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LED BY DATA (PART II)

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Last week we wrote about how data has played a role in our process to both diagnose infrastructure issues and make recommendations about improving infrastructure. This week's post focuses on the idea of data-oriented government more broadly.

You may have read about the power of data, and data-driven decision making. There is a lot of smart writing out there, including books like *Moneyball for Government* or *The Responsive City*, articles like this one or this one that encourage data-driven decisions, blogs like *Datapolitan* or *Civic.io*, or talks like this given by DJ Patil the United States' first Chief Data Scientist.

"DATA DOESN'T MEAN MUCH UNLESS PEOPLE ARE LOOKING AT IT AND ULTIMATELY USING IT TO MAKE DECISIONS."

They all have much more to say about data than I do, but I thought I'd take some of their ideas and apply them to the work we are doing, specifically centering on infrastructure. I'll talk about how the City of Syracuse could use data to put its operations into overdrive, if we did a few things differently.

WHERE ARE WE TODAY

The city actually collects a ton of data. From rating roads, to recording water main breaks, to logging calls for service from the public, data exists about almost everything that the city does. The issue is that many times, that data is not accessible. Those road ratings exist in an Access database on one server, the water main breaks are in an Excel spreadsheet on a different server, the calls for service are in a separate database where the data is not easily exported.

People like Joe Zuckerbraun in the Water Department have basically digitized the entire water system so the city now knows where the pipes and valves are. But other information like the year the pipes were installed still lives in the original field notebooks that were drawn by hand by the engineers who created the system a century ago.

Other information about our infrastructure systems live in people's heads. Crews that have worked in the city for decades know the exact status of any piece of infrastructure on any street. Those people, though, are retiring, and there has not been a system established to document what they know. So, there is a lot of institutional knowledge at risk of being lost, information on paper that is not easily digitized, and data that lives in different places and is not always accessible.

All this might sound bad, but if you asked someone working in virtually any other city around the country, they would say that this is normal. Now it is time for Syracuse to put some new initiatives in place to make some data improvements which will positively affect city operations.

WHERE WE WOULD LIKE TO GO

When data exists in places that not everyone can access, be it in separate servers, on paper, or not written down at all, the city is not able to track its performance. Unfortunately, this is a problem that we can't change immediately. Systems can be expensive, culture change can be hard, and sometimes we might not know the best data collection path to take.

However, there are a few things that could be changed quickly that would have a positive impact on the city and would put us on the right path for the future.

Digitization.

Key to any of the work the City does with regard to data is the effective collection of information that can be easily analyzed. Having data live in someone's head, or on a piece of paper, or even in a PDF does not work well when trying to get a holistic view of operations. It does not allow us to see trends or potential issues that might occur.

As we go through our work, digitization of records will initially mean making it easier for both the staff and community to log complaints through more friendly web portals, and will likely require staff to either use computers or tablets in the field, or direct some staff to enter data from the field into a spreadsheet or database.

Reporting metrics.

Data doesn't mean much unless people are looking at it and ultimately using it to make decisions. Currently, there are not many reporting metrics required of different infrastructure departments. The city should be counting the number of potholes it fills and also tracking the time from when each pothole is reported by the public until it is filled. It should have a clear definition about what a water main break is (believe me, it can get complicated), and then report how many have happened relative to last year, and how long people have been without water service.

It should also look at operations across departments to review how many times a road is dug up even though it was just paved within the last year. These metrics force departments to think about their operations, find more efficient and effective ways to go about doing their work, and work across silos to guarantee that work is being done well - because the data informs them about what needs to happen next.

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Accountability.

Right now, there is not an expectation of how many potholes should be filled each day, or how many water main valves should be tested per month. Assigning reporting metrics to each operation within the city allows crews to know what goals they need to meet and guarantees that superintendents, commissioners, and the Mayor know how much work is being done within the city. Without the metrics and without the data in digital form, this cannot exist.

Collecting this data, reporting on it, and making people accountable for it lets the city know where to hire more (or less) workers, tells the city which sections of Syracuse need additional services, and allows for the prediction of issues that may arise in the future.

HOW THIS WOULD IMPACT YOU

This talk about data-driven government is very nice in concept, but how does it actually impact the community? Some of this work to move to a data-driven government will likely come with costs, be they new data systems, new staff, or new equipment. Obviously, if the government is moving to be more data-driven, the act of taking on this process needs some justification behind it as well.

TRANSPARENCY

With data more easily digestible because it has been made digital, employees will have greater access to the information they need, but so will the public. Today, you might not know the last time your street was repaved, or how long it took to fill the pothole you reported. There are ways to access that information now, but it can be time-consuming and sometimes costly. Many governments make data like this available to the public, for free.

This “open data” allows the public to easily access data and information, it allows staff within the city to work off of the same underlying data, and it potentially even allows people within the community to gain insights about operations within city government that the government itself has not yet looked at. For example, the local Code for America brigade in Syracuse developed this webpage, Eat Safe CNY, using data from New York State’s open data portal. Companies like Zillow also depend on government data which they share with potential home buyers.

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INCLUSION

For decades government has focused on delivering services to the community. Data can be the key to effectively communicate constituent needs and ensure that the community is part of the process.

This means allowing the community to inform the City about problems, but it also means using the city's data to create new jobs or businesses, to inform neighbors about upcoming events more easily, or to even design apps that help improve the overall functions. For example, in Boston the community created the "Adopt-a-Hydrant" app which allows people to volunteer to dig out hydrants when it snows.

EFFICIENCY

Data-driven decision making ultimately comes back to encouraging more efficient operations, which means tax dollars are spent more purposefully on programs and initiatives that meet desired outcomes. Though gut feelings may still come into play when it comes to making a decision, the data will always be there to help inform, and hopefully confirm the decision that is made.

Data can also ensure that appropriate processes are documented, outcomes are known, and work is organized. This will reduce the number of retired staff that are rehired because of their undocumented institutional knowledge.

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This is a big vision that even the largest cities have just recently started to take on. It will take time and patience, but as we finalize our plans to improve the infrastructure of Syracuse, you will see that everything we will recommend will come with a need to improve data collection, monitoring, and reporting. The good news is that this already exists in parts of city operations. Now, we will look to expand it to ultimately deliver a government that is able to better work both with and on behalf of its residents.