

In Boston, tracking data to score government progress

December 19, 2015 at 3:36 PM EST

Boston plans to use data and analytics to help improve operations, better measure performance and increase efficiency under a forthcoming initiative called CityScore. A single number is issued daily, measuring how the city is meeting its goals on a variety of quality-of-life metrics. NewsHour's Megan Thompson reports on how it will work in our latest installment of Urban Ideas.

MEGAN THOMPSON: It's 6 a.m. on a Thursday morning at the headquarters of Boston's public works department. Danny Nee – who's in charge of making sure Boston's streets and sidewalks stay clean and in good repair starts the day by logging onto a computer application called "Clean."

DANNY NEE: This is what I'm responsible for on a weekday, Monday through Friday. I have kind of from Mass. Ave. through the North End.

MEGAN THOMPSON: Just a few years ago, Nee's garbage truck drivers had to look inside each trash can to see if it needed emptying. Not anymore. About one-third of Boston's trash cans are now equipped with solar panels and sensors – green means empty, red means full.

DANNY NEE: Out of 416 components, 64 are ready for collection. It just makes for a much more productive day, it's just you're going right to the specific units, and you're done.

MEGAN THOMPSON: This is one of many ways the city of Boston is using data and technology to operate more efficiently and better serve its residents.

MAYOR MARTIN WALSH: I find data is an opportunity for us to bring better services to the people of this city and to deliver on a whole bunch of different areas of the city government.

MEGAN THOMPSON: Since taking office two years ago, Boston Mayor Martin Walsh has made using data and analytics a central part of his administration. Some of these projects started during the 20-year administration of Walsh's predecessor Thomas Menino ... but Walsh and his Chief of Staff, Daniel Koh, wanted to take it further.

MAYOR MARTIN WALSH: Boston as a city does a good job, of creating services and in different areas. but we've never measured how we do. And we look at year end, and we compare year to year, but what we've done with data is taken it from year-to-year to literally day-to-day.

MEGAN THOMPSON: Walsh has a large data dashboard in his office displaying real time information from across the city — like the number of potholes filled and the number of community center visits. A map shows each neighborhood Walsh has visited this month and how often.

MAYOR MARTIN WALSH: I'm constantly looking at the screen. I'm constantly looking at the measurements of where we were in a day, where we were in a year and looking at it. And it gives me the opportunity to call a department head or a manager or a cabinet chief and ask them why is something so low, why is something so high?

MEGAN THOMPSON: So, from your office, here at city hall, you basically have your finger on the pulse of what's going on?

MAYOR MARTIN WALSH: Every single department, every single day.

MEGAN THOMPSON: Every city commissioner has a data dashboard, too, showing even more detailed information. They were created by the new Citywide Analytics Team – software engineers and data analysts – with \$1.3 million in funding for building data analytics tools.

NEIL KLEIMAN: Cities are accelerating at a fast pace to put data to use. Not just to understand what's happening at the street- on the street level, but also to improve service delivery systems.

MEGAN THOMPSON: Neil Kleiman directs New York University's Innovation Labs and studies city government. He says Boston's use of data and technology is part of a nationwide trend.

NEIL KLEIMAN: I mean, when you think about data and technology, you don't often think

about city governments. This is really something that's been more the domain of the private sector. But cities are learning fast. So, just in the last five years, you've gone from probably zero to about 20 chief data analytic officers that are within city governments and working directly with their mayors.

MEGAN THOMPSON: Boston was one of the first cities to partner with Waze, a mapping app that collects data from drivers about conditions on the streets, like traffic jams or road blocks. The data helps Boston's traffic control center determine whether to change the timing of traffic lights.

MEGAN THOMPSON: And last summer, Mayor Walsh launched Boston 311 an improved version of the city's constituent services program, modeled after similar programs in Baltimore and New York.

MEGAN THOMPSON: Residents can call in to this 311 call center or report issues via the 311 app on their smartphones — anything from missed trash pick-ups to potholes.

DANNY NEE: Potholes are dangerous, they can do damage to your car and everything.

MEGAN THOMPSON: Another app called City Worker assigns a deadline to each job. The goal is to fill potholes within 24 hours. They meet it 80 percent of the time. Danny Nee gets all kinds of requests.

DANNY NEE: The person says, "there doesn't seem to be any public trash cans on Bunker Hill Street. A trash can near the bus stop would be nice."

MEGAN THOMPSON: On the street, nee carries a smartphone and a tablet to keep track of the workload. When his crew finishes installing the can on Bunker Hill Street, Nee snaps a photo, which can be sent to the constituent.

ERICA MATTISON: I've noticed a real improvement in terms of response time from the city, I'd say in the last year and a half or so.

MEGAN THOMPSON: Community activist Erica Mattison lives in Dorchester, in south Boston, and is a frequent user of the 311 app. Even though the city can't fill every single 311 request ... her request for this recycling can outside the local Y-M-C-A was fulfilled within a couple of

days.

ERICA MATTISON: I've encountered a lot of people who feel distrust toward government at a number of levels – whether it's local, state, federal, you name it. So, I think, you know, using data and having responsiveness and accountability, using technology is a great way to build the trust between residents and their governments.

MIKE DENNEHY: It shows that government's listening and government is- is engaged.

MEGAN THOMPSON: Mike Dennehy is Boston's commissioner of public works. The technology helps him see where multiple problems exist – so he can plan better and his crews can work more efficiently, tackling several jobs at once. The city hasn't calculated how much money the increased efficiency saves it each year, but officials say the number of sidewalks repaired increased by 52 percent between 2013 and 2014...and in the last two years, the time it takes to fix street lights dropped from 35 days to 15 days. It's all a far cry from a few years ago when Dennehy's department kept track of jobs on paper, and there was no system to track them.

MIKE DENNEHY: I wouldn't even call it data. It was just, it was just today. It was today's work, and tomorrow's work was tomorrow's work. Now, we're looking back at yesterday's work and hopefully that'll help us do tomorrow's work better.

MEGAN THOMPSON: With such a large amount of data available, Mayor Walsh's chief of staff Daniel Koh began thinking about how to distill it all down to one number – a daily “pass/fail” grade for government performance.

DAN KOH: Our first thought was, “How do we create a government batting average?”

MEGAN THOMPSON: Koh and the mayor were inspired by baseball – and Billy Beane, the main character in the book and movie, “Moneyball.” As general manager of the Oakland A's, Beane used statistics in a new way to make better hiring decisions.

DAN KOH: We realized that we had a number of different variables that any city tracks – arts grants dollars, wi-fi availability...crime rates. And we realized that we could measure how that's trending to our target in each of those areas. And we could take it a step further, we can roll all of that up into a single number that tells us how well we're doing in a given day.

MEGAN THOMPSON: Koh calls the program “CityScore.”

DAN KOH: This is the first time we’ve ever debuted CityScore.

MEGAN THOMPSON: Koh gave *NewsHour* the first look at CityScore – which is scheduled to go live in January.

MEGAN THOMPSON: When we visited, the prototype was crunching data from 18 performance metrics, showing how the city was meeting its goals for each one. Everything from graffiti removal to 311 call center performance to emergency response time.

DAN KOH: And this all rolls up to a single score. Anything above 1 means that we’re exceeding, anything below 1 means that we need improvement.

MEGAN THOMPSON: So, today, CityScore is 1.17.

DAN KOH: Yeah, so we’re- we’re doing well today.

DAN KOH: But you can see that there are some areas that we’re not doing as well in a given day or week that we need to- we need to focus on.

MEGAN THOMPSON: Today those includes signal and sidewalk repairs. The *top* performing metrics are library users, tree maintenance, and fire department response time. CityScore also displays metrics for the week, month, and quarter.

DAN KOH: So, one day may not be a big concern. But if it continues over a week, over a month, or over a quarter, you know that that’s a bad trend, right. So what the mayor can do is tackle these trends when they’re signaling that they’re going bad before they actually go bad. And that’s a real sea change, in our opinion, because I think most municipalities are looking at data maybe in an annual report and not on such a real time basis.

MEGAN THOMPSON: How is it that a single number can possibly tell the mayor what’s going on in such a big city?

DAN KOH: The reality is, just given the mindshare of most public officials, they don’t have the time to be sitting there really digging through the data every day. So, what this does is it gives

him a sense or an indication of where, how we're doing on a given day or quarter, and allows him to delegate to people below him why we're on a course.

MEGAN THOMPSON: As the technology develops, Koh plans to add dozens more metrics. Boston residents will be able to check CityScore on the web and access the raw data behind it. NYU public policy professor Neil Kleiman says no other city is issuing a daily report card like Boston.

NEIL KLEIMAN: And it's not surprising that they would be cautious about data, right? Because data can really open you up to a higher demand for services.

MEGAN THOMPSON: Mayor Walsh admits that at first, he *was* cautious.

MAYOR MARTIN WALSH: If the scores aren't as high as they need to be, you know, we're going to get criticism for it. But CityScore, after thinking about it a little bit, it's okay to get marked, it's okay to be underperforming in certain areas because that gives us the ability to focus on those areas and improve the quality of service that we provide to the public.