentation, and they'd take them through the numbers.

And you know, there's a story early on when Jack Maple was running these meetings as the deputy commissioner of crime strategy, and there was a precinct commander who was fudging, he was sort of making up stuff. And they knew that he had a reputation for it, so quite famously, on the screens up there they had a picture of this guy. And when he'd answer a question, his nose got longer. It's a Pinocchio episode. And so that sent a message. Don't come in here and try to pull anything over us, because we've got the data, too. We've gotten ready for this session. We knew it was coming for you before you did. And so you know, let's play straight.

And I think it was, you know, reported in some places as just being a brutal kind of crushing way of dealing with a professional, but this was deadly serious stuff. New York City was, you know, viewed as potentially declining, citizens were struggling with their sense of victimization, and there was a lot of it, even by, with the somewhat, you know, the beginning of the crime decline, there was still a lot of crime in the city and a lot of violent crime in the city, and it was a major preoccupation. So this was really serious. And so they got their attention with a few things like that.

But mostly when I, within an hour I decided this was the most effective management training I had ever experienced. This audience on either side were taking notes, they were absolutely riveted by the discussion between the leadership team and the commanders about what was, how did they figure out what kind of patterns they had, what they had figured out about their patterns, what their plans were for

doing about it. And you could just, the room was noisy with people scribbling their notes about it, because they wanted to go back to their precincts or to their bureaus and give a report and say, you know, we better catch up with this, because you know, the idea that they're doing that's working, we're not doing that. And if we get called next week, you know, they're going to wonder why we haven't come up with this idea.

And so the key to effective outcome oriented performance management, if you kind of have to sort of summarize why it's important, when it works it accelerates the process of learning about what is successful and what's not in terms of achieving the mission of the organization. That's its key contribution. And so I felt like I was watching this acceleration of learning about how to try to reduce crime in the city from that first CompStat meeting I sat in on.

I mean, I've seen dramatic presentations of CompStat and things like the program The Wire about Baltimore and so forth. I don't, you know, I think I know the New York City Police Department reasonably well. I didn't see the kind of gamesmanship, political gamesmanship going on in the CompStat meetings in New York that I sat in on, sort of trying to bring somebody down or trying to show somebody up, or trying to make one bureau look better than another. That didn't really fly very well in there, because the nice thing about outcome measures is it tends to sort of focus people in a kind of converging sort of way.

One of the things I think it contributes to public management is it sort of breaks down the silos. A few, you know, years later, I had a chance to look at a reform called [SatCom?] which Bill Bratton and Jack Maple had devised for East New York. And the idea was, you put all these different bureaus that are associated with a precinct commander, but not under his control, under his control. And a Brooklyn North commander got that integrated control. And the expectation was that that would really dramatically improve performance.

But in fact, after the first year, it didn't. New York, East New York didn't, that precinct, that bureau did not outperform the other bureaus. And I came to the conclusion that by the time they introduced that administrative structural reform of giving a bureau commander direct control of the bureaus working with his officers, that had already been functionally achieved by CompStat. Because if a precinct commander was up there on stage with the detective folks and the organized crime folks and the narcotics folks, and they weren't working together, it didn't smell right. And so they figured it out in advance that they had to work together and concert and share. And that was a major change that was a result of the outcome orientation of CompStat.

STEPAN: What was the model for CompStat? Obviously it's something that's not 100% original, it's something that you see in the corporate world and in the military. What were some of the models that Bratton was building on?

SMITH: Well, you know I would like to think that he had read the report that I did on the mayor's management report that I did in 1990 and presented at a conference in 1993. I don't think he did. But I had studied the mayor's management report at the end of the Koch administration, and the original design for that was that it was going to, the mayor's management planning and reporting system.

By the time I studied it 12 years after it had been launched, 1977 to 1989, it was just a reporting system. And twice a year, statistics about the city's performance in each of its agencies would be presented to the public in a mayor's management report, something very similar to the police reports that were produced by the management information systems division of NYPD, you know, long after the fact, basically, you know, they'd come out a few months later and say what they'd done the previous year.

But they weren't using those measures to manage, and nobody was really expecting them to, even though the original design for the system was that there was a whole pyramid of processes leading up to commissioners reporting to deputy mayors, and sort of keeping ahead of these reports so that the performance reports that they did give would be better. But the leadership was not there in the city, so the commissioners weren't being called in to report. They didn't have the CompStat meeting concept.

And so the whole notion of a planning and management system, in addition to reporting system, kind of atrophied over those 12 years. So since I had read the original design and could see how it would be more powerful, I made a series of recommendations. What they, the reason I think Bill Bratton and I hit it off is that once he did read it, he saw that we were very much on the same page and that I had recommended disaggregation, and that they needed to focus on smaller areas.

You know, you might say, I say sometimes I live in New York City, but in fact I live in Greenwich Village. And that's a far cry from the Rockaways and from East New York, and you know. Almost everybody lives in a neighborhood of New York, and that's what they need to know about. But so do managers. If you're managing any service in the city, you've got to know the territory. And the territories are very different from one part of this very big city to another, and the mayor's management report was almost all citywide statistics, all annual statistics. It wasn't timely enough, it wasn't geographic specific enough, it wasn't outcome oriented enough.

We went to mayor's management report in the late '80s, counted every, classified every statistic, and there were a couple handful of outcome statistics. Crime was in there, but it wasn't reported by the police as an outcome statistic. It was reported as a demand statistic. If crime went up, they used it to say, we need more cops, we need more resources, we need more cars. They didn't sort of set goals for it, targets for it, crime reduction. Nobody was demanding that they do that. And so there were a lot of things about, these ideas were in the air, is what I'm saying. Bratton brought them together.

I think that, my guess is, and I haven't, I keep meaning to talk to Bill Bratton about this, this guy named David Gunn who came in as a reform manager at the MTA whose police force Bill Bratton ran for several years, and was very successful in reducing crime there. Jack Maple and, you know, was in the transit role during the time that David Gunn brought a very systematic approach to managing the performance of the trains in New York City with a lot of success.

He was, you know, there was a combination of people at the MTA at that time that brought more resources to the MTA. Kind of like Safe Streets brought more resources to NYPD. But David Gunn was the operational manager, and he used performance measurement to manage the transit system. My guess is that Jack Maple saw it work, thought it was relevant to police. He tells a story about learning it from the restaurant, Elaine's.

But you know, I'm not convinced that it didn't sort of stick because he saw it vividly happening in front of him the way Elaine managed getting, making sure that every customer got what they needed and everybody was sort of, who needed to be working together was working together to get a smooth deliver of a complicated, coordinated food service. But I think that the ideas were kind of out there, Bratton sort of brought them together in CompStat in a creative way, and it got his brand. And he's famous for CompStat.

STEPAN: People were writing management theory for years, looking at factories, looking at the private sector, looking at how making things run, and making perhaps local managers responsible for their area. Was that a new thing in the public sector?

SMITH: It certainly was in policing. There may have been some other areas of public management where that had already come, been brought home. But it certainly was a novel idea. I think that, as I said earlier, community policing kind of put pressure on the individual beat cop to try to make things better in his or her beat. But there's so many beats, and officers, you know, on for a limited amount of time, not 24/7. But part, you know, and they have vacation days and so on. So they don't have the kind of wrap around connection to what's happening in their territory that, in principle, precinct does.

You know, by moving the focus to the precinct as sort of the community that the police department is going to lodge responsible and focus analysis initially, the changes later I think we could probably talk about with Operation Impact. But to begin with, it was a huge innovation to say to precinct commanders, you know, you have under your command more officers in the typical New York City precinct than the vast majority of police chiefs and commissioners around the country.

And so, you know, if you think about the responsibilities of a police chief, and you sort of say, you're the equivalent for your area, it sort of changes the dynamic significantly. And I think that's what he did. And you know, that's what they're trying to do during the Bloomberg administration in the schools of saying, principals are going to be the CEOs of their schools, and so forth. That's a pretty, sort of, it's a spreading idea, it's taken a while, it's not everywhere, and it came to the police very dramatically with CompStat.

STEPAN: Can you give us a sense of if you have them in your head the numbers of the New York Police Department? How many people, how many crimes? Just some general stats. It's a bit surprising, for example, to see that the New York Police Department is ten times bigger than the Boston Police Department.

SMITH: Right. Well, you know, New York City is more than ten times bigger than Boston, so maybe that isn't such a surprise. But even so, I think the per capita staffing of NYPD is probably higher than most cities. And, but New York is sort of unusual, and New York is the home of the UN, we have disproportionately more visits from the President of the United States and other dignitaries. There are a lot of factors in New York. We have, we're part of a huge region that converges on New York.

So we have millions of people who come into the city to work. We have 50 million visitors a year. So how do you figure those into your, you know, and Boston has visitors, too, but they're not 50 million. So the population that is being served is complicated and bigger than the eight million people who are residents here. They were about more than 30,000 before the fiscal crisis in 1975. And as I said, from 1975 to 1980,

they lost a fourth of the force. So they went down to about 23,000. Still a huge number, bigger than a lot of standing armies in the world.

But that's a significant number. We have, over the course of the history of 911, there seems to be this remarkably, relatively stable ten million calls a year, five million radio runs, which still is roughly what's happening. Because radio runs are about a lot of things besides crime. And you know, people call for noise, they call for car alarms, they call for, you know, just an incredible range of things will occur to people to call the police.

And the police, basically their response is to go, to go if called. So those are big numbers. We had, back in, you know, the early 90s, 500 or 600,000 serious crimes, the kinds that are reported at the FBI, rape, robbery, you know, homicide, auto theft, burglary, hundreds of thousands, you know, big numbers. Now we're down to closer to 100,000 with the crime reduction that we've enjoyed over the past 20 years. And it's still not a small number. Now, that's just serious crime. Then there's all the other misdemeanor crimes, some of which if you're a victim of, those crimes, they matter a lot to you, too. You know? So they have to be included in the set of numbers that the police are dealing with.

STEPAN: I'd like to jump forward a few years in our conversation. CompStat has come out, had this huge impact on the recent crime in New York City. It's also changed the way that people look at data and the relationship between data and management. And it basically set off other agencies trying to adopt CompStat. Could you talk about this?

SMITH: Well, one of the first places I looked at that was trying to do CompStat like management was the Department of Corrections under Michael Jacobson, who had been the budget officer for criminal justice for the city before he became commissioner of corrections and probation. And Michael's deputy commissioner was Bernie Kerik, who went on to be police commissioner under Giuliani. And they had created something called TEAMS, it's an acronym. But TEAMS was very CompStat like. They would regularly bring in the leaders, in the case of corrections, of the different facilities.

And as I recall, there were 19 of them, not 75, but 19 different places where people were incarcerated at Riker's Island, and each of them had a commander. And so almost every aspect of CompStat, in terms of disaggregation of data, decentralization of responsibility for performance, the identification of some key outcomes, in the case of corrections it was reducing violence against prisoners.

You know, the two things that commissioners tell me that the mayor asked them about is, has anybody escaped, you know, and has anybody been killed on your watch? And so the fact that they were experiencing a thousand slashings a year, which can kill, was a big concern when they introduced this new CompStat like way of managing corrections. And using it, they succeeded in reducing slashings from a thousand a year to something like 40 or 50 a year, an extraordinary success story.

And they reduced over time, using similar kind of real time management, because if you wait until the end of the month to find out how much overtime you're going to have to spend or did spend, it's been spent. So they figured they had to see if there was a spike in overtime, they needed to see it here and now, and see if they could fix it before it accumulated. And using that kind of real time, you know, looking at sort of is there an overtime problem in one facility or another, is there a slashing problem in one facility or another? They, again, looking for patterns, trying to figure out.

They decided that people slashing prisoners probably had some kind of supply of things they could turn into weapons. And they thought probably it was sort of a version of female order, because most of the prisoners were male and they had mostly female visitors. So they always sort of search people coming in, and if they find some contraband on them that could be turned into a weapon, they confiscate it and they turn them away. And they would fill out a report, and those reports were stacking up like crime reports, but not being analyzed.

And they came to the conclusion that these reports of contraband were like an early warning system if they analyzed it. And they found that it was not random. Where the visitors were heading in terms of the 19 facilities, that there would be a spike in people being stopped with contraband that was aimed at, say, building four. And so they would say, OK, something's going on in building four. That's where we're going to do, you know, pay more attention. We're going to do searches, we're going to take the weapons out of there, and so forth.

And by sort of using their data in a timely way, they were not cooperating in a coordinated way with NYPD's crime, gang teams. And they were getting people who were engaged in gang violence on the street, and that's why they were being arrested and brought into the jails. But they, you know, if they kind of came with a blue shirt and a red tie, they didn't realize that that's a particular gang sort of notification, and they would put them in with people who were fighting that gang out on the street, and the clashes would continue within the jails.

So they started working with gang intelligence, and being able to identify the profiles and insignia of gang members, and they started assigning people to spaces within the jails to kind of keep them apart. All of those things using pattern analysis, using data, being, you know, smart about the information that they had, no new information really, but information that was available that they weren't using strategically, enabled them to really turn around safety and expenditures for overtime in the jails.

Parks, they got the bright idea that they should copy the notion of the sanitation department and survey park conditions. And so under Commissioner Stern, they would hire summer interns, and summer interns would be dispatched, trained and dispatched to go out and observe cleanliness and safety conditions in the park. And kind of like NYPD originally, this was all brought together for a centralized report, and by November they would have an annual report on cleanliness and safety in the parks.

And what they were seeing was the cleanliness and safety in the parks under this new system of better, more outcome oriented measurement of park conditions, they were declining. They were not getting better. And Henry Stern, the commissioner, was reading in the newspaper about CompStat. This was the report I got when I did my study there. And he never went to a CompStat meeting, but he figured out what that would look like at his place. And they decided that the problem was this annual business, and not, you know, kind of not recognizing that their park system, like the police department, is broken up into districts.

And so instead of doing it annually, they started having a schedule, and they would send observers out with this tool for measuring cleanliness and safety in a district. And they would bring that information in and they would give a district commander a report, and they'd give him a week for an action plan, and then they'd have a follow up to see if the action plan was implemented. So this managed performance reporting system became a performance management system in the parks.

But it was the parks department, and so they didn't have these kind of star chamber type meetings with people in uniform, although some of the parks people are in uniform, as you know, with their sort of Smokey the Bear hats and stuff. But they would have meetings in a conference room with a couple parks district people there and the bureau commanders. Not a big assemblage. And it wasn't headed by the commissioner, it was headed by his chief of staff and some of his analytic team.

And they would review the data, they would, you know, typically included in the diagnostic part of this, they're going, sending people out to observe, include Polaroid pictures. So fairly quickly, district managers got their own Polaroid cameras with, that had dated pictures, and they would come in and they would present their pictures of the things that had been included in their report of, you know, problem conditions in their district. And the new pictures would show that those conditions had been corrected.

And so they were very data driven, but a different kind of data, sitting around a conference table drinking, they would have mugs of coffee and they'd be wearing their park blazers. And it was a kinder, gentler kind of evidence based performance management. But the pressure on, and responsibility for performing, was similarly effective. And parks went from being 40% clean and safe to 80% clean and safe relatively quickly using this more real time, more disaggregated, more accountable outcome oriented kind of management.

STEPAN: Let's talk about the fire department and its attempts to implement CompStat type programs.

SMITH: I'm actually less familiar with the fire department's CompStat process. I did have a team of students who worked as a cap stone project when Professor Eimicke was Deputy Commissioner Eimicke at the fire department, and they did this project for him and his team. And they, so I'm sort of familiar with what I think was a very important shift in firefighting in the city, and fire protection, of having a more outcome orientation.

Because I think that, and that's, it's a really central piece of this whole story. As long as the measure is a, like an output, something like how quickly do the fire trucks arrive at the scene of a fire? They're going to miss, really, some of the most important parts of what I think we mean when we say performance or results. It sort of assumes that the thing that you're measuring is the important thing.

But if that assumption is wrong, you know, you're using a lot of energy to get something that isn't very important. And I think for a long time, fire departments had these measures that didn't really get that close to what citizens cared about. They cared about their lives and safety and injury from fires, and they cared about their property loss from fires. And it took fire departments kind of a long time to get to measuring that and having a focus on that.

I remember going once to a RAND hearing in the 1970s. RAND Corporation was doing studies for the Lindsay administration. And they presented their analysis of what a better distribution of fire houses would be, based on calls for fires and sort of reducing response time. And with their better distribution, they were going to knock maybe a minute or two minutes off average response time. And I knew it was practically irrelevant, because moving a firehouse in this city is like moving a graveyard. The politics of moving a firehouse are just enormous. But it was still an interesting kind of analysis.

And finally, I couldn't help it, I said, do you have any idea how long fires in New York are burning, typically, before the fire department gets a report? And they kind of, the researchers kind of, and they said, well I'm sure it's, you know, 45 minutes, an hour, or more. So if that's, you know, if that's what's going on, and your system is focusing on the four or five or six minutes it takes to get there, it seems like you've got the wrong end of the handle. And I think that as long as you were just focusing on response time, you would miss that.

And as a result of that, I think fire departments, this one included, for a long time were not the people who championed things like smoke alerts and, you know, more aggressive building inspection. Once you start getting a focus on the outcome of lives lost, injuries related to fire, property loss, then you have to become more creative about, what are the factors that would help us get better numbers there? And I think that that's the transformation that happened with the fire department here that is comparable to the transformation that was so important at the policing and the parks and corrections that we've talked about.

[END]

Interview with Richard Tobin February 25, 2014 at FDNY's Bureau of Fire Prevention in New York City

Interviewer: Adam Stepan

STEPAN: Chief Tobin, please introduce yourself.

TOBIN: OK. I'm assistant chief of department assigned to the Bureau of fire prevention, where I serve as the assistant chief of the Bureau of fire prevention. I've been with the New York City Fire Department for 36 years now, or actually 35 1⁄2, coming on 36, close enough for me. And I've been, I started my career in Harlem. I worked all through Manhattan, the Bronx. I worked in the Bronx, heavily in the Bronx and Manhattan. I worked in headquarters. I came down years ago as the executive officer to the chief of safety, and I think at that point is when I met Chief Cassano, and after I served as a deputy chief up in the Sixth Division, I was asked to come on board staff, and I worked as the deputy assistant chief of fire prevention, and then I was promoted to assistant chief. And then I work every two weeks as citywide command chief, where I have tactical command of the city for 24 hours.

STEPAN: Walk me back through the history of building inspections. What was the old procedure before some of the new initiatives that you helped bring about?

TOBIN: The old procedure had been in place for years, for at least 60 years, where we would, everything was done with a paper card file. Every unit in the City of New York, 300 engine companies, has what they call an administrative district, the same with the ladder companies. And that consisted of the geographical area they're in. They were responsible for inspecting all the multiple dwellings, all of the factory buildings, commercial buildings, and a cyclical inspection, initially it was one to three years. Every one to three years you would have to inspect one of these buildings, depending on how you ranked the building. We had A buildings, B buildings, C buildings. And how we ranked them was basically, the hospitals, schools, target hazards that we called factories and all, would be inspected annually, multiple dwellings, depending on the original, the company commander's view, whether it was hazardous or not would be inspected on an annual basis, or semi annual or every three years. But it was anecdotal. There was no hard data to back it up. And it also was difficult with the units in Midtown Manhattan, in the areas with high rises and all that, could never meet their goals.

STEPAN: Can you talk more about the different ratings of the buildings?

TOBIN: Right, and we had assigned those ratings based on our own experience in the area. And a lot of those they were just passed on. There was no up to date data. There was no ongoing data that told us whether one building was riskier than another. There was no categorization beyond the fact that it was a factory building, or it had been a building that a company commander knew had a lot of fires. But other than that, a new company commander could come in and never update the status of the building. So we also were responsible for 500,000 buildings to inspect. And we just, as the Fire Department evolved, where we got involved in so many other things, hazardous materials and all these other requirements for EEO training and advanced training in all kinds of different aspects, we couldn't have the time. We didn't have the time to hit all these buildings. So particularly the companies in Midtown Manhattan, with the high rise office buildings and the large complexes, never finished their buildings, never. So the Deutsche Bank, following the Deutsche Bank fire, where we lost two firemen, the fire commissioner, Commissioner

Cassano, and a group of people got together and said, we have to come up with a better system. And we decided to move towards a risk based inspection system that would use the data that we had on violations in buildings, sprinkler systems in buildings, where the building was located, what the history of the building was, and we stretched it from three years up to five years, and some buildings we looked to turn over from operations to the Bureau of Fire Prevention. Because we had units that were going to buildings sometimes the same building we got inspected three times in one year by different units of the Fire Department, because the Bureau of Fire Prevention was separate from the Bureau of Operations. So we wanted to move into an automated system that was actually based on analysis of the data and now just, well, I think this is going to be a dangerous building.

STEPAN: So was CompStat a reference here at the Fire Department?

TOBIN: Comstat, was it a basis for us? Absolutely, because we saw all of the successes the Police Department had with Comstat. We saw where they were targeting their resources to where the crime was occurring. The whole idea was to get there before the crime occurred, saturate the area. And we wanted to duplicate the same thing with our inspection process. We didn't want to wait for a fire to happen. We wanted to be out there proactively inspecting these buildings and eliminating the hazards before we had a fire there. So we saw what they did with Comstat. We realized that there was a lot of work that could be done similarly here, and that's when we decided to bring in IBM, and with Professor Eimicke, who was at the time was here on the Fire Department, he was on a sabbatical from Columbia, and he was serving as a deputy commissioner. And he was doing a strategic initiative. And I had had him at Columbia University. He was my professor at SIPA, the School of International Public Affairs. I went there to get my master's degree, and we worked closely together. And I had mentioned to him about when I went to the National Fire Academy, they had a program called RAVE, which was a brisk based inspection program. But it was a simple, very basic program. So we used that to build on what they had with CompStat to give us a basis for something to move forward, because we knew we couldn't take something and launch a huge program all at once, because we didn't have the ability to do that. And inevitably, if you tried to, if you make it too big, too complicated, you don't have enough lift power to get it off the ground. So we were trying to get something that we could develop, and as we moved on, we could refine it more and more, and we could make it more robust. But we wanted to get something up and off the ground running soon.

STEPAN: CompStat was something that people saw as a success in the police department, but the Fire Department and NYPD are very different cultures.

TOBIN: Extremely different cultures. I mean, it was like yin and yang. The Fire Department, the people that lead the Fire Department, the officers, the chiefs, they actually, and I don't mean this in a negative way for the Police Department, but the fire officer has to lead from the front. When we go to a fire, the fire officer is the first guy out on the floor. The men follow the fire officer. There's a much tighter relationship between the supervisors in the Fire Department than there is on the Police Department. And the Police Department Comstat, you know, when we would speak to people that were our similar rank, police captains, they hated to go to Comstat hearings, because it was really almost like going into a trial. Where we wanted something that, we tried something similar to that, but it was not well received. And then the commissioner was smart enough to realize, no, we're not looking to put our people on trial. We're not looking to bring our people in to make them feel uncomfortable. We're looking to make them do better on the job. So we wanted something that was as effective, but a little more user friendly. So we developed a system where we brought our people in. We would make them aware of the statistics and everything in

their units, what was going in, and we would bring in another unit that was doing very well, another unit that compared to a unit that wasn't, and would try to benchmark them against it and mentor it, to bring them up to the level that the other unit was.

STEPAN: So you felt that here at the Fire Department you needed a different structure with the core idea of getting data quicker.

TOBIN: Absolutely, without the data we couldn't do anything. I mean, you have to have the data first. In order to fix something you have to know what's broken. And without the data, you can't know what's broken. So we had to draw in all the data, and now just from ourselves, because there was data out there from the Department of Buildings, and was we moved this risk based inspection forward, there's data from the Police Department. There are correlations between high crime areas and high fire areas. There's correlations between the level of poverty in an area and the level of fires. There's high correlations there. There are also correlations between the type of building and how many violations are in there. A building with a lot of violations inevitably will have a high correlation for possibility of fire. Doesn't mean it will cause the fire, but there's a pretty good probability there'll be a fire. So we had to mine all this data. And it was a big job. Plus we had to go out. We had a paper card system, and we had to put that all into the computer. So we had to go out, and we had to make sure that everything we had that was going in was good, because if we had garbage going in, we were going to have garbage going out. So it was not an easy task. It was a lot of work. And it was a lot of work at the boots on the ground level, for the company officers, for the firemen, for everybody.

STEPAN: And in terms of the old system, the paper based system, that had been around a long time. Did you have the right information there? What were some of the processes of transformation from that system into the new system?

TOBIN: We had to go out, and we had to look at every building. We had to update the information. We had to make sure that the information on the card was currently. There were a lot of buildings that through the years had installed sprinkler systems. We had to update that. There were some buildings that said they had a sprinkler system, but it wasn't a full system. It was a partial system.
So we had to go out and make sure all the data was correct. That was the biggest thing, was making sure the data we were putting in was correct. And that was, like I said, a big task, a really big task. And it required a lot of cooperation, not just from the field units themselves, but also from the Fire Officers' Union, the Firefighters' Union. But it was easy to sell, because it was readily apparent to them that if we had this information, when they went out, when they did go to a fire, they had a lot more data to count on. They were aware. It really increased their level of awareness. The biggest thing for a firefighter on safety is that he knows his job, but also that he's aware of what the risk in the building is. So this risk based inspection program, I think was very well received by the Fire Department, the concept of it. As we were working it out, just like anything when you work with data, we hit some real bumps in the road. Some of the information that we received from other agencies on building identification when we went and sent it to the fire field, they got out there and found out, there is no building here. Because our database was much more up to date as far as buildings went than the Buildings Department was, or finance or anybody else. And that gave us some real bumps on the road. We had building identification numbers that didn't line up between agencies. So when that started happening, and units were running into problems, we had some kickback. This was supposed to make my job harder. It's making it more complicated. I go out, and I find this or that. But again, the Fire Department, we had some really sharp people who came in. We had a Chief Ghiradi, a battalion chief that came in that was very good with

computers, worked with the field units. We had a team from IBM that went out and road with all the fire units that saw from, actually from the moment they came in the fire house to they go out and do their inspection, how they do everything, mapped it all out, charted it, and we overcame a lot of those problems. Not to say, we still have some bumps in the road. Initially we did not have what I'd say was truly risked based, but then we put together a team. We had a new person come, Jeff Roth, who is a deputy commissioner now, and he works with the initiatives upstairs on the eighth floor. The was brought in by Professor Eimicke and the fire commissioner, and Jeff got together a team that started doing all the regression analysis that were necessary to come up with. Is the correlation between this and that and fire? So now, what we have now, is a truly risk based system, and it's still somewhat in its infancy, because it's going to become a lot more robust, but it's not just scheduled. It's based on risk. We do have information going in there on violations, on correlations between the neighborhood, the buildings and everything. I told you before, if we had a brownstone that was on East 67th Street and Park Avenue, and we took the same building and put it into a very, very low income, high crime neighborhood, on 67th Street, the probability of fire in that building is probably very low. Move that same building to another neighborhood, a different set of circumstances, maybe it's used as a single room occupancy, then the chance of fire was much higher. So we started refining this a lot more than it was initially.

STEPAN: What was the importance of data driven decision making under the Bloomberg Administration? Was this something that came from City Hall?

TOBIN: I think that for the Fire Department and for moving this forward, and for us, it was really, we were fortunate that Bloomberg was the mayor, because he saw the problems we had following Deutsche Bank. Don't forget, Deutsche Bank, two New York City firefighters died in that building. And there was an inspection cycle that we couldn't meet. And when we talked about doing our inspections based on hard driven data, rather than just somebody's intuitive feeling that this building would be riskier or not, and that we could actually target the buildings that were going to be the best risk, with data that was driven by this, he was very supportive. As a matter of fact, he was very aggressive, not just supportive. He was extremely aggressive. He wanted this done. And he had a team at City Hall that met constantly with us. And I mean, there was some friction, because that team wanted results a lot faster than things were moving. And I have to say in defense of, while the drove us, they also gave us the resources we needed, and for instance, Jeff Roth had worked in City Hall. And the deputy mayor, Chaz Holloway, know that he was a very intelligent guy, a driver, and Chaz is definitely what you would call a driver. And he wanted results. He wanted results, and they were very, very receptive of putting Jeff in charge of the project management overseeing this, and once he did, the progress he made was dramatic, on two terms. One, he was very capable, and two, he had the right connections. He had the right people in City Hall backing him up. So we did get a lot of focus on it. We got a lot of support from City Hall. And we got buy in from the field, which was the most important thing. If we didn't get buy in from the field, we were sunk before we even got in the water. But the field bought into it. They definitely bought into it, because they knew they could never meet all their building requirements.

STEPAN: And it's sometimes tricky when you're really good at what you do. It's hard to think about changing. And I think the New York Fire Department is one of the world's most famous departments.

TOBIN: Oh, sure. I mean, that's, when you have something that works, the old saying is, if it works, don't fix it. But you know, when there's new technology out there, that can really make you even more

effective. You have to embrace it. You know? I had a famous Marine general say that change is like a dragon. You either ride the dragon, or the dragon eats you. And the Fire Department became a, it was very aware of that. And we saw how successful the Police Department was, and we saw how the crime went way, way down, dramatically down. Right? It went from a city that was a joke at 12:00 on Johnny Carson, to the safest city in this country, large city. And we saw, I mean, where at one point whole neighborhoods were burning down, and fires were going down dramatically. Our field units were making dramatic strides in increasing fire safety. But still, the load was daunting. And this program really gave us a chance to zero in on where the greatest risk was, and not just benefit the public, but also benefit our firefighters, because when we identified the risks, then our people are aware of it. They're out there. They're looking at these buildings, the buildings that are most likely to have a fire, the one that they'll go to. And if they've been in there, and they're familiar with the building, this Fire Department is very, very good, very aggressive, and when they're familiar with it, they're going to win. They're going to be successful. So from that perspective, this program is a win/win program for everybody. It's a win program for the city. It's a win program for the fire fighters. It's a win program for the department, because it moves us forward like we've never moved before.

STEPAN: Could you give just us a bit of the history of the New York Fire Department for perspective?

TOBIN: The New York City Fire Department started as a career department in 1865, right after the end of the Civil War. Up to then, it had been a volunteer organization. We also, we're the first fire department in the United States to establish a Bureau of Fire Prevention. And we did that following a fire in 1901, which was the Triangle Shirt Waist Fire, where we had a lot of young immigrant girls that came out the windows when there was a fire in the factory. And based on that, the chiefs at the time said, we have to get out there and inspect these buildings. We have to find out what these violations are. They used to have the sweat shops. I mean, that was the time when all these people were writing books about the sweat shops, and the people living in tenements. And we had horrible tenement fires. We had horrible theater fires. We had hotel fires, where numerous people were perishing. So the Fire Department realized we have to get out there aggressively and inspect these buildings. And that system that they developed was successful. It was the first in the country, and we kept using it, using it. But the problem is that the city kept growing. The demands on the Fire Department kept growing. The number of buildings kept growing. But we couldn't meet it. We just couldn't meet that demand with the old system.

STEPAN: Just to continue in this line, can you talk about the Fire Department's organizational structure?

TOBIN: It's organized, the Fire Department's organization, the New York City Fire Department is organized very similar to something, it's a semi military organization. It follows a military model. And it follows a model of the US Army. The units are divided. They start with companies. The companies then are into battalions. There's usually about five companies in a battalion. Then there's divisions, and there's usually three to five battalions in a division. And then we move on. So right now we have nine divisions. We have divisions spread throughout the five boroughs. We have five borough commanders that are responsible for the immediate supervision of the borough, and they come into Headquarters, and they report to the chief of operations. Altogether we have close to 11,000 firefighters and officers. I think that's around the number we have. And they're spread throughout the units. Then we have in the Bureau of Fire Prevention, we have uniformed personnel. We have, I'm not sure the exact number. We might have 60 uniformed personnel firefighters and officers at different places and times based on what's going on. And we have over 350 civilian inspectors that go out and do inspections for permits, for high rise buildings, for elevators, for explosives, for standpipe and sprinkler systems, specialized inspections. We

have an engineering staff here. We have about 25 engineers that are assigned that will do a plan examination and everything, that review buildings for variances, that work closely with the buildings department, that actually do fire modeling now, which is something we never did before. We can model with the computer. We can tell where the smoke is going to travel. We can tell what the evacuation of the building is going to be like base on a fire. We can model different size fires in the building. And we can see where the fire will go, where the people will go. I mean, I'm on this job 36 years, and the difference is night and day. When I came on this job, everything you did was with carbon paper. And I thought we were never going to change, carbon paper and manual typewriters. If you had an electric typewriter, you were a lucky guy. And in the short time, we went from that to computers in all the fire houses. And when I think of that, now we've moved into the place where we actually have a risk based inspection system that is based on regression analysis and everything, and computer modeling. It's pretty amazing. I mean, this isn't just my time on the job. So for 100 years, we did business a certain, certain way, and then we started moving forward, forward. And it goes back. We had some really forward thinking chiefs. We had a chief, Chief Harris, who was in charge of communications and training, who was a trained engineer, was an electrical engineer. And he was the first chief who came up with the fire alarm systems with the ERS call boxes and all. They were abused, but it was a dramatic change from just the pull box that didn't give you any information. So we've always been, I think, a forward thinking department. But we were also, we didn't just accept something willy nilly and say we're going to change just for the sake of changing. We would carefully look at it and see, does this actually make a difference, before we jump on the bandwagon.

STEPAN: Can you talk a bit about the culture of the Fire Department?

TOBIN: The New York City Fire Department is one of the tightest communities in the world. First of all, of all the city jobs, it's the hardest to get. It's a lot harder to get on the Fire Department. The number of applicants for the Fire Department is way beyond the openings. So people really seek this job out. And when they come here, most of the people, an awful lot of our people, they have a military background. Are there guys who were, and women, guy and women now, now even women, that have had, come from backgrounds where they participated in a lot of sports events and all. They like the camaraderie. The like the challenge. We have people come on this job, inevitably, they're looking to go to the busiest firehouse in the city. Most of our people are always looking to go to the busiest firehouse in the city. They're not looking to go somewhere to, they want to go where the work is. They want to go where the challenge is. So I think we have the most motivated workforce in the city. And I think I can say that safely, and I'm proud of it, too. I think we have people who come to work every day wanting to do the right thing. We have people who really want to serve the citizens. I think usually we're rated, when they ask the public, the Fire Department, it always rates up there as one of the best agencies in the city, most responsive. We have a great workforce. But we also have a very, very cohesive workforce, because these guys go into these buildings together, because sometimes they go, and it's a situation where they don't even know if they're going to come out alive. I mean, it can be pretty daunting when you're going into a cellar fire. You can't see your hand in front of your face. It feels like you're walking into the Gates of Hell, and you've got a nozzle, and that's all you've got. And you're bumping into things in the dark. You're relying on that guy behind you, and that guy's relying on you. So we always work as a team. We work as a very close team. I think the only people who come close to doing what we do would be an infantry squad or something that's under fire. Our guys are really, really tight. And they become very, very dependent on their officers. Their officers become almost like their dad, because he's leading them. He's seeing it to them. There's a relationship. They don't just work together. They're in a fire house. They eat together. They sleep together. They go to parties together. They go to their kids' graduations together.

They have picnics together. If something happens to a fireman in a New York City fire house, that fire house is going to take care of them. You wouldn't believe how the guys will reach out to help another guy in this department. So the bonds become very, very tight. And it can also be a challenge for the bosses up above, because what happens is, they identify with the unit so strongly that they're not as open to change as some other organizations might be. So for instance, the risk based inspection, we have to really get buy in. We have to sell it. And we did. We went out, and we sold it. How we sold it, we went to them. We went to the boots on the ground, and we built it from them up. We didn't build it from the top down. We went to the field. We went actually to the boots on the ground that were doing the work. The people that came in from IBM rode with them, stayed in the fire houses with them, saw how they did their work, and we got their buy in, because they saw, these guys are really interested in what we're doing. And they want to know what's going to make the job easier for us, more efficient for us. So that's how we got the buy in. But this is not someplace where you just go and tell people, this is the top down. This is what we're telling you to do. You've got to really work the boots on the ground and get their buy in. And when you do, you've got the strongest organization in the world.

STEPAN: So the process of technology in different parts of what you do has been constant, but it's also been a good consistency in terms of culture. Talk a little bit about the process when you started, when IBM came in, and you started to work together. How was that culture? Was there real worry? How did you do that work in terms of the data? How did you do that work in terms of getting the teams to work together? What were some of the challenges as a manager to make those two worlds connect and talk?

TOBIN: We had to go out to, the New York City Fire Department, to make this system work, I told them, they had to reach out to the boots on the ground. You havetogetthebuyin. Youhavetogetthebuyin. Wehadtogetthebuyinfrom the firefighters, and we had to get it from the officers, because there was a lot of work involved. We were telling them to go out and do their BI on the paper forms, and we were also telling them to go out with these teams and reinspect every building in their district and retake their cards and put it into the computer with the IBM team. So we were doubling their work. This is a unionized department. We had to work hand in hand with the union, the UFA, the Uniformed Firefighters' Association, the Uniformed Fire Officers' Association, and I think that our chief of department, Chief Cassano, he was chief of department at the time, I think our borough commanders, I think I worked with the people here. We reached out to them. We brought in some of the most talented chiefs we had in the field. I mentioned Chief Ghiradi in the Sixth Division, very, very talented guy. But aside from that talent, he was also a highly respected fire officer. He was a boots on the ground kind of guy. And we had a lot of support from the Bureau of Operations, an awful lot of support from the chief of department, that we've got to put the people out there that these people will see. These are firefighters. These are guys who are into the job, but they're also trying to make this thing, to change, and do dramatic change. And I think we were successful. We had the right people, and we had full support of the commissioner's office, the chief of department's office, bureau of operations. We had a situation where officers were nervous about what happened at the Deutsche Bank, because inspection policies were called into question. Units were being monitored very closely. And they were looking for any help they could get. And I think we had the right people in the right place at the right time that were assuring them that the system we were putting in place was not going to be what the Police Department was putting in place. We were looking to put a system in place that was to make their job safer, to make it, to expedite their workflow, and to ultimately work to the benefit of the firefighters and fire officers, and the citizens. And it wasn't going to be a system that was calling you in, because you didn't hit your quota. There was no quota involved. It was trying to do something that would make the department more effective, and I

think that at this point, after the initial bumps in the road, if we had gone out like you saw today in the field, they'll tell you, this is dramatically more effective than it was in the past. And it's been very helpful.

STEPAN: Just explain the nitty gritty of the system and how it works.

TOBIN: We had a card system. New York City Fire Department had a card system for years. And in every company office, there was a file drawer, and there were paper cards. And they were filed. An A building required annual inspection. A B building required semi annual. A C building was every three years. So you would go in on, we had two days of inspection, Monday and Wednesday. We had what they called AFID, which was apparatus field inspection duty. We would go out on Monday , and we would, our goal was to always finish our A buildings, and then finish up as many of our B buildings as we could, so that we could finish them in the two year cycle. We would take so many of the A buildings, the cards, and we would take so many of the B buildings, and we would go out, and we would inspect them. Every company had what they called a fire prevention coordinator. You had a captain in charge of a company and there lieutenants. One of the three lieutenants would be designated as the fire prevention coordinator. Sometimes the captain himself would take it on. And he would lay out the cards for the guys each week. This is what you have to inspect. And then the next inspection day they had, if they had Monday and Wednesday, no Monday they would inspect buildings. On Wednesday they would do reinspections for any violations that were written. Whenever you wrote violations, they were on a paper. They were attached to the card. It was moved to the front. So you knew that the next day you were going to go in and clear up whatever violations you had. And then we also had special inspections. We had inspections that were requested, whether it was for a day care center, or because something happened, a fire, or some kind of problem in the building where somebody made a complaint. We had to inspect the complaint within 72 hours of receiving it, and we had to file the paperwork. So that would all be done by the company officer. But it was all done manually. And it, you know, some units were very effective at it. Other units weren't. Some units had plenty of time in a smaller district and got theirs done, and others, like for instance, Four Chalk in Midtown Manhattan on 48th Street and Eighth Avenue, running constantly on alarm systems, running to fires, running on complaints, buildings that are 50 stories high, they go in, and they start to inspect the building. They're in the building ten minutes, they get a run. They wouldn't finish these buildings. They were incapable of finishing these buildings. So that was the incentive behind these.

STEPAN: How do you overcome the challenge of getting data from other agencies?

TOBIN: New York City Fire Department, the whole city, one of the biggest challenges to overcome was the fact that every one of the agencies had its own silo of data. The other point was, they weren't all on the same platforms. So sharing that data across lines was very difficult, really difficult. A lot of it came through as emails. Some of it came through as written paper that went back and forth. Some of the silos didn't use the same language. So if, I'll give you a for instance, we had, when you go upstairs you'll see, we had the buildings department would go to a building three times on a complaint. And if after the third attempt they couldn't get in, they would mark it as resolved. Then we got data from them that said, you know, violation, and we'd see resolved. We thought that meant it was fixed. And we found out, no. The condition could still exist. So we didn't use the same language, either. So a lot of this had to be overcome. We had to use the same data, the same language, rather, to describe the data. We had to use the same building identification number. We round out that sometimes they had a different BIN number than we had, building identification number. They wanted a universal identifier. There were all kinds of problems with the data. And then whoever was doing this, before you can put the data in, it all had to be

cleansed. And this is where I don't understand this stuff. I'm not a guy who does this. But I know that our people in BTDS, the Bureau of Technology and Data Service, spend an awful lot of time just cleansing data and making sure that it would go in. And then sometimes, so they could change something, and they had to run all kinds of regressions to make sure it didn't kick back on something else. But the big thing about communicating across boundaries with the Department of Buildings, or the Department of Finance, with the Department of Environmental Protection, that was a major problem for us. And that was where we really counted on the Bloomberg Administration, and we got tremendous support from the Bloomberg Administration. I mean, that guy was a driver. No two ways about it. And he didn't tolerate people dragging their heels. When he wanted something done, he wanted it done right away, and he wanted it done properly. And that's where he had his task master, Deputy Mayor Holloway, who worked with us, and in defense of everything they did, though, when we needed the resources, they gave it to us. We just had to show them that we were doing our damnedest to get it done.

STEPAN: Could you describe housing inspections from the point of view of the station house ? What are the criteria for inspection?

TOBIN: It's more likely that it would be a risk building, because when we started it, we had four criteria. We had whether the ages of buildings, how old the building was, the occupancy of the building, what it was used for, whether it was sprinklered or non sprinklered with an automatic sprinkler system, whether what the occupancy load of the building was, we had certain factors that we knew were crucial. But they were not predictive. You couldn't really, like I said, you couldn't draw a correlation between the fact that a building was older, and that it was going to have more fires. Some buildings are older and seem very, very well maintained. They've been updated and all. It's safe. Some of the safest buildings we have were building under the 1938 building code, because it was compartmented. It was heavily constructed, heavy construction. For fire departments, we've always equated mass with fire resistance. The bigger the structural members, the greater the mass, the longer the building can withstand a fire. So the fact that something was older didn't mean it was necessarily unsafe. Now we've mined this data. Now we have our violation data in there. We're putting all the violations that we write, a building with a tremendous number of violations, the violations in themselves might not cause the fire, but they're indicative that we have a problem, and you'll see, whoa, there's a log of violations. There's a high correlation between that and the occurrence of fire. It doesn't mean they started the fire, but it will indicate, this building's more prone to fire. Data that we get from other agencies, the buildings departments, on violations that they have, data that we get from the Department of Finance. If a building's in tax arrears for years, if we can get data from the department that does housing preservation, if they tell us, oh, this building has numerous violations of the building code, and the housing maintenance code and all. These are buildings that, you know, there's a good possibility that there's going to be a high correlation with the currents of fire. So we didn't have that data before. Now we're getting it. And we're working on more data. We're constantly moving forward. We have an analytics group here, which is always out there looking to see what are the areas where there's a high correlation between these events and fire occurring in a building? And they're building this, and as we're speaking now, this system, this risk based inspection system is updated. Every few months they come up with more stuff that goes into it, that makes it more robust. So our idea was to start out with a reliable system, and then build it up, build it up, build it up, like a NASCAR, almost. OK, I got a good solid block here. But we're going to be able to move that block, and we're going to be able to supercharge it by putting this and this on it. That's what we're doing. We're really doing that. That's the correlation I use. It's like we're building a NASCAR.

STEPAN: You could have a building that one year before was in pretty good shape, but because of various issues that come up, it might be stuff you're getting from the Police Department or other bureaus

TOBIN: Sure, I mean, if you have a building where the building was stable before, and all of a sudden you have drug dealers move into that building, and now the building goes from a stable building to a crime ridden building, and people looking to get out with vacant apartments, there's a good chance there's going to a higher chance of fire in that building, because it's just not going to be maintained the same. If you have a building where the landlord took care of it and all of a sudden dumps it and walks away, and the building's no longer maintained, all of these things plan in. If you have a building that all of a sudden hasn't been paying taxes for years, something's going on there. So we never had that data before. Now we're looking to get that type of data, and we're feeding it into our system. So we have a system that is based on hard data, not just conjecture or, well, this is the way it has been, because things change dramatically. So this system is being updated constantly. Every night, whatever data is coming is being put into the system, and it's run through this series of analysis, and that changes the score on that building. There's a score. And as the score goes higher, it moves forward to when we inspect it.

STEPAN: Let's just talk a little bit about the command center. Obviously New York is a special place. 9/11 also changed the scenario here. Was that something that forced the Fire Department to realize it had almost a national mission in terms of looking at safety issues?

TOBIN: The events of 9/11 changed the way the Fire Department looks at everything, everything. I mean, we never, we went out the door, and I don't think anybody foresaw the possibility of 343 firefighters form the New York City Fire Department dying within two hours, nobody. Never in our history did we imagine anything like that. I mean, never in our history did we have people flying fully loaded jet airplanes into our buildings. The City of New York, being the financial center of the United States, the financial center of the world, it epitomizes everything about the United States, the capitalists and everything, is the number one terrorist target in the world, and it still is. And I'd have to give credit to the New York City Police Department, they have thwarted time after time after time numerous threats that were underway, and they caught them. And the Fire Department did the same thing in Midtown Manhattan. It was the Fire Department that found the bomb in the car that was ready to go off, and that bomb wasn't there to scare people. That bomb was there to kill people in this city. So our people, we had a much, much higher level of awareness about what was going on. We had the McKinsey Group come in. They studied the Fire Department. It took a lot of courage for the Fire Department, because we opened ourselves up to whatever criticism was out there, because we weren't going to have that happen to us again. And you have to take your hat off to the commissioner, because a lot of agencies, they don't want anybody to come in and criticize what they did. But we went in there, and I think we went with an open heart and said, we don't want this to happen again. What do we have to do? And one of the biggest things was, we needed a Fire Department operations center that was state of the art, that could tell us from minute to minute to minute where our companies were, what companies were at the assignment, what floors are up, everything. All this data coming in. We have a hot line, I think we're the only fire department in the United States that has a hot line directly to Homeland Security in a secure room up there. Every one of the staff chiefs that works as a city wide command chief, has a secret clearance, which other fire departments don't have. I mean, I went through the background check. Every staff chief on the New York City Fire Department has at least a secret clearance, and we can communicate with them. When you go up and see it, you'll see, I can tell you as a staff chief, I can walk into that command center, and I can know how many engine companies are available throughout the city, how many ladder companies are available, how many alarms are active, where the activity is going on, and it also gives us a

chance, if we see a spur, oh, there's something I want to hear, something going on here in the medical, even medical. All of a sudden, if we have certain medical emergencies that start popping up around the city, it could be indicative of something besides just a flu epidemic. It could be intentional. So we have capabilities there that I think are top in the nation. I mean, I really do. It's like Star Wars when you walk in there. You'll see all the things there that are, the monitors that are on. We have the capability of receiving live feeds from helicopters and big screens. We the capability of bringing in all other agencies and meeting with phone banks, we have dedicated phone banks. It's pretty amazing what we've met with, the strides that we've made. And these were all something, these were all during the Bloomberg years. I mean, after 9/11, there were a lot of people thought there would never be another high rise building built in New York City, and there have been more high rises built in the past 12 years than ever before in the history of the city. And they're safer than they were built before.

The data on all of them, the floor plans, every one of the floor plans, the Fire Department has them. We have them in the center. We can pull them up. We can tell our people everything about a building. We never had this capability before.

We've made such tremendous strides in getting data to use to enhance the safety of the citizens and the firefighters that it's pretty phenomenal. It really is. I mean, like I say, when I think that I came out of the Fire Department using carbon paper, and yet now we can pull up data and going out the door, before I even go out the door as a citywide chief, I can tell you what violations are out on that building, how many stories, the floor plate of that building, where the sprinkler systems are, where the shut off valves are, what kind of systems are in the building, where the elevator banks are, where all the control rooms are, where all the shut offs are. We never had that before. We are really, I think that we are probably the most state of the art large fire department in the world. We really are. We have so much data that we've never had. The thing we have to be careful of is that we don't flood a chief with a waterfall of data where he says, there's too much coming in. So that's where we have to really refine the data.

STEPAN: There's also all of this legacy data that's still on paper. So at the same time you have all the new systems, how are you managing all the different types of data?

TOBIN: Well, right now, you have to understand, when we did this system, when we brought in the risk based inspection system, which relied on the data, we did this in phases. The first phase was the Bureau of Operations. Those are the fire units, the engine companies, the ladder companies, the rescue companies. Those are the people who are going to fires. Those are the guys who are every time they go out the door, directly walking into harm's way. Those are where the citizens are trapped in fire. So we prioritize that. That was the first phase of this system. The second phase was fire prevention. And we worked with IBM on that. We worked extensively with IBM on that. Our people here in Bureau of Technology and Data Service, they did tremendous work on that. We came down, same thing, we mapped all the work. There is a tremendous amount of paper down here that we're trying to file, put into electronic data now. It's very expensive, though. It's not something that's done, it's not done on the cheap, not if you wanted to have it done right. So we're moving that way. We're still working on implementing that phase for fire prevention. We worked very, very closely with Claudia Gerola from IBM. She brought in a team that really, really did outstanding work in the Bureau of Fire Prevention, and for one reason or another, they moved on, but they gave us all that groundwork that we're still working on. We have that, and we're moving it forward now. Will fire prevention be automated right now? They say in the next couple of years. It's going to take a couple of years for fire prevention to be automated the way bureau of operations is now. Because fire prevention's on a different platform. Fire prevention is

actually on a Unisys platform, a Cobalt based system that you can't even find people who can read that. So it's not a user friendly system. It's been effective for years, but it's kind of like a Model A now. You can still drive it, but when it breaks down, it's hard to get parts for. But we made tremendous strides.

STEPAN: So describe in a bit more detail the control room center.

TOBIN: OK, the control room center is set up where when you walk into the control room center, on one side of the floor you'll see people from the emergency medical services. And they're tracking every ambulance in the city, every ambulance call, everything, every ambulance that's tied up, what type of call it's on, how long they've been out on that call, what the availability of ambulances is. If they have to start moving resources they do. On the other side you're going to see the fire, and that tracks all five boroughs. We have the Bronx. We have Manhattan. We have Staten Island. We have Brooklyn. We have Queens. We have the status of each borough. Well, I can tell you at any given time how many fire alarms are out that are actively being worked on, how many call boxes are out. I can tell you how many engine companies are available at any given time, how many ladder companies are available, how many alarms are active at that hour, what the rate of alarms we're receiving, and based on that, if something starts to happen, they'll notify the command chief. We have a problem in Queens. You know? The units were down to only this percent of availability, or ladder companies. It also ties into wit the dispatchers. They'll automatically start relocating companies. They'll start covering areas of the city. There's just this tremendous, tremendous amount of data that's out there on building violations, from the buildings department and everything, I can say we can pull up the profile of a building. We have the GIS, global information system, we have the overhead shots from Google Maps and everything. Before you go out the door, you walk into the command center. If they tell you there's a fire on Twelfth Avenue, 1288 Twelfth Avenue, they can actually pull that address up, and you can look at it before you're going out the door, and you have a good idea what you're going out before you even get there. Before you were relying on the radio, and you're going in, and they're telling you it's a 20 story or this or that. But you didn't see the setback and the overhead projections that we do in a building. They zoom in on it. You can see it from all sides before you go out the door. You can see all the data from the buildings department. You can see all of the critical information that we have that's in the dispatch system. We have what we call critical information dispatch that tells us about hazards that are in the building. We have the data from fire prevention on what hazardous materials are stored in the building and everything. So the capabilities are incredible. When you go up, and you see it. I mean, I've brought people in here from the Department of Defense. I've brought people in here from other fire departments. I've brought people in here from Paris. And when they see it, they walk away, they can't believe what we're capable of doing. And this has all occurred since 9/11, and it has occurred with strong support from the city government, because the City of New York is always, this isn't new, it's always in a fiscal crisis. Ever since I've been on the Fire Department, the city's in a fiscal crisis. But the bottom line is, they did prioritize, and they did say, we're going to put the resources into this. And we did have at the top leadership, particularly with, I mean, we have a fire commissioner now. Sal Cassano. He's had every rank in this fire department. He served as a fireman, a lieutenant, a captain, a battalion chief, a deputy chief, a deputy assistant chief, the chief of operations, the assistant chief of operations, the chief of operations, chief of department, and now he's the fire commissioner. So this is a guy who is very, very intimately aware of what the needs of this department are, and he did have a very good relationship, working relationship with the Bloomberg Administration, and we got the support for the resources we actually needed, actually needed, we did.

STEPAN: And does this saves lives?

TOBIN: It absolutely saves lives. Absolutely saves lives. We, today, the New York City Fire Department, the population of the City of New York has never been as large as it is now. There's 8 1/2 million people that live in this city. And last year, we had the lowest rate of fire fatalities in the history of the New York City Fire Department in this city. And that's even with the aging housing stock and everything else, because now with this risk based inspection, we've enhanced our inspection. We used to go out two days a week. We go out three days a week. We've targeted our resources to meet this. We've trained our people. We have the highest trained emergency medical service in the country. We have all of our engine companies trained as CFRDs, certified first responder defibulator that go out there, that cut the response time to emergencies. Our people pull people out of fires. I'll tell you the truth, there are a lot of people walking around in this city that the only reason they're walking around is because we have the most highly trained, the most aggressive fire department in the world, and it's supported by this data that we can target our resources.

STEPAN: Just to wrap up, can you give me some numbers on the Fire Department? How many buildings are you guys responsible for? How many people in New York City? How many firefighters?

TOBIN: OK, the Fire Department has a budget that's $2 billion a year. Or is it over a billion. It's over a billion. Let's put it at a billion. But by the time you put everything else in. But it's over a billion dollar operation. We have 11,000 uniformed personnel. We have another thousand, at least thousand support personnel. We have 3,000 some odd emergency medical personnel. We have close to 300 engine companies. We have 130 ladder companies. We have five heavy rescue companies. We have five heavy squad companies that back them up. We have a hazardous materials unit. We have a marine fleet that is second to none in the United States. Our boats are so state of the art, I had somebody from the Defense Department ride with me. He said, this boat could go over to Afghanistan and serve in hostile waters.

STEPAN: What about New York City? How many buildings?

TOBIN: 400 or 500, there's a million buildings in the City of New York. There's a million buildings in the City of New York. The Fire Department is responsible for inspecting almost 500,000 of those buildings. So I mean, look at it. It's a daunting task. On top of that, we respond to hundreds of thousands of emergency calls, fire calls every single year.

STEPAN: How many calls, how many millions of calls a year?

TOBIN: Oh, my God, I'd have to look at the numbers. But I would say there's, all together? There's close to 200,000 calls a year, maybe more. You know?

STEPAN: This has been wonderful, and you've covered a lot. Is there anything else you wanted to say?

TOBIN: I really want anybody who's watching this to understand, the data's great. The data's great. It tremendously aids us in what we do. But the bottom line is, the most important thing on this job are the personnel we have. We have got the highest caliber, most dedicated personnel of any fire department in the world. Hands down, I'd go up against anybody. New York City Fire Department is, in my opinion, the most dedicated, most professional fire department in the world. We've gone through a lot of issues, and the people that are coming on today, we're a more diverse fire department than we've ever been before. The diversity has strengthened us. It's strengthened us. We have ties to this community better

than we ever have before, because of that diversity. We have got people that have truly, truly supported us in the City Council and in the unions and everything, in making this department and maintaining this department as the premier fire department in the world. I mean, people come from all over the world to see how the New York City Fire Department is run and operated. And I just want everybody to understand that the reason it runs that way is because of the people we have. We have great people. That's what makes us what we are. Thank you.

[END]

Interview with Michael Flowers on February 26, 2014 at Columbia University

Interviewer: Adam Stepan

STEPAN: Tell me, you have an unusual background, or some people would say an unusual background for the role you had with Bloomberg. Why don't you just give a little bit about your personal history of how you came to that?

FLOWERS: Well, my background is I'm an attorney by training. I'm still licensed to practice in the state of New York. Thankfully. I was a prosecutor. Then I was in the commercial sector, handling white collar matters. Then I was in Iraq for a couple of years with the Department of Justice for Sadaam's trial. That was really more of a logistician's job than a legal job. When I came back I went to the permanent subcommittee on investigations in the Senate. Then I ended up taking on the most recent past job I had with Mayor Bloomberg.

STEPAN: So, what's the connection between investigation within the prosecutor's office and sort of what you did before?

FLOWERS: The common theme, the arc across these various jobs I've had, I think is something I myself have struggled with to a certain degree to explain. A lot of it's just happenstance and I've just taken jobs based on whether or not they seemed interesting and doable to me. But, from what I can tell, the best, when you're in law enforcement, especially prosecution specifically, the task is to take disparate streams of information and synthesize them into a story that is explainable to 12 strangers. Right. Get them to agree with you that what you say happened, happened. Moreover, because I was involved in fraud work, fraud prosecution work and fraud investigation work. Fraud is simply the exploitation of informational asymmetries. I mean, in this case it's for illegal purposes. But what we at, either when I was in Iraq, with what the intelligence committee was doing for us, or when I was with the city, what we were doing was taking those same informational asymmetries and exploiting them for public sector efficiencies, if that makes any sense.

STEPAN: No, it makes a lot of sense. So, at what point, when you were approached by someone in the Bloomberg administration to have a role like this, what was your background in the computer science, programming, statistical analysis?

FLOWERS: I have no background in computer programming or science. I think if I told you the board scores I got in High School for math, that you would be horrified.

STEPAN: So, it's about asking the right questions?

FLOWERS: I think it's about being intellectually curious, able to understand aberrations from the norm, however they manifest themselves, and then seeing opportunity in that. Opportunity can come in many different ways. So, it was less a matter of, I don't want to dismiss the data science component of it, because it's exceedingly important. I also don't want to dismiss the technology component of what we were able to achieve in New York, because that too is significant. But all those things are, they're really enablers. Somebody has to leverage them to do something. So, it's kind of like, a knife that's on the table is just a knife until somebody picks it up and starts sculpting with it.

STEPAN: So, let's talk a little bit about that, the mandate. Take us back, you were appointed in 2013?

FLOWERS: Correct.

STEPAN: Explain to me the job description on the day that it was handed to you.

FLOWERS: So, that 2013 appointment was more of a formalization of what we'd been doing since 2009. I started with the city in December of '09 and my original position was as the Director of the Financial Crime Task Force. That Financial Crime Task Force was kind of an overblown way of describing me and another guy sitting in a cubicle and looking over mortgage records to see if the city could be a little more proactive about how it handled mortgage fraud. As we gathered more and more information over time, we learned that the city knew a tremendous amount of information about locations and businesses and people in New York City. So, the cross tab changed from mortgage fraud to pretty much any service that the city delivers.

STEPAN: Let's pick it up from you say you came in 2009.

FLOWERS: Yeah, so I started with the city in December of 2009, as the director of the Financial Crime Task Force. So the original job I was hired to do was to see if we could leverage city information to effectively combat mortgage fraud, specifically, against New Yorkers. The answer to that was yes, we can. So, what we learned from that exercise was that we know a tremendous amount of information about our locations and our businesses and our people and that can be leveraged to do anything, not just combat mortgage fraud, but fight fire or unclog drains, or license businesses more quickly or rebuild after a massive catastrophe like Sandy. So the job morphed as we learned just how effective the tools could be.

STEPAN: So, this use of data was obviously something that was very close to Bloomberg's success his whole life. Maybe just connect a little bit about the history here in New York and also with Bloomberg. Was CompStat seen as the point where a lot of this started?

FLOWERS: I think absolutely CompStat was a kickoff in many ways for performance management in government, and I think, and you know CompStat started well before Mayor Bloomberg arrived on the scene. What Mayor Bloomberg stepped in and did was take the Mayor's Management Report, which was a pre existing set of metrics, key performance indicators for city agencies and make it a lot more robust, based on his concept that if you can't measure it, you can't manage it. Right? So, underlying all that was Bloomberg's philosophy that he just believed very strongly that New Yorkers have the right to expect the same competence from their government that the most advanced private sector companies in the world provide to their shareholders, constituents or clients. That doesn't seem to be a very radical notion, but in fact it was quite radical because at that point that meant taking that approach, that we must measure everything in order to get better at what we're doing, to a whole new level and a whole different order of magnitude than had previously been possible. So, from there, I stepped in. I joined the Bloomberg government eight years in, so there had been eight years of the Bloomberg philosophy of hiring managers who measured what was going on, measured their performance and were seeking constantly better benchmarks of what they were doing, which meant the construction of these back end systems that allowed that measurement to occur, these back end IT systems. So, what I stepped in and said, OK, we have to go now to the next step, what these developments have allowed us to do is measure exactly you know, how many tax liens we're generating or how many inspections we're doing or how many

businesses we're licensing on a really granular level. Now, can I leverage that information from the Department of Finance, on behalf of what the Department of Buildings has to do, because we now know and can tie statistically that the you know, the failure of the Department of Buildings to act on a specific location has a downstream impact on the fire department, or the Police Department or the water department or whatever.

STEPAN: You have to understand the principle behind it.

FLOWERS: You need cocktail party knowledge of statistics. Right? You need to be able to converse about it at a surface level and once you get into R programming or whatever, you can let your eyes glaze over.

STEPAN: Picking up then, in terms of Bloomberg's mission and his idea of customer service, just make the connection again to how CompStat allowed people to introduce the idea of measurement into government and management. Talk about Bloomberg's desire to expand what had been done with the Police force at CompStat to other agencies.

FLOWERS: So, CompStat, as I understand it, is a resource allocation tool. What CompStat permits the Police Commissioner and the Precinct heads and the leadership at a PD to do is send their officers where they're needed as opposed to some other way of sending their officers. That proved to be incredibly effective. So, the next step, under Bloomberg, is to take that concept, whether you call it CompStat or the Mayor's Management Report or whatever, and apply it to everything that the city does. So, if I'm the Buildings Department and I have a number of inspections to do and a number of inspectors to perform those inspections, then I'm going to be reporting on what I'm doing so I can allocate those resources most effectively. Send them where they're most needed. So, the level after that, the step after that is to then say, well let me think about whether or not there's a connection between what the Department of Finance knows about our buildings in New York City and where we should be sending those building inspectors. In other words, we have a finite number of resources, we have a massive lift, New York, it's a colossus. So, anything we can do to return, to hike the return on our resources that we get, that return is measured in public safety, public health, small business development, etc., etc., etc., resiliency, is a good thing. Right? So, this is all outcome driven. If I can demonstrate conclusively that if a property has a tax lien on it, and that that existence of a tax lien correlates with an orders of magnitude increase in the likelihood of a catastrophic event at that location, well one of the city's most fundamental jobs is to prevent those catastrophic events from occurring in the first place, if they can, or responding to them as effectively as possible, if God forbid, they do occur, and we know they occur. So, that proves to be extremely high value. You're taking a piece of information that is collected in the routine course of business by the Department of Finance when it's executing its job as the city's chief treasurer, and saying there's more to be had here is simply this building is in arrears. What this piece of information is telling me is that there's a catastrophe more likely at this smaller subset of our one million buildings and therefore I'm going to send my finite resources to that place first. That, without increasing the number of resources available to the Department of Buildings, dramatically increases their effectiveness. So, the arc is pretty simple, but at the same time, I mean it's a long stretch, but it's a natural progression of the effective leveraging of information to send our resources where they are most needed, most quickly.

STEPAN: I mean, one of the things that seems to be common in all of this is obviously what is perceived to be a very big up front investment in research, computing and obviously it's one that has pay back, often very significant financial pay back in terms of better use of resources. Politically, how did that work? Was Bloomberg special in going out and saying we're going to do this, we're going to spend this

money up front, look at this stuff. Did you look for some early wins to prove to people that this wasn't crazy and made financial sense?

FLOWERS: Yeah. Absolutely. So, I think, when you're engaging in an analytics enterprise at a municipal level, you've got four buckets of challenges, right? Technological, cultural, political and legal, in no particular order. Technological's the easy one. It's a fraud endeavor to a certain degree, because IT projects tend to become tangled up in inefficiencies, but I have a tendency to believe that's because of business failures, not technology failures. But the reality is, you are talking about a significant capital investment. You have to sell a bond, and that's taxpayer money, and that money has to be paid off, so you want to make sure you're doing it the right way. I think where a lot of people falter in leveraging analytics is that they make a massive upfront investment without proving they even need to do it. A lot of people think that they need more or newer information streams, where in reality cities know tremendous amounts already and just need to learn how to use it more effectively. So, what we set about doing with my very small group in city hall was proof of concept. Let's go out and demonstrate in a short, easy way, that doesn't have any overhead or impact and uses things we already have, like a pure bootstrap approach, to show that it does make sense for us to build an automated, routinized system that allows us to leverage all of our information streams effectively. So, what we were able to do was to prove just that. We proved it so emphatically, in fact, it was proved a lot more robustly than I had expected, frankly, and that actually caused a lot of growing pains because we ended up generating a market that I wasn't prepared to meet with the resources that I had available to me. But that's good, right? That's organic. It shows that instead of kind of top down imposing a market on somebody, something grows organically and then we seek to respond to it.

STEPAN: What were some of the early days like?

FLOWERS: So, the early victories, I had one initial failure and then a bunch of victories. The initial failure was the mortgage fraud experiment. It was not a failure because we weren't able to detect mortgage fraud earlier through using city information. It was a failure because nobody used it. So, I ended up pulling up a product that nobody bought. Right? That was my fault; that wasn't the data's fault and that wasn't the analysis fault. The analysis was sound and the data was just fine. What I failed to do was understand the market; in this case the law enforcement community, which is a really cardinal sin, considering my background. Prosecutors have a lot of work to do already, so I was offering them more work, not less. The victims in mortgage fraud aren't particularly the easiest victims to work with. The banks. I think a lot of people think that it's really some poor middle class guy out in Queens, and occasionally they are the victims, but really the victims are like Bank of America, or Chase, or J.P. Morgan and they're very bad at being forthcoming about being defrauded. So, that's why the product failed. Again, that was my fault in terms of a business process and not the fault of the data science. The win that we got after that was we had a series of fires in buildings that were later determined in violation of the city safety codes, this is the building codes. You know, we had a couple of kids die and we had firemen get seriously injured in the course of responding to responding to those fires. So, the mayor asked my group to see if there was something that we could do with this, all of this information we had, to send our inspectors out more effectively. Right? Could we have, out of the one million buildings in New York City, done a better job of allocating our 200 or 300 inspectors to go to those places and aggressively enforce the code? So, we basically just changed the cross tab from mortgage fraud to fire. Right? You just change your cross tab outcome; it's a different column in Excel and then, do a basic Bayesian analysis, right? From there, it succeeded so spectacularly, right? We went from a usual rate of, it was anywhere between nine and 13% of the time when you sent an inspector out to a location that had been complained about,

they did find a condition that was extremely serious. When we were selecting properties for them and saying yes, you should go to these first, 70 to 75 percent of the time, they were finding serious conditions. So, that's a five fold increase, at least, if not close to 10, simply by leveraging our information more effectively. That's a huge win, and it didn't cost a nickel. The kid that did it, I hired him off of Craigslist and he was fresh out of college. We used 2003 PCs and the 2004 version of Microsoft Excel, that kept crashing over and over again as we were trying to do the analysis, but we were still able to extract real value from that information. That information we got, we didn't' have to bother the agencies to get it because it was already on the city's open data page. So, it was easy.

STEPAN: In terms of pharmacies and using Medicaid, can you explain that example?

FLOWERS: So, New York City regulates its pharmacies to varying degrees, right? If you sell cigarettes, the Department of Consumer Affairs sells you a license. There are a number of touch points on New York City pharmacies. One of those is Medicaid distributions. So, if you're on Medicaid, you go to the pharmacy, you get your medicine that you need and the pharmacy will submit for re imbursement from the Human Resources Administration. Right? A city agency that administers Medicaid in New York City and the five boroughs. So, we saw that as an interesting data point, because it's not a data point about the person receiving the benefit, right, which is fraught with privacy issues. It's where they're redeeming the benefits. It's a node of distribution, and that node of distribution we had good information about. To wit, how many redemptions are being made at each pharmacy. So, we saw in Staten Island over the last few years, a rise in the number of people abusing prescription drugs; specifically oxycodone and oxycontin, and they're, the Department of Health and the Police Department both were very concerned about this. So, the question was, could we leverage this information from the Human Resources Administration to target our scrutiny resources more effectively. The Human Resources Administration, because they, you know, they pay these pharmacies for the Medicaid benefits they provide, are empowered to conduct audits on the pharmacies. But they only have a limited number of auditors and there's 2400, 2500 pharmacies that redeem Medicaid benefits in New York City. So, you want to pick those where bad things are happening. So, what we did was we found, we did a basic analysis of the redemptions for those specific high concentration oxy, and were able to find that one percent, about 20 of the pharmacies, right, were responsible for about 80%, 90% of the Oxy distribution, for, at least for Medicaid redemptions. Then, we further tested that by then having HRA train their audit capacity on those pharmacies and about 19 out of the 20 turned out to be up to no good. Now, those 19 were up to no good in different ways. You know, some people were doing things that were bad vis à vis improper redemptions for Oxycodone, but others were up to no good in ways that had nothing to do with Oxy. What they told us was that this was a very good way to allocate our audit resources most effectively, right? That was an easy win. It was a simple, basic, the same kid that did the fire analysis was the one that did that with the Medicaid inspections.

STEPAN: Let's go back and talk a bit more about Bloomberg and his connection between the work he did in the private sector and coming here.

FLOWERS: So, I think a lot of the time people forget that Bloomberg LP ended up being spectacularly successful because it imposed transparency on the bond market. Really, at the end of the day. It synthesized a multitude of information streams and made it available for decision makers, in this case investors or analysts, so that they could better allocate their money, their investment bets. We just took the same approach in government. Right? So, Bloomberg just took that philosophy, let's impose transparency on everybody involved, make the decision making more effective accordingly, right? It's a

fairly straightforward, yet seemingly radical approach to things, and then he took that into government with him and that's how we really kicked off. So, he spent most of his time, basically trying to impose internal and external transparency on New York City government and then, with the idea being from there will flow efficiencies and the answer was yes, that's true.

STEPAN: In terms of applying the CompStat model or of taking this approach to different agencies, how did you go about it? What were some of the challenges? What did you learn?

FLOWERS: So, I think where many missteps get made is the desire to bite off more than people can chew. So, if you're going to go into, bureaucracies are expressly designed to be resilient. That's why they exist, because we want them to be able to handle the vicissitudes of elected government, right? It doesn't matter...because the trash still needs to be picked up. So, bureaucracies get established to do that. Processes and routines. So, changing them is an extremely difficult endeavor. Moreover, tribal turf wars are real. They absolutely exist. Agencies get deeply invested in their subject matter areas. Frankly, I'm glad they do because they're extremely technocratically competent at their jobs. We want them to be deeply invested in their subject matter. So, I think a lot of people sit there and say, oh, well, you know, you're siloed and this is turf, but one person's silo and turf is another person's diversity of subject matter expertise. So, what we ended up being successful at, frankly, was embracing that, rather than combating it. If you embrace the concept that different agencies do different things, and not try to alter that fundamentally, but rather accept the parameters, their operating parameters of their logistics of service delivery, and then try to tweak from there, then I think you're going to be exceedingly more successful than somebody who goes in and says, well we're going to fundamentally alter how we inspect houses in New York City. I think, for the most part, the bureaucracy will figure out a way to shake you off. We're fleas on a dog in many ways. These are people who have been around and doing these jobs for decades and decades and decades. They've seen government innovators come and go over and over again. They kind of laugh at them to a certain degree. They're indifferent to elected leadership. So, what you have to do is respect them and respect that process and respect that structure, and still say, you know what, go out and use the process you use to go out and make your inspections, however you've been doing it for however long, but now I'm just going to leverage what the Finance Department knows when we figure out what order in which you're going to make those inspections. That's it. You won't, it will be upstream from you. It won't change a thing. I'm not changing your SOP manual one bit. So, I think if you embrace and accept the plusses and minuses of existing systems, and try to tweak those from within, then what you'll find is A, a lot more likelihood of success, initially. You'll prove yourself, before you ask them to disrupt themselves and B, changes happen organically. So when you make it obvious that if the Department of Buildings doesn't do its job, that that's going to impact the fire department down the road, then there's a lot more scrutiny being paid to how we measure the performance of the Department of Buildings. Previously, for example, the way we measured the Department of Buildings performance, or KPI for them, one of the huge ones was how many inspections we did. Well frankly, who cares, if the inspections aren't resulting in anything? What I want to know is what did the inspection get us? Right? What is the net safety gain for the city when we do that inspection? But by being able to tie that correlation from the Department of Finance information to the Department of Buildings' lift to the fire department having to endure injuries to its own personnel or civilians when it responds to a fire, we can now sit there and say you know what, instead of reporting that I did 20,000 inspections last year, let's report on how many of those inspections turned up bad things and how quickly did we get to those? How quickly did we remediate the unsafe conditions we found at these hyper serious, problematic locations? That's all from embracing who they are. So, we didn't go in expecting to do this. I did not expect to have, it to have this impact. All I wanted to do was see if we could use that information more

effectively. What that had, well the answer to that was a resounding yes, but it also had some cascading impacts on how the city fundamentally delivered services.

STEPAN: People often talk about silos, and I think you're totally right about how you've got to work with how people normally do things. Transparency of data across agencies, is that the big job?

FLOWERS: I think it's a challenge, but I also, I think that cross agency transparency is a challenge, but it's not a challenge for the reasons most people believe. I think excuses get thrown out for the different ontologies that exist. The Department of Buildings, when it refers to a location, uses something called a building identification number. The Finance Department of Finances uses something called the Borough Block and Lot; it's the land on which that building sits. The Post Office of course uses its own, its address, right? The first response agencies use latitude and longitudes, etc., etc., etc. So what? If you try and fundamentally alter those, then you're actually losing the nuance that that ontology gives that agency when it has to go out and do its job. Why would we want to go to a universal identifier when I think it's just not necessary at this point? The technology has advanced and the data science has advanced to the stage where the barrier to entry, to synthesizing these different systems, for purpose driven reasons, can be effected rather simply, so we don't need to invest a ton of money in changing our ontologies. Those ontologies exist for a good reason, right? If we go in and tell them to change that, then we're making a big problem for ourselves that's just not necessary. What we need to do instead is be problem driven. If somebody just wants to pool all our information together just for the heck of it, then yeah, maybe everybody should move to a common format, or a common ontology anyway. There are certain data formatting standards that should be common, so that we can publish it uniformly. But that doesn't mean the substance should change. Statistical techniques should be driven by why you're doing them in the first place. So, why was interested in merging what the Finance Department knew with what another department knew or what the EP knew with what DCA knew about where your licenses were? Well, because we were trying to fix a problem. We were trying to send our inspectors out more effectively. That's going to change the methods I use to cram this data together to a certain degree. What I think should happen technologically speaking and from a data science perspective is that data should be more freely available for that to happen. Bust out the black box system; let's get out of that system to where everything is on a common platform, but we shouldn't be imposing standards on top of that, because I think it's not necessary. That help?

STEPAN: Let's talk a bit about the case of the New York Fire Department. How it was done? What were the goals? What were the challenges?

FLOWERS: So, the fire department engaged with IBM to construct something called the Risk Based Inspection System. I think it was called, it had a number of different names, but ultimately ended up being called the Risk based Inspection System, or RBIS; classic governmenty sounding acronym.

STEPAN: So tell me the story of big data and your fire department?

FLOWERS: So, the fire department, this was before I even was around, started looking at building a risk based inspection system. So, it's not as if we came up with anything novel, frankly, in the sense that oh, we're going to go risk based and it was Flowers' idea. It wasn't that at all. There were a multitude of agencies that were interested in doing this kind of thing. So, the fire department engaged with IBM to construct a system that would allow them, the fire department does their own inspections, about 300,000 of them. They have 300,000 buildings, out of the million buildings in New York City, that they are

obligated to inspect every year. They don't necessarily get to all of them, but they, you know, previously it was done in a very haphazard manner. Worse than random I think, frankly. I think it was driven by how close a building might be to like Home Depot or something, right? Which is fact, worse than random, right? If you randomly select the buildings you inspect, you're going to do better than picking a place based on whether it's close to a BBQ joint or if you've got to go buy a hammer. So, what the fire department did was they engaged with IBM to build a system that allowed them to convert from paper to digits, and then from there to automate and routinize an inspection regime and then from there to convert that to a risk based system. So there really are three different things that are going on. So, IBM gets brought in, as I understand it. They build the first two components. It worked. They were able to convert from paper to digits, and they were able to automate and routinize it. But there was no R in it. It wasn't a risk based inspection system. It was an inspection system that was electronic. So, they were still random; there was still no risk applied. So, there were a lot of challenges, I think, with their approach. I think what they did, programmatically, and this is just sort of an insider/outsider view. Where they failed was they tried to get too complicated, and then not complicated enough. They weren't leveraging what the city knew. They weren't' taking advantage of what New York City knew, and that's for a variety of reasons. Some of them were business related, i.e. I think that the fire department failed to reach out to other agencies and no; it's not just that. I feel like the city should have done a better job of making other agency data available for the fire department to use, which it didn't do. I think that IBM was over engineering the situation. They were thinking too much. All they needed to do was do what my kids did and say huh, if there's a tax lien on there, that means we should take a look at that place, because that correlates with a higher rate of fire. Which is very common sensical stuff, if you think about it. I think they abandoned common sense as they were looking at the data, in favor of a sexy algorithm that didn't exactly, that was un implementable and wasn't particularly effective. So, then, Cas Holloway, the Deputy Mayor for Operations, and who was my primary client, and who frankly is the most effective public servant with whom I've ever worked, asked my group to take a look at it. It was a fraught endeavor, on many levels, because there were a lot of people who were politically invested, deeply invested in the way RBIS was going, and it wasn't working well. So, IBM got fired from the gig. I threw one of my programmers at it. It was this young woman named Lauren Talbot, who was able to take what RBIS was doing, which was actually being less effective than random, and convert it into something where the first 21% of the inspections will give you a 75% yield of those places most likely to have a catastrophic outcome. She did it all with a much less expensive statistical package. It was really leveraging information that the fire department already had available to it. So we didn't even try and make their information warehouse more robust, we just wanted to tap it more effectively, and Lauren was able to deliver on that. She was my chief programmer. It was eminently implementable because we respected the parameters of RBIS as we walked in. Because I think many people's reactions when they're having a problem with an IT, what they consider to be an IT project, is to kind of, OK, well let's toss everything and go back to the drawing board and try something new and you've now wasted a ton of money. What we did instead was say, OK, these are the Legos we've got before us, let's snap them together in an effective manner that doesn't cause a lot of nausea financially or institutionally for us to do and you know, my kids were able to pull that off.

Then we turned it over to the fire department.

So, once we were able to do that, what was really critically important, was that because I worked in an elected office, I knew we were turning into a pumpkin on December 31st, 2013. Right? There would be a new administration. Who knew what they were going to do. So, a huge part of the strategy that we engaged in was to build an analytics culture at the agency level. Because there's always going to be a fire

department, there's always going to be a buildings department, there's always going to be a small business affairs department. Whatever, they live. They will live on. So, if we could build analytics capacity at the agency level, then it wouldn't matter who the Mayor was, right? So, in this instance, with RBIS, it was critically important not only that we show that they have what they needed to get risk based, but that we build up a capacity at the fire department, so that they could take it over and do it themselves. They know their own data much more thoroughly than anybody from the outside, but we needed to get them to build an analytics unit that was directly answerable to

The operations division. In other words, like an intelligence agency that was being used by operations to allocate resources. So that it can continue, and grow, and be dynamic and reflect the diversity of their challenges. That was frankly the most effective thing we did. It wasn't tweaking the algorithm, and it wasn't not making the perfect the enemy of the good. What it was was kind of saying here you go, leading the way, now you take it and go fish and feed yourself.

STEPAN: Let's just go back and tell me a bit about the history of the fire department before this whole big data initiative. You had an agency that was really good at what it did, right?

FLOWERS: Yeah. So, one of the challenges, working with New York City agencies, quite frankly, was the agencies are fantastic at delivering the services they deliver. The Department of Sanitation, what I saw them do during Hurricane Sandy, they removed one and a quarter million cubic yards of debris inside of 30 days. They removed it so fast from the streets that the Corps of Engineers was playing catch up... In the instance of the fire department, the fire department responds to, I don't know, something like 2500 structural fires a year in a city with a million structures and roughly 90 people, I think it might be last year, the number might be lower than that, died in those fires. That's amazing in a city of a million structures with eight and a half million permanent residents that swell during the business day and weekend nights. So, actually getting them to change how they do business, without impacting that excellence negatively, is a real challenge. So, what we wanted to do was say, look, we don't want to alter how you fundamentally do business because how you fundamentally do business is fantastic. It's fantastic; it's a model for the rest of the country. What we want to do is show you how you can continue to do that or better, because our numbers keep going up; our population continues to grow. More cheaply. More effectively. Using your resources more impactfully than current. Because frankly, the name of the game at the end of the day in fire fighting is really more about prevention than it is about putting out the fire. As aging housing stock leaves; that's taking a while. We still have a lot of old buildings in New York City, but as the buildings get torn down, the older buildings, and the newer buildings that are in place that have fire suppression, significant fire suppression systems, then putting out the fires is going to be less and less frequent. They're just going to happen less. That doesn't mean they don't happen, but they're just going to happen less frequently. So, the name of the game is going to be in prevention. So, for the fire department to change with the nature of its landscape, the buildings and the people in the city, they needed to move towards something that leveraged information more effectively to do that. Does that make any sense?

STEPAN: It makes great sense. So, you have an agency that's been around for 150 years. What were some of the challenges, initially for IBM and then, later on for you? You guys are the outsiders. You guys are the geeks. You guys are the guys who are coming in, who don't know anything about how things should be done. What are, for example, were there cultural challenges? Are there always cultural challenges, if you don't handle it well, for an outside analytics, be it IBM or you guys?

FLOWERS: I think the challenge in the fire department is, you know, they have a robust culture, so it's very tribal. But there are clans within those tribes and they battle each other too. If you look at the fire department, you've got operations, prevention, a number of different units. Apparently they don't get along either, with each other. They circle the wagons when an outsider comes in though. Very effectively. So, the challenge is to understand that landscape, before you start bigfooting around, telling people what to do. That's not to say I don't want to tell people what to do because I want people to like me. There are plenty of people that don't like us. The issue is if you want to be effective. So, I think IBM's challenge was, to a certain degree was there was one division within the fire department that was sort of supportive, and they didn't bring along. What they failed to remember, frankly, is that firemen fundamentally hate inspections. They hate them. They really do. If you talk to firemen in the street, they despise having to do inspections, because they're like I'm here to fight fires, I'm not here to look through somebody's kitchen cabinet. I don't blame them, but the reality is that these inspections have to be done, but they didn't even, they didn't embrace that. They didn't, I think, do a deep dive on FD culture, that was needed to do that. Moreover, there wasn't the top down mandate, initially. For those projects to succeed, the executive must lay hands on the project publicly and forcefully, saying we are doing this. If somebody gets in the way, they'll be ripped out. We will make you pay. We will make you suffer if you get in the way of this project. That's not being nice, but that's what people need to hear. They need to hear it in various ways. OK, it doesn't necessarily have to be fascistic, but you have to set the tone from the top; this is something we wish to be, so I am now laying hands on whoever to go, to be empowered to do that within the agency, so when the problems and the hurdles invariably arise, like well, we're having difficulty getting data from X or Y, or I need greater bandwidth from the IT people to build this new warehouse and they're not returning my calls or whatever. Somebody's got to go in and make that happen. You have to make that happen. In fact, if you're effective, you probably don't have that many friends, because you're the one who's busting down those stovepipes, those operational stovepipes. So, you're sort of, so it's this really interesting mash up of respecting the culture, because you need to tailor the product to fit within that culture, but at the same time, making command decisions when necessary and some command decisions must be made. It's difficult for government to do. Government is built on consensus in many ways. People's default mode is to govern by consensus. Frankly I'm not a big fan of consensus. What's been effective for us, what I saw really good, the good stuff that happened, had a lot to do with rather doing things that benefited everyone. So, it's good for you, and it's good for you, and it's good for you, so that's the way we're going to do this, where everybody wins. But imposing that to a certain degree. Kicking over the hurdle instead of trying to get everybody to agree. Because I think a lot of people aren't interested in the internal transparency that comes from a data driven approach, because you are going to upset the apple cart and they're quite content with the way the apple cart currently is.

STEPAN: So, let's talk about this. That's one of the challenges; transparency does shake things up and suddenly it's everywhere. Is transparency not generally popular because of this?

FLOWERS: I don't want to make that blanket statement; I think it's very popular with some and not so popular with a few.

STEPAN: So, let's go back and talk about transparency.

FLOWERS: So, transparency, right, when I say transparency I think, when people hear the word transparency I think they think in terms of NGO's or good government groups. I think that's very valuable and I think they serve an important function, especially in a democratic society. But what really matters to me is transparency between government actors. I think there is no legal reason that the fire

department shouldn't have direct access to what the Department of Finance knows about the buildings the fire department has to go into and drag people out of while they're burning. That's infuriating to me. So, what I think is necessary is this internal transparency between government actors. Now, there are some, you mentioned CompStat. CompStat's a really good example because it was the initial effort at transparency. It was wildly effective. But there were losers in that system. There were precinct commanders who, under the old system, ran the place like a tsardom, and they lost that power. Well, too bad. You lost that power in favor of the City taking the homicide rate from 2200 human beings a year to under 400 this year. So, I'd rather have 1800 more human beings alive than dead, and a couple offended precinct commanders, than the reverse.

STEPAN: Under you and under the last part of the Bloomberg administration, there was maybe something new, some people call it open government or "government 2.0." It's a new world. Everyone's got Facebook; there's this ability to crowdsource. Let's talk about that next phase. Did Bloomberg try to do more with transparency in the world, with the citizens?

FLOWERS: So, one of the ways, the Bloomberg administration, again before I got there, started something called the Open Data Initiative. I think a lot of government actors take a lot of credit for open data and the open data movement, as well they should. I think it's a wonderful movement. But I think New York City was the first city, maybe beat the feds, I'm not sure, but it was the first city to really take a robust approach to it. What it really means is taking the data that is generated by the activity of New York City government agencies and putting it online, and making it available to the public. It's a very simple concept. I think, people conflate open data with transparency. That's not true. Open data is not insight. Open Data simply echoes of what city government does as reflected in ones and zeros. Absent an understanding of the process behind that data, then you can't really leverage it effectively. However, it's an extremely powerful tool, because what it does, those key performance indicators that I was describing, there's not a day that goes by that I don't read the paper, the Daily News... or even the Times, where they're not citing some stat that they gleaned from the Open Data page. The de Blasio administration has a stated goal of increasing the number of pre K seats, an extremely laudable goal. What will be interesting to watch, at each of these locations they pick, what's their citation, what's their violation history for safety issues? The Daily News did a really interesting study on pre K seats over the last couple of years and found a number of actors that were in extreme violation for public safety violations. Where I found transparent, open data and transparency to be most helpful, was ensuring that the internal transparency we imposed doesn't go away. Right? Because we've now created this political expectation among the public that this information is going to be freely shared, and if you freely share it with the public, then you might as well freely share it with each other. I mean, why would I silo myself off in the fire department if I've already got to publish it on our Open Data page. So it's an extremely effective management tool. I don't think people ever saw it that way, but that's what I saw. I mean, like I said at the beginning of this, the first thing that we had to do was bootstrap, meaning we had to use what we had available to us to prove the concept, and then we get better about using our information. Our biggest Lego was our open data page.

STEPAN: It's that basic concept, that ancient Greek idea of democracy; you have a town square. You have a place where people can go and exchange information. You can't do that in a city with millions of people. But maybe these new tools are allowing people to crowd source solutions, allowing people to, is that kind of what's going on, when, is that kind of the motivation behind, the sort of 311, or people saying, well this is a pothole on my street, or this is a, here's a solution to my neighborhood problem. Is there a bit of this desire to change how democracy works?

FLOWERS: I don't want to speak so globally like that. I really don't know. What I can tell you is that any efforts that allow us to listen to New Yorkers, from the New York City government's perspective, is a good thing. I think we have to be careful about how much we rely on some of the methods that are used to listen to the public when it's complaining. As an example, if we were going by Foursquare only, then we would have evacuated Times Square. My grandmother's 85 years old, and she has the most basic understanding of her AOL.com email account and she would never have surfaced, and she's the lady I've got to get to most quickly, because she's the one who needs the help. So listening solely to social media sources I think is a risky endeavor. That said, because the city, unlike a private sector agency, we can't pick and choose our clients. We have obligations to everyone in this city and social media is to a certain degree, a selective intelligence. That said, if we think of it the same way we thought of the city problems, if we think of listening to the citizenry and engaging them more effectively as just layers, right, as opposed to not saying Twitter is a silver bullet, Foursquare is a silver bullet, Facebook is a silver bullet. No, none of those are silver bullets, but layered together with other pieces of information that the city collects at taxpayer behest, then it can be extremely powerful in terms of getting our resources to them most effectively. I do think that there are crowdsourcing solutions available to us, especially in the field of cleaning up our very dirty data. I've been to hackathon's where I saw a team of people fix a problem that was vexing people within the city for months and months and months, and they fixed it in a 48 hour stretch. So, that's really powerful and that's wonderful engagement too.

STEPAN: Let's talk about hackathons. Let's talk about some of these app contests.

FLOWERS: So, I think a hackathon is really less about what product comes out of it than getting people to actually dive into city data. I think hackathons and open data and things like that, they have economicals, like we'd like to see businesses come out of this to the extent possible, although I'm not sure that's, I don't know whither that goes. We want to encourage people to actually read the data and look at the data or leverage the data that we're actually spending taxpayer money to put out. I mean this isn't cheap. You have to pay for back end systems to put the data out. So, we need to justify that, and we justify that by having the public engage with the data and use it in their day to day lives. But one thing it does is that crowdsourcing function you were mentioning. If we can bring into government a class of citizens that had not previously been engaged with government, then inherently the government's going to become more effective, more attuned to the citizenry...It used to be when people think about who's going into government, you thought about, I'm not trying to mock myself, but you thought about a lawyer, or somebody who went to, who was a poly sci major, and decided OK, I want to be involved in government. I'm a policy wonk, if you will. What's interesting about hackathons and open data, and overall increases in transparency, is that you're sort of turning that on its head. When I went out looking for hires for my group, my unit, I went on Craigslist, and I looked for econ majors who had no background in government. That's what I was interested in. They turned out to be some of the most effective government actors that the city's ever had. So, what hackathons enable, and what open data enables is for us to tap into that category of humanity in New York City, and say listen you too can help us govern ourselves more effectively.

STEPAN: The last question here. Twenty years from now, ten years from now, when you look back, when you look at what you did now,what are people going to say? Will it be obvious that all of this should have been the way things work? Could you give me future thoughts about what the next step in all this is?

FLOWERS: I have no idea. I mean, I think most of them will sit there and say, God, Mike was a prick [LAUGHTER]. But my guess most of the greatest victories that we had inside city government, were things when I told my mom about them, her response was you mean you're not already doing this? So, I think people, you're not already? I think it surprises people just how fractious and fractured local government can be. It's not just local. It's state and federal too. People look at government and they think it's a monolithic entity, when that's not true at all. It's a cat herding exercise. So, when I think about the future, I actually think maybe government may come into conformance with what people's expectations are from their government. It would be great if it weren't amazing that taking information from one government agency and using it to help another government agency wasn't such a wonderful thing. I hate that that's novel. I want it to be not novel. So, I think five, ten years from now it won't be novel. It'll be common sensical.

[END]

Interview with Stephen Goldsmith on February 24, 2014 at Columbia University

Interviewer: Adam Stepan

STEPAN: [OVERLAPPING VOICES] Let's start off. If you could just introduce yourself and your connection to Indianapolis and also the Bloomberg administration.

GOLDSMITH: My name is Stephen Goldsmith. I'm a professor of government. I served three terms as an elected state attorney, district attorney in Indianapolis, two terms as mayor of Indianapolis, a couple of years as deputy mayor of New York, and some time in Washington running [community/committee?] and national service for Presidents Obama and Bush.

STEPAN: I'd like to go back a little bit to your time when you came in the Bloomberg administration and it was a moment of budget constraints. It was also a moment when a lot of exciting things had been done in terms of using data to think about city services. What were some of the challenges that you faced at that time and what was some of the thinking going into the solutions you came up with?

GOLDSMITH: New York City government has worked well for the last 20 years, going back to, as you said, the beginning of CompStat and Rudy Giuliani and Bill Bratton but, when I came in as deputy mayor of operations, the city's budget was very stressed. The economy was mediocre in the country and high quality services were being produced but they were being produced at reasonably high costs that I didn't think was sustainable. So, we looked for ways to increase the efficiency, productivity, effectiveness of government.

STEPAN: Can you talk about "big data's" role in that planning?

GOLDSMITH: I think one way to think about the evolution of what's going on is that we started some time ago, let's say, pre Compstat, without much measurement of performance in city halls, city bureaucracies, state governments, and the like. Then, we moved to measurement but much of that measurement was measurement of activities, how many arrests did you make, how many shelter beds did you provide? They weren't measurements of outcomes, they were measurements of activities. One of the problems with this is that, in any single agency, the answer to the problems of that agency may be in somebody else's agency.

One way to look at this, I was trying to use data for the following reasons, one, to identify big solutions in advance, to organize the way we delivered services, to cause the agencies to work together, to become more productive, to nominate and identify the outliers. The use of data was designed to improve the quality of service, the personalization and customization of the services, and the cost per service provided.

STEPAN: You are well known both as an academic and also as a political leader in making innovation happen in all things public service, which is not an easy task. How does that connect to your looking at big data?

GOLDSMITH: New York City is a very difficult place to innovate operationally. Mayors Bloomberg and Giuliani innovated in big, bold ways, particularly Mayor Bloomberg, by thinking of big policy

announcements, big changes in the way we did business, solutions to poverty and the like, but if you look at how to drive innovation up and down throughout government, New York City is a very difficult place in which to innovate.

It's got a couple hundred unions. It has a couple thousand job classifications, it has people working in very narrow silos. It's got lawyers and consent judgments chasing people around for liability purposes, very difficult to unlock productivity, efficiency, and value inside the operational. There were two ways, multiple ways you could think about data, but one was, OK, let's look at data in big policy ways to figure out what the drivers are of poverty or homelessness or street crime or the like.

There was a fair amount of innovation around those big goals. The innovation inside the operational side, how to pick up the trash better, how to police better, day to day, that was much slower going, chopping your way through a thicket in the jungle late at night with lots of problems in front of you. Data unlocked some of the answers, but the implementation was more difficult.

STEPAN: Talk a little bit about Bloomberg and your role, you were deputy mayor for operations. Bloomberg brought his background. I guess his famous quote is, "bring me the data." His background in research analysis, did that fundamentally change the type of mayor he was and how he broached these issues?

GOLDSMITH: Sure, we have a data driven mayor, so it's easier to make a case that you should have a data driven government but there are a range of obstacles here that were involved. One is, I was beginning as deputy mayor relatively early in the public sector's use of big data and predictive analytics, not so early in corporate America, but relatively, maybe New York was the first city to actually pay close attention to this.

Trying to set up the structures to use the data better was a much more difficult thing. The good news is, Mike Bloomberg is deeply committed to performance data and he is deeply committed to making government work better. The bad news is that that commitment sat on a structure that was very outdated and very antithetical to collaborative big data as contrasted to small data inside the agency.

STEPAN: Making the connection to what sort of problems people were facing in the earlier CompStat period, it was a time that information was made available annually too late to actually be used in management decisions. Talk a little bit about the big breakthroughs that CompStat represented and then, by the time you were here in New York, it was a different set of issues, wasn't it? It was issues about, perhaps, customer service, about listening to and looking at citizens as clients to a certain degree, perhaps people talk also about crowdsourcing solutions. Where were the big moments there?

GOLDSMITH: What's happened in the last year and a half to two years in government internationally is enormously significant. I have been at this for three decades. This is the most important couple years ever because you have everything coming together. You have cloud computing which drives down the cost of acquisition of sophisticated solutions. You have, essentially, every field worker with the capacity to have a handheld device, real time data, actionable data, at the scene of the crime or the problem or the child welfare problem.

You have social media which means that broad arrays of individuals in a community, New York City, can communicate or complain or tweet about a very significant problem or not. You can mine that data and identify it. We have ways to personalize the delivery of services. You have huge transformative events in data and the ways data are generated and the way data can be mined and you sit that inside fairly traditionally organized hierarchical command control government.

You have the ability to unlock great value on the part of the public worker but we don't actually have the ability to let him or her to do that. It was that struggle. You go back to Compstat, which was a breakthrough because it used data to measure performance and you come up to today. The amount of data is enormously greater. It is more illustrative, but it is much more difficult to put together because it is sprawled across multiple agencies.

STEPAN: That's a question of overcoming... and how to make agencies work together. In this case, we are also looking at some agencies that followed in the footsteps of CompStat, applying in their own world some of the same metrics and solutions. The fire department, for example. What were some of the things you worked on this issue?

GOLDSMITH: I went into the fire department. Bill had started this project before I was deputy mayor. I went into the fire department my first week, actually, and talked about how they did business. One of the things we discussed is how they inspect buildings. Some of this conversation was eight or nine people around a table and I am at the table and I have done some work with fire departments and, how many buildings do you inspect a year.

Well, we have about 400,000 we are supposed to inspect. I may have got the numbers off here a bit. How many do you get through? We get through most but not all and then the year is over and we go back to work. So, this obviously is not the way one wants to go about their work but it is the way that government traditionally works. Somebody calls and there is a complaint. You investigate the complaint. You have a list of things were supposed to do. You go to those. You start at A. You try to get to Z. if you don't get to Z, you run a little harder and see if you can get to Q or wherever you can get to.

If you said, wait a minute, this is not the way government should work. Government should identify places where it can make the biggest difference, families that are most likely to have abuse, buildings that are most likely to catch on fire, intersections that are most likely to have a pedestrian hit, fill in the blank. So, driving change, and we saw that in the resulting situation where that building burned down and Mike Flowers did the analysis for us.

The data that identified which buildings are most likely to burn down isn't just in the fire department. It's in the tax department. It's in the buildings department. It's in the planning department. So, crossing over that data and mining it despite the obstacles, the technical obstacles in those departments, is the future and was the future at that time.

STEPAN: How do you do that? As a leader, what are some of the things that you can do to break down some of those barriers?

GOLDSMITH: I have a project now, looking at how to break down those barriers. The barriers are not technical barriers. The chief information officer of an agency may assert that they are technical, this is my

data, this is legacy data, this doesn't talk to anybody. That's just not true anymore. They don't have to put all those databases together. You can mine the data. The issues are collaborative issues.

Every agency would say to Mike Bloomberg, every agency that I have advised in my consulting work around the country will say, yeah, we really need to do that. We're happy to cooperate, but then they leave and they come back and go, this law won't allow us to do it. This technical system will allow us to do it. We don't have anybody to assign to that project.

The definition of solution here is leadership. It's leadership. Driven from the top, organized from the bottom up, but driven from the top, horizontally, across the agencies, where you say, what are the big questions of today that will allow us to solve problems in advance, produce services more effectively, that's what it's all about.

STEPAN: You were part of the creation of 311. Is there a move to a more interactive government with sharing information? Like you say, there is a very different public now. It is a public who has a lot of programs and apps. They want to have access. They want to help. Is this also a big part of what government needs to think about in terms of how it is related to the citizens?

GOLDSMITH: Right. I created one of the early integrated contact centers in Indianapolis a couple decades ago, one number for people to call. Then, New York City created the grandest of all in this 311 system, a system where 20 million New Yorkers call each year for information or to register a complaint, very sophisticated when it was built. That model is totally outdated today because, if you think about it for a second, there's a whole bunch of things wrong with them.

What's right about it is a single point of entry for city services. That's a big breakthrough. What's wrong about it is it assumes, A, that people have to call to register a problem, that government can't figure out about the problem before somebody complains about it. It assumes that every caller is discrete, that if four people from the neighborhood call in about a problem, that maybe they should know who each one of them is. It assumes that people make phone calls instead of tweeting or SMS, short texts, or the like.

New York City and Chicago today have, in process, new 311 systems. The way to think about this is call center to platform for community engagement. Closed data, open data, transparency and engagement around the solution to a problem, totally new model. Personalization, why can't every New Yorker register for outbound information on the services they want in their communities? All that's possible and that will be the future.

STEPAN: How does this connect to future democracy? I know the mayor of Rio, for example, talks a lot about...in ancient Greece, there was a town hall where people were able to exchange ideas but, given the huge cities nowadays, it's not possible. Is this opening up a new realm for people to engage?

GOLDSMITH: No, it's opening up an old realm. Really, if you think about it, the true definition of democracy is participation. Life is too complicated. There's too many people now in New York and other places. You can't have 8 million people in your town center, but you can, really, through digital media. You can mine the media. You can organize the conversations. You can make it more collaborative. People can interact with each other. 311 can become a platform and not just a place to complain.

We are at a whole new place in terms of community engagement and the expressions of democracy. If you think about it, a government operates on the trust of its citizens. If its citizens begin to believe that their voices are not heard and their problems are not responded to, they will lose trust in their democracy which will affect the whole nature of democracy. [Rio?] has been a leader for a long time, actually, in this regard. New York City is a leader and this is going to be a very important change in the way bureaucrats interact with their residents.

STEPAN: Going back again to Bloomberg What was the team that was put together to think about big data under Bloomberg? What was some of the thinking behind bringing in people from a couple different backgrounds?

GOLDSMITH: The New York City model was kind of interesting. I tried to create a data analytics center that was set up in the mayor's office and run for operational purposes and policy purposes. Linda Gibbs tried to set up integrated data for social services. Both of those were problematic because the agencies were not quite ready to cooperate and because there wasn't actually funding to do some of those things. It is maturing today.

Chicago is a leader in terms of a data analytics center. What Mike Flowers did, and his small group, was driven from experiences in law enforcement coming forward, they just started doing it. They basically said, you want to solve a problem, give us your problem, we'll solve it. You say you can't share the data, we'll go get the data.

The interesting story is, if you juxtapose New York and Chicago, Chicago has a data analytics center under the leadership of the mayor, driving data and data analytics throughout the department. New York has a group of really smart people sitting at City Hall, solving problems that others say they can't solve. It's kind of its own, as Mike would say, its own skunk works.

STEPAN: Sometimes you just want to go do it. They went off and were able to find some connections.

GOLDSMITH: Yeah, they are working out of the mayor's office, so people answer their telephones, but they basically figured out ways to get data and solve problems and didn't pay much attention to process.

STEPAN: What were some of the more surprising things that they were able to turn up?

GOLDSMITH: Essentially, the data movement is going to transform every agency. The group that manages the Carters, the people that pick up trash, that used to be dominated by organized crime, now have identified problems in advance, who is using unlicensed drivers, who is disposing of their rubbish illegally. Mike has looked at not only which buildings are going to burn down but the finance Commissioner looked at people who were underreporting their taxes that nobody had identified before. So basically, the problems are everywhere. The solutions are everywhere. It's just a question of getting people to think about, we can solve these in new ways.

STEPAN: In terms of transparency and presentation, there's obviously legal issues about privacy. As government, you have access to a lot of data that has personal information. How much do you work to prepare data to make it public?

GOLDSMITH: The problem with the open data transparency initiative is it is not visualized enough and usable enough to help communities actually engage. That's one issue. Another issue is, how do you, what do you do with the information you get? I think people are comfortable with cities taking a lot of information, but that information needs to be anonymized. We need to take out the personal identifiers to figure out how to solve problems, how fast people are driving or the like.

You do have, then you have, obviously, the option that many people will exercise, particularly with the new 311, that they will opt in to register their data for purposes of receiving personal information back from the government, but in the end, there are some trade offs. There are some privacy trade offs and people have to work through them very carefully. The benefits are great and the risks are not insignificant.

STEPAN: Was the budget crunch you faced in 2010 did it also help you? Were you able to actually show the ways in which you saved money using this big data because I'm sure there was a lot of pushback at the time? Sometimes, is a budget crunch something that helps innovation happen?

GOLDSMITH: I've been using data to reform government for a couple decades. I've been using data to reform government for a couple of decades. We use data to improve collections for child support, from 900,000 to 38,000,000. When I was mayor of Indianapolis, we put services online very early. Anything that says innovation has to have a technology connection. If you go into a tough budget time, there are however two different sides to that.

One is, look, we can't continue to do things the way we've done it because there's just not enough money to do it. That is an incentive for change and innovation. The other problem, and the problem that I had in New York City, was OMB going, it's going to cost money to do this. It does cost money to do things and that allows you to save money fairly quickly thereafter. The bigger problem, I think, is not lack of resources. It's the reallocation of resources to the front end of the problem in order to save money downstream. That's the issue that faces most government innovators.

STEPAN: That's a classic problem. Were there some early wins that were able to show people the benefits of making the initial investments?

GOLDSMITH: Right. I think that the place to most dramatically make those victories clear quickly is where there is dollars attached to the effort. So, identifying underreporting tax filers, identifying people who pretend to live some other state or country but actually live in New York and are subject to their jurisdiction, to identify waste, fraud, and abuse, there are dollars associated with those. Then, you can move those dollars to areas of a better response.

In the area of child welfare, where Indiana, actually, has made some substantial advancements, New York City is about to. You not only have better outcomes for kids who are in trouble, but you have a better allocation of available dollars to help those children, which programs are successful with which children, but the early stages, it's always a fight with the budget group.

STEPAN: Where do you see this going? What are the big issues, the next generation issues?

GOLDSMITH: First, just in case you find this interesting, there are problems everywhere that can be solved. Early on in this process, I took a group of Columbia capstone students, said, take our 311 data and solve some big problem and help me breakthrough and show how this can all work. We looked at roadways that flooded or iced over when there was substantial rain.

These students went out and took rainfall, they took data on tree foliage, they took the maintenance records from the department that maintained the gutters along the streets, they took the type of grate that was a long among the top. They took all of that together and predicted to me, when we get more than X inches or quarter inches of rain, these are the areas that are going to flood and here is how you can solve those problems.

Essentially, then we had a list that we could, instead of responding to flooding or responding to an accident, we just went and solved the problem. I think what you are about to see is this viral effect on agencies that will transform the way they do business, from manufacturing the same widget, day after day, to identifying the outliers, refocusing the resources, and solving problems before they occur.

STEPAN: Wonderful. I'm going to shift gears. We took the liberty of putting your presentation here... What was your main objective?

GOLDSMITH: It is great to have government employees perform better, but it is totally insufficient. What we need to think about is governance, how a network of providers solves a problem for profit, NGO, or nonprofit, and government, how you bring those players together and how they operate in what, I'd say, is a horizontal fashion instead of the vertical fashion in which the agencies are located. Governing by network and the question, here, today is, one, let's think horizontally instead of vertically.

Two is, a very high percentage of public services today are provided by private and NGO players, not by government. They are provided under contracts with government, often, but they are provided in different sectors. How do we put together a network of players and drive performance across those players. The last is obvious to anybody in government today, that they have more problems than they have money, so they are going to have to operate differently if they want to succeed.

STEPAN: What are we seeing in this slide?

GOLDSMITH: There is a frustration with big government because it seems so impersonal and it seems so nonsensical. They are the definition of red tape and waiting in line and filling out questions that seem totally irrelevant. Government is organized for its own benefit, different agencies, different divisions. We see, at the bottom, a citizen looking up with a problem could easily face 10, 15, 20 different government agencies. You want to open a restaurant in New York City? Fifteen, 12 to 15 agencies, each one separate.

We are suggesting that there is an opportunity here with data and social media and other technologies to rearrange government around the citizen. Let the citizen demand, just like he or she does in their corporate life, if they are going to order from Amazon or whatever, let's personalize government to the citizen, not the other way around.

STEPAN: What does this slide show?

GOLDSMITH: Basically, we have a citizen looking up at an array of agencies, bureaus, agencies, departments, going, you know, I need to do something a little bit complicated and I have to pick one from this column and two from this column and three from this column. Then, I have to visit them in the right order because, if I get them out of order, department three will send me back to two or whatever. This is just not a responsible or reasonable way for government to operate.

STEPAN: What are we seeing here?

GOLDSMITH: If you really want to innovate, a good place to start was, what is it we were trying to accomplish? What is the public value that we're trying to create? In that particular slide, the question is, basically, from Washington DC, when Mayor Tony Williams was mayor said, you know, we all have a public hospital. What are we trying to do with our public hospital? He got his team together and they said, we'd like to be the best public hospital in the country.

He looks at them and he goes, that's not what we are trying to be. We're trying to provide the best public health in the country, not the best public hospital in the country. The hospital may be part of it, but it may be a much smaller part of it in community clinics and preventative activities may be a greater part of it. The threshold question is, what is the public value you are trying to create, not, what is the activity you are trying to accomplish.

STEPAN: Issue two, data driven innovation, what are some of the things, the key takeaways there?

GOLDSMITH: I was sitting next to Mike Bloomberg one day in City Hall. I said, I have the best innovative idea. Remember, this mayor is a big thinker. He said, what is it, thinking I had some great idea, I guess. I said, we're going to eliminate paper in government. It's like, I saw this look on his face like, is this the best you can do, but the theory I had was that, once you eliminate paper, and go to digital systems, you transform the business processes of government radically.

Think of the guy who takes his piece of paper from agency 1 to agency 2 to agency 3 to agency 4 and then, in that agency, somebody looks at it and then passes his file to the next person. In a digital world, not only can we mine the data to figure out who the good contractors are, who are the bad vendors, who are the good restaurants, but we'll have the ability to have public employees work on the same file concurrently and identify important issues in that file at the same time. It will totally transform the way we work.

STEPAN: Let's talk about data analytics.

GOLDSMITH: We have, today, with the amount of data that's available, if we mine it and look at it correctly, the ability to predict problems and solve them in advance, whether they are problems with a young adult who is in a violent situation and need some therapy, whether it is which crosswalk somebody is going to be hit at, whether it is the next building that's going to catch on fire. We are suggesting that we can predict, with data, the high risk situations and we can go resolve them.

We also can look at, what are the root causes of some of these problems. Why is violence in this area so much higher than in other areas or what factors correlate with success? We can evaluate providers of services. We can evaluate neighborhoods. We can figure out root causes to problems, and we can hold

employees accountable for results instead of accountable for inputs. The data totally changes, should change the way government operates.

STEPAN: We are looking at structure and processes for more effecient government.

GOLDSMITH: Basically, for this breakthrough to work, this data driven breakthrough to work, the leader, the governor, the president, the mayor, the minister of the interior, needs to say, we're going to use data to change the way it works. I'm going to put somebody who reports directly to me in charge of this initiative. That person is going to run a management Council. That person is going to make sure the data is integrated. That person is going to make sure that we are asking the questions. What I'm suggesting in this structure is that it needs executive leadership on the technical side and on the policy side as well.

STEPAN: Can we go through some New York City examples?

GOLDSMITH: As we look at data across the agencies and we look at data from outside organizations, then we can unlock value. So, the Mike Flowers example, when a family died from a building that was illegally converted and we checked with the fire department, the buildings department, they each had tens of thousands of complaints. They are just working through those. They are able to look at the data to determine which of those buildings is most likely to burn down. We identified three or so hundred buildings and we went and resolved them, either moved people out or fixed the buildings.

When the very creative finance Commissioner of New York City, David Frankel, looked at his responsibilities to collect revenue on which the rest of the government operates, and we had this conversation, how do you do this. We send out bills and then we nominate cases for the auditors to go look at to see who has paid their taxes correctly. How could we produce more income? Well, we could do a better job of selecting the cases that the auditors look at. What are the risk factors that would identify who needs to be audited, who is underpaying their taxes, who is claiming the out of state residence? We used data to drive 27, 30% increase in productivity of those auditors, for example.

[HH Connects?] the deputy mayor of social services, Linda Gibbs, said, really, why does a person in need of services have to register separately at each one of these agencies and, by the way, what are the factors, if we looked at them, that would help us reduce poverty, would help us lift somebody up in terms of educational attainment. [HH Connects?] used data to identify those drivers as well.

The business integrity group, instead of just sending inspectors routinely around different places, used the data to identify who didn't have a license, who had the wrong type of driver, who had the wrong type of grease trap, who did the wrong type of whatever. We took all the data to small businesses and restaurants. We looked at the data in terms of how they are to dispose of certain substances, and targeted those where it was clear there was a problem. Data can unlock thousands of opportunities to make government more efficient.

STEPAN: What about using data analytics and social media mining?

GOLDSMITH: What we don't want to do with big data is create an even more arrogant group of professional bureaucrats. We want our bureaucrats to be professional, but we also want them to engage

in the community. Social media allows us to determine what customers, meaning citizens, think about our services and suggestions about how to make them better. Washington DC, for example, is minding the social media to grade its agencies on customer service, making that part of the scorecard, and watching what happens to customer service, which is, it moves up.

STEPAN: We are talking about, in terms of analytics, integrating two approaches, enterprise data and digital community participation.

GOLDSMITH: You have all this data inside your government agency and you have all this swirling data inside your social media group. How do you bring those together? How do you say, here is what the community thinks of a problem in their community. Here is what our data shows you about the number of complaints we have in the work we've done. Let's look at the overlap of those to see how we can make things better. How does a community, responses driven, by a democratic system inform the bureaucrats and their allocation of priority? How do we measure the results? It's the overlap of those two that brings value.

STEPAN: What's the program and are regular meetings important?

GOLDSMITH: New York City and other places, going back to Compstat in New York City and [Citystat?] in Baltimore and the state of Maryland and others have relied heavily on the use of data to measure their performance but that data, often, is old and that data, often, is activity driven data.

Now, we're looking at real time data, [sensors?] of information, cars that produce information about speed, telephones that produce information about positioning. How do we mine that data to change the way that we operate? Today, we're going to move from a stat program that used to measure activities to one that is predictive, mines data, streams data, real time data, to make real time decisions.

STEPAN: Let's talk about the network approach to government.

GOLDSMITH: When we create a network to deliver services of NGOs, government, and for profit, even, we can stretch the reach of government and we can, one of those parties may have a specialized skill. We may need to ramp up resources quickly. We may need to have more authority in how we reach into a community.

A network, if you think about a network as government putting together that network, obviously it doesn't have to be that way, but if you think about government putting together a network, then it needs to be very careful about how it aligns the responsibilities of the parties and how it gains what it wants to through its network and its procurement policies.

STEPAN: What are some of the factors, speed, flexibility? What are we seeing in this slide?

GOLDSMITH: If you looked at what you gain in the network, one can gain specialized skills. You can gain speed and flexibility because you can bring in resources quickly. You don't have to hire up. You can also reduce your job count when you are finished...When one puts together this network, let's go back, let's assume that we have a problem and we don't have enough resources to solve it. How do we use the resources in government that are available to solve the problem? We can spend those dollars more

effectively and one way we can spend some more effectively is we can look at where third parties can help us accomplish the work of government, maybe more effectively than we can ourselves.

Prisoners getting out of prisons need a set of skills in order not to come back to prison. They need support skills and they need family skills and they need job skills. You have parole officers that follow these felons around, making sure that they comply with their reporting requirements, but the patrol officers aren't very good at job training and family counseling. How does one contract with those pieces, those parties, to provide services necessary to help the felons stay out of prison?

That seems obvious, but when we put together folks who are working with prisoners' families on a social agenda with hard edged parole officers, we often have cultural differences between what we're trying to accomplish at the time. If there is a technical nonreporting violation, does the person go back to prison or not? The message here is, use your partners well, but identify the cultural issues and resolve them early.

STEPAN: Just to wrap up, what are some of the key takeaways, the key elements for success?

GOLDSMITH: Right. We began this discussion with identification of public values. Innovating requires you to identify where you're trying to go. We're not trying to run faster in place. That's not really the goal, or run faster in the wrong direction. We are trying to accomplish something. Identification of that public value is important.

Two, how do we get there? What are the tools that we use to get there? What are the leverage we used to get there? Who do we bring to the party? Which parts of the network do we invite in? Which nonprofits and which for profits? How do we put those together? Then, once we've put together that solution, with that identification of public value, how do we measure it? How do we measure it long term? How do we measure it short term? How do we hold people accountable?

When we do all that, and we identify success, we celebrate the success, and when we make mistakes, because that's inherently a part of innovation, we terminate the program and move on without any recriminations. It takes leadership and it takes public value and takes celebration about the successes and it takes the use of data to hold people accountable. If we can do that, we can change the way government works.

[END]