

Comments to the City Council Technology Committee

Open Data and the DNS Query Log

by Thomas Lowenhaupt, Director, Connecting.nyc Inc.

June 21, 2010

Good morning. I'm Tom Lowenhaupt, founding director of Connecting.nyc Inc., a New York State not-for-profit advocating for the development of the .nyc TLD as a public interest resource. My presentation is on the DNS Query Log – a soon to arrive database.

Within the next few years the Internet is going to change in a fundamental way - it is going to become more intuitive.

This will happen as the ICANN, the entity that issues new Top Level Domains such as .com, .org, and .gov finalizes its application process. There will initially be hundreds and then thousands of New Top Level Domains (or TLDs for short), with names such as .bank, .sport, and .news.

So the future holds Chase and Citibank moving from Chase.com and citibank.com to Chase.bank and city.bank. ESPN will move to ESPN.sports and the Wall Street Journal will find advantage in moving to WSJ.news.

With this transition people will come to see the Internet as far more intuitive than today and will begin entering their domain name requests directly. So for example, if you're looking for a bank you are likely to enter index.bank or directory.bank. Or if you're looking for news sources you might try categories.news. And information about baseball might be best found from baseball.sports. It's going to be a different Internet, one where our dependence of search engines will be diminished.

In addition to the forementioned .sport, .news, and .bank, there will be city TLDs such as .paris, .berlin, .tokyo and my favorite .nyc.

Getting to today's topic.

Imagine the .nyc Top Level Domain name is fully functional in 5 years. And people have come to recognize the benefit of directly entering domain names rather than always relying on Google. So people learn that it's faster and more direct to enter mayor.nyc, citycouncil.nyc, firedepartment.nyc, and police.nyc.

The operator of the .nyc TLD will connect each of these queries to the appropriate website and create an entry in a Query Log. This Query Log will contain valuable information from a marketing, governance, and civic life perspective.

Let me give an example.

Imagine in 1985 we had the intuitive Internet as I've described it today – baseball.sports, police.nyc...

And imagine the residents of Greenpoint, Brooklyn started entering intuitive inquiries into their search boxes such as:

- Holeintree.nyc
- Spottedbeetles.nyc
- Dyingtreesingreenpoint.nyc

What happens to these queries? If they are for an existing website, people will be directly connected to the site. And I'll skip for the moment the privacy issues associated with that database of successful connections.

But imagine it's a time like 1985 when the Asian Longhorn Beetle had just arrived on our shores. And residents of Greenpoint are entering intuitive inquiries seeking information about the strange developments going on with their trees. And let's assume that none of these intuitive inquiries had existing websites. What happens to these erroneous queries?

We advocate that this information go to an Error Query Log Database, and be made available to all for inspection. So some clever researcher can begin exploring these entries and create a proper response. In 1985 that would have been to inform the Parks Department that there are a number of odd things going on with the trees in Greenpoint. And an inspector could have been dispatched to investigate. In reality it took 10 years before that happened and we now face the prospect of 1,200,000,000 trees being lost in America to the Asian Longhorn Beetle.

So what will the Error Query Log show in the future?

I've no crystal ball, but it could be **the** central location for sensing change in our city, in a twitteresque database controlled by the city. This database should be made available to researchers and programmers on a minute by minute or minimally, hourly basis.

Public access to this sensitive database should be prescribed in your legislation.

Thank you for your attention.



13th Street
Park Slope, Brooklyn 11215
www.roadify.com

Open data makes government better for government.

It's an excellent way to collect data, promote innovation, and generates popular solutions to everyday issues.

I represent a Brooklyn startup called Roadify that has been able to use open data to improve public transportation and minimize traffic in the Park Slope area. Brooklynites are using Roadify to access and update bus schedules through text messages, as well as share information about open parking spots in order to reduce local traffic.

Our bus platform is simply based on riders reporting a bus's location so that other riders waiting down the line can get a better idea of when the bus will arrive at their stop. We've aggregated these real-time user updates with the MTA's publicly released bus schedules to create a flexible and more dynamic schedule that makes riders both better informed and more participatory in their daily commute.

At a time when pains over cuts and reductions are running high, the accessibility of the MTA's data has allowed Roadify to help alleviate some of the strife.

By releasing data to developers and entrepreneurs, governing bodies are not only helping their constituencies, but themselves as well. Promoting access to innovative and popular technologies allows governments to run more efficiently and offers solutions that otherwise wouldn't exist.

Inherent to the democratization of information is participation. Government benefits when people participate. Give us the capabilities and we will put them to work for you.

Thank you,

Dylan Goelz

Community Outreach
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Donn Morrill, Chairman, New York Technology Council

Testimony before the New York City Council

Monday, June 21, 2010

Introduction

Good morning. My name is Donn Morrill. I am the founder and chairman of the New York Technology Council, a trade association whose mission is to help make New York a world-recognized center of excellence for technology. Founded in 2009, NYTECH today boasts 250 member companies and is proud to include among its founding sponsors Google, Verizon, Information Builders, Citibank, the accounting firm of Amper Politzner and RRE Ventures, one of the city's preeminent venture capital funds.

I would like to thank the Council for allowing me to speak today on this important topic.

Precedents

As I'm sure everyone on this Council is already aware, open data initiatives are taking hold across the country. From the California Open Government Directive S-20-09 to the Federal Government's Data.gov data portal, governments are beginning to realize the societal benefits open data standards can offer. Indeed, New York City itself has already begun to dip its toe into the oceans of data rightfully belonging in the public space. Last year's BigApps competition invited entrepreneurs from around the city to develop software applications based on publicly available data sets from New York City agencies. The competition was a huge success - garnering dozens of submissions and paving the way for the recently-announced NYC Entrepreneurial Fund and a \$300,000 investment in one BigApps company. There is no debating the positive economic impact this program has generated.

To paraphrase perhaps the greatest business leader of our times, the point-haired boss from "Dilbert," this bill is low hanging fruit and a win-win. It will empower synergies, shift paradigms, develop core competencies and encourage out of the box thinking. It is a slam dunk, a home run and a hat trick. In short, this bill is a good idea.

This should not be a contentious bill. None of you will lose a vote. None of you will lose an endorsement. None of you will lose a dollar in financing by supporting this bill. What you will gain is recognition from the community that your affirmative vote will open doors for enterprising companies to develop new and exciting ways to experience New York City.

Alternatives

Without this law, left to their own devices, some city agencies, such as those that have already participated in the BigApps competition, would no doubt take the initiative and release valuable data sets for public consumption. Others, however, would be less cooperative. A City mandate to publish these data sets would serve to overcome the petty bureaucracies and misguided excuses that frequently mire such programs.

Conclusion

Government regulation frequently lags technological changes - by enacting this legislation, you have the opportunity to break that trend and ensure that the great City of New York takes the lead in recognizing the power of technology to build trust in government, foster innovation and improve the society in which we all live. Please pass this important piece of legislation. Thank you.



**Testimony of Aaron Brown, Senior Product Manager, Google
On Intro No. 29
Before the New York City Council
Committee on Technology in Government
Concerning Open Data Standards
June 21, 2010**

Good morning, Chair Brewer and members of the committee, and thank you for the opportunity to be here and to testify on this important issue. My name is Aaron Brown and I am a Senior Product Manager at Google, based here in New York City. Google is pleased to be included in the proceedings today -- as you may know, Google is a major presence in New York City; we have our second-largest worldwide office here in the city with over 2,000 employees and are truly excited to be a part of the New York City community and of important civic discussions like this.

At Google, we're very familiar with the power of data. We use data extensively to build and improve our own products, and perhaps more importantly we build and make available platforms and tools to help others do interesting things with data. Over the past few years we've created and released a number of products that help make data more transparent, ranging from our mashup capabilities in Google Maps, to charting functionality in our Google applications suite, to purpose-built data sharing and access platforms like Google Fusion Tables and Google Public Data Explorer.

We've done this at least in part because we recognize the importance of openness, transparency, and broad-based innovation around data, and want to help further promote those goals. We've been involved in many projects over the years with federal, state, and local governments to make data more transparent and accessible, with the perspective that citizens should be just one search away from all online public information.

For example, a few years ago we found that as many as 80% of people looking for government information were using a search engine, but roughly half of the public information on government sites was not even accessible to search, for example hidden behind web forms. We helped remove those barriers by partnering with state governments to implement Sitemaps, a technology that made their existing data more visible and accessible to search engines and the public. We've worked as part of the Voting Information Project to help consolidate scattered and inaccessible county-by-county data for the State of Virginia into an easy-to-use map-based tool that voters can use to quickly and easily find details of their local races and polling places. We've worked with the U.S. Census Bureau, the CDC, and others to create interactive visualizations that bring population data to life and shed light on trends and inequities.

These projects were made possible by the open, electronic availability of public data, and through the entrepreneurship of dedicated developers and advocates. We'd like to see similar innovation come to New York City, and as such we support the goals of Intro. 29. By making city public data available electronically and in standard, open formats that can be accessed programmatically, we believe Intro 29 will create substantial opportunity for innovation, transparency, and new public/private partnership within the city. This will happen because open data access catalyzes an ecosystem of public/private innovation that can't exist when only the government has easy access to public data. Open data engages entrepreneurs and community groups by making it possible for them to create new "mashup" applications that surface public data to the city's citizens and businesses in unique ways that make it understandable and useful.

We've seen openness lead to innovation time and time again. A recent and compelling illustration comes from a program introduced earlier this year by the U.S. Department of Health and Human Services, called the Community Health Data Initiative. In that program, HHS released a large collection of public health datasets in electronic, open standard form. Approximately 30 large and small organizations, split about equally between public and private sector, were initially invited to develop innovative mashup applications using this data. In only 3 months, these organizations had created roughly 15 new innovative applications and made them available to the public, including a tool from Microsoft Bing that helps consumers find the healthiest places to live, a demonstration from GE that compares community health metrics across the US, and a demonstration we built on our Google Fusion Tables platform that lets users explore maps to find the most "heart friendly" and "people friendly" hospitals across the U.S.

This example demonstrates a rate and pace of innovation that's only possible if the raw materials – the public data – are made available for free, open, and electronic access. Other governments are recognizing this as well; for example, earlier this month the State of California launched its Apps for Californians initiative, a contest that engages their constituencies to rapidly build innovative mashup applications over hundreds of datasets and hundreds of millions of data records, all of which are available electronically. We're partnering with the State of California to make many of these data sets available in Google Fusion Tables, our publishing platform for online collaboration and visualization of data, with the goal of making it even easier for groups and individuals to create new mashup applications that look at public data in provocative new ways.

These examples, and innumerable others from across the industry, illustrate the kind of public/private innovation that can be sparked when public data is made open and accessible. With Intro. 29, we think that New York City has the opportunity to join its forward-thinking brethren and become a beacon community in its support and availability of open public data. And Google is excited about the prospect of working with the City community to make this happen if and when Intro. 29 is approved.

Finally, before wrapping up, I'd just like to comment on a few of the provisions in Intro. 29 that, based on our experience as technologists, we think are particularly critical to its success. First

is the requirement that public data sets be made available in a form that permits automated processing. All of the examples I've mentioned today were possible because their underlying data was available in machine-readable form. Without this, developers have to expend considerable extra effort to make data readable and add missing structure before they can focus on application innovation; in some cases, this can create enough of a barrier that they will turn away before starting. While we recognize that the costs to do so can be non-trivial, we believe it's important to set goals for machine-readable, structured data availability even if they are phased over time based on the importance and accessibility of the data.

Second is the requirement that the department adopt a web application programming interface, or API, for the data. We've found APIs to be important to velocity and success, as they enable entrepreneurs to focus on application innovation and not waste time and energy preparing the data for access. So we strongly support the goal of making public data accessible via API. However, we've also seen that mandating APIs from day-1 can add substantial delay and complexity to the data release process, so we encourage the department to focus first on the release of raw data and approach API requirements in a phased manner, perhaps leveraging Google and others in the industry who offer data tools that already provide open APIs to developers.

Finally, the last point to underscore is the requirement that public data sets be accessible to external search engines. As I said at the beginning of my testimony, we've found that as many as 80% of people looking for government information start with search, so search engine accessibility is fundamental to creating effective public access to data.

So to conclude, I'll reiterate that Google supports the goals and provisions of Intro. 29, and I hope that the perspective I've provided today has helped illustrate how in our experience, open, standardized, electronic access to public data is a critical catalyst for innovation, for the creation of applications with substantial public benefit, and for enabling government transparency.

Thank you for allowing me to testify, and I would welcome any questions that you have.



Digital Democracy

Empowering Civic Engagement Through Digital Technologies

Testimony for New York City Council Committee on Technology - Introduction 029-2010 - Establishment of open data standards for city agencies

Tomorrow's youth need to have the skills of 21st century citizens.

My name is Liz Hodes and I work with Digital Democracy, a nonprofit based in New York working to empower marginalized communities with digital technologies. The decisions made here have an impact in our schools here and overseas and I thank you for taking the time to listen.

Imagine a city where students can learn about their environment by getting data in real-time in their classrooms. Students would have the knowledge of what's changing right outside their window: in their parks and on their streets. This increase in information would spark interest locally, and teach them that if they can make an impact on a local level they will ultimately contribute to efforts being made around the world to enact environmental change on a global scale. Young people would be engaged in meaningful ways with the world around them.

If New York City is to continue to be a competitive global center, we need to be able to react and respond to our changing times, this post-industrial revolution – a transition due to the development of a global community online. In schools students are still learning the skills they need in an industrial society that favors education offline. These methods of educating are becoming increasingly outdated as data becomes available by the minute, and as today's youth spend more and more time being connected. Youth are consuming all available information while crucial government data is still locked away. Why not harness this passion online – this time spent on Facebook, producing content for Youtube, and on mobiles connecting with friends – for positive engagement in the classroom, meaningful connection with the community, and ultimately for effective global change? Otherwise we run the risk of their minds becoming obese from unhealthy information as their bodies would from unhealthy foods.



Digital Democracy

Empowering Civic Engagement Through Digital Technologies

I ask you, what would you change and improve about your community? I'm sure that many of you have an answer to this question. Why not ask our kids? And in doing so, give them the information they need to not only answer this question, but make the goals for their community a reality. Why not give them the information about where our city's best water supply is, public safety information, and places to volunteer. Can increasing the prevalence of park benches decrease local crime? Can making data available about the nutritional value of our food decrease rates of obesity? By having this crucial information, youth can find answers to these questions and can be ambassadors for change in their communities. They can see what will affect real change, and know whether their community has the resources to make these changes possible.

On Saturday June 5th we worked with 120 students through the Future Now program with the Department of Education. Using limited data we helped these students begin to answer the question of what changes they would like to see take place in New York City by 2020. We overlaid information that the city already made available, including the locations of bike racks and low-bridges, as well as Federal data such as recipients of stimulus money from Recovery.gov. You can see their answers, ranging from homeless shelters, to skate parks, to a peace tree by visiting mappingpeace.org. This is an exciting beginning to helping students use data to visualize the future of their cities. Our hope is that our programming, with the right resources and adequate data can be scaled effectively for the New York City school system.

We have seen open data work wonders in other countries. In Thailand we saw data supported healthcare systems that are cheaper, healthier and more efficient than ours, in refugee camps there are internet connections enabling young adults to attend classes at NYU, and in Haiti, our open source work is leading to increased transparency, helping direct the billions of dollars in earthquake recovery funds to the people who can use it to affect long-lasting positive change.

Here in New York, Digital Democracy is creating a free and open source education platform, Roebing, which facilitates digital literacy and technical skills. We target middle and high school



Digital Democracy

Empowering Civic Engagement Through Digital Technologies

students using mobile phones, computers and other devices to share photos, videos, maps, blog posts, and homework assignments. This positively impacts student academic performance and prevents dropouts by engaging them through participatory education and enables teachers to track academic performance through quantitative analytics and qualitative data. While students can explore their communities through maps and data locally, they can also connect to their peers around the world who are doing the same. Through this interaction they can understand the importance of one's own community anywhere. Open source software allows us to work with communities around the world. We can localize software immediately at low cost for high impact.

When the Bloomberg Administration launched the Big Apps competition, they opened up the 170 datasets of City information, unleashing creative uses that they hadn't even considered. In exchange for \$20,000 in prize money, several million dollars in software apps were created. If we want New York City to stay ahead of the innovation and technology curve, as the Mayor mentioned, we'll have to unlock more data and continue to capitalize on our greatest asset – New Yorkers.

Investing in open data means investing in young and innovative organizations like ours, in growing sectors of our economy, and in our children. As Secretary Clinton pointed out in her remarks on Internet Freedom in January, access to information is in the Universal Declaration of Human Rights and continues to be a cornerstone of our freedom. Open data makes for an open society. Smarter cities make for smarter kids. Together, this makes for a better future for our country and for people everywhere.

We support this legislation, it enables us to begin to implement our cutting edge educational programming, which fosters positive engagement between students, their government and their community. Thank You.

June 21, 2010
New York City Hall
SeeClickFix White Paper

SeeClickFix & Open Data

What is SeeClickFix?

SeeClickFix is a free mobile phone and web tool that allows citizens to report and publicly document non-emergency issues on an interactive map. From pot holes to blighted houses, from requests for new bike lanes to reports of possible gang activity, SeeClickFix issues run the gamut of everyday concerns within the public space in communities around the country. Each issue reported on SeeClickFix receives a distinct page where users can monitor the issue's progress, post updates and photos, and discuss potential fixes. Citizens, community groups, local government, and local media can find out about breaking news in their community by signing up their email addresses to receive issue alerts in real time.

What's the Difference between a standard 311 System and an Open Data System?

A **standard 311 System**, which many municipalities including New York City currently use, provides a platform for citizens to enter complaints with city departments by calling a hotline or filling out an online form. The service request data is entered into the city's CRM, and citizens receive a tracking number for their problem. End of story. If a quick fix does not arrive, citizens can check their problem's status online or call back to complain. If they are feeling particularly energized or annoyed, citizens can lobby neighborhood officials to help get the problem solved. However, this is time-consuming work for taxpayers to secure what they might feel like is already entitled to them—things like paved streets, clean parks, and shoe-free telephone wires. It can be frustrating to get put on hold again and again by call center workers. And such a system does little to empower citizens; rather, it reinforces a relationship of citizen as supplicant and government as benefactor. Citizens are put in a position where they must ask for change in their local neighborhoods rather than do anything about it themselves, like contribute ideas or organize their community.

An **Open Data system** like SeeClickFix seeks to change this relationship in several, important ways, by **publicly documenting** service requests online and harnessing the power of **social media** and **crowdsourcing** to discuss and diagnose everyday, quality of life problems. From the moment a SeeClickFix issue is reported, the entire community has the ability to comment on it, vote to support it, and provide evidence. The local government can immediately weigh in on the problem, provide a repair schedule, and alert the whole community when the problem is fixed. SeeClickFix has used this approach to obtain results everywhere from New Mexico to New Jersey. A noteworthy case occurred in Washington, DC, where community groups, city councilman, and transit officials used SeeClickFix over the course of a year to discuss and design solutions for a dangerous intersection. SeeClickFix's dedication to an Open Data system—through which

all service request data are publicly documented and publicly available—enables such results. SeeClickFix is a testament to the power of Open Data systems to empower communities, increase government accountability and efficiency, foster more transparent communication, encourage civic engagement, and enable new enterprise.

- **Empowerment.** By transferring 311 data from a closed system to a publicly accessible one, SeeClickFix empowers citizens to hold their government **more accountable**. If everyone can see that a problem has not been fixed yet, government will have more incentive to get an issue fixed. And when government fixes a problem, officials can use SeeClickFix to communicate directly with citizens and let them know how hard they are working to listen to citizens' needs. Finally, government can use SeeClickFix to keep citizens up-to-date about the fixes that they are planning for a certain site, making communication between government and citizens **more transparent**.
- **Engagement.** SeeClickFix provides the communicative platform for neighbors to discuss and brainstorm solutions to local problems with one another and with neighborhood officials. Crowdsourcing principals allow the good ideas to rise to the top while email alerts spread the ideas to those in decision making roles. Citizens who take the time to report even minor issues and see them fixed are likely to get more engaged in their local communities: it's a self-reinforcing loop. Such a process helps build civic engagement and encourages community groups to take certain problems into their own hands, like park clean-ups or graffiti removal.
- **Efficiency.** Two heads are better than one and thousands of heads are better than two. We make it easy and fun for everyone to see, click and fix by providing citizens a multi-platform interface to quickly and easily report everyday concerns, transforming passive residents into active collectors of data. In computer terminology, this is called distributed sensing, a particularly powerful method for recognizing patterns, such as those that gradually take shape on a street. This process takes the burden off of government to track down the problems, and the precision of GPS lets government know exactly where to find them.
- **Entrepreneurialism.** Opening up municipal data creates new windows for entrepreneurs like SeeClickFix to act. By exploiting city data, web developers can create new municipally-oriented applications that aim to compliment city services and boost government transparency and efficiency. Most apps, like SeeClickFix's, are free for citizens to use, providing residents with significant value at a low cost to government.

In the past two years, SeeClickFix has enabled hundreds of thousands of citizens in thousands of municipalities to communicate more directly with their government. SeeClickFix has strengthened community activism by providing new outlets for advocacy. And SeeClickFix has saved governments time and money, by helping them target the most pressing issues in their communities. All of this is possible through a simple change to data management, by opening up locked 311 service request data. [

Testimony to NY City Council regarding Int. 029-2010: Open Data Standards

Andrew Hoppin, CIO, New York State Senate

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June 21, 2010

In this testimony I will not rehash the rationale and value proposition of Open Data, but, rather, will speak to the challenges and opportunities inherent in implementation of open data initiatives by any government entity in New York State, drawing on our experience with the New York State Senate's "Open Senate" initiative.

Open Senate

Our charge when we joined the New York State Senate in early 2009 was to re-launch our website with a focus on data publishing, as a first step in making the Senate the most transparent, efficient, and participatory legislative body in the country. We viewed complete, timely, accurate, and open (no subscription required) public access to this data as the fundamental prerequisite to our institution's ability to govern credibly and effectively, because data is both a primary input to the policy making process, as well as a primary output—the work product of government, created with tax dollars, and itself a public asset. We began with an emerging national standard of "8 principles of open government data" as our guide—that data should be Complete, Primary, Timely, Accessible, Machine-processable, Accessible in a Non-Discriminatory Manner, Non-Proprietary in format, and License-free.

Open Administrative Data

The resulting NYSenate.gov, launched in May 2009, is comprehensive repository of all Senate institutional administrative data, and well as a leading "Gov 2.0" portal comprised of websites for all 62 Senators and more than 40 Senate Committees that support citizens in interacting directly with their elected officials and the legislative process. Prior to 2009, most administrative data either needed to be FOIL'd or had not been available at all. Examples include comprehensive calendars of official events, live and archived video of committee meetings and public hearings, and payroll and expenditure reports in downloadable spreadsheet format.

Open Legislative Data

We also created OpenLegislation.NYSenate.gov, a website and an Application Programming Interface (API) that makes legislative information available to the public in a way that it can easily be searched, publicly commented upon, and shared socially with others. Open Legislation also became the first website of a legislature in the nation to accept public comment on all bills; much of the legislative information available, such as Committee Votes, was not available anywhere online before the launch of the "Open Leg" website in 2009.

Open Standards

All data and other content used in NYSenate.gov, NYSenate Mobile, and Open Legislation is also published as data feeds in open standards formats such as XML, CSV, and JSON, and there is also a freely available Application Programming Interface (API). This empowers third-parties to do work the Senate might otherwise need to do itself, such as developing applications that provide access to Senate data in a variety of value-added forms such as interactive voice response (IVR) telephony, at no additional cost to the taxpayer, thus further increasing the value to taxpayers derived from the Senate's development of these projects. We also leverage data that is available on the NYSenate.gov and OpenLegislation websites for other internal software applications, such as our new "NYSenate Mobile" application for iPhones and Andoid-based mobile phones.

Open-Source

All software code for the projects is published online and freely available under open-source BSD and GPLv3 licenses for re-use by peers in government and any other third-party, thus increasing the anticipated ROI of our investment in these projects.

Affordable

We were able to complete all of the technical work required for this comprehensive data publishing effort within six months of its initiation. Also, due to our use of low cost open-source software, hosted "software as a service" (SaaS) tools, and "cloud-based" hosting of the data, as well as corollary modernization of the rest of the Senate's information technology infrastructure, realized net savings in excess of \$500,000 annually in the Senate's budget in the bargain.

Applicability to New York City

The open data challenge and opportunity for a global city with dozens of Departments is undoubtedly more complex than that of a single legislative body like the Senate, but the imperative to accomplish it is perhaps even greater. I believe it can be accomplished at reasonable cost and in a manner that delivers real value to New York City taxpayers, of which I am one. Furthermore, as a global city with an administration larger and more complex than many nations, New York City has an opportunity to innovate, set precedent and provide leadership in a manner that could positively impact hundreds of other governments around the planet.

Now in 2010, New York City has the distinct benefit of being able to look to the precedents, best practices, lessons already learned, and hands-on partnership of a growing "open government" community of practice at the local, State, and Federal levels.

I will now share a few lessons we have gleaned in the Senate from our

participation in this community of practice, that I believe are fundamental to realizing the full potential benefit of New York City's open data initiatives, at the minimal possible expense.

Open Data = Efficient Government

Many open data advocates focus on the imperative of transparency, in order to root out hidden waste or even corruption in government. However, I believe that the ultimate upside of open data derives from its ability to support government innovation, thus yielding the potential at least to improve the efficacy of government services while reducing the cost of delivering those services.

This is possible in part because publishing data for real-time consumption by external applications (via feeds, web services, and APIs), tends to be a benevolent forcing factor for data creators within government to better manage, understand, and leverage their own data, yielding new insights into how to more efficiently manage the government entity that is creating the data in the first place. The creation of USASpending.gov has led to numerous examples of Agencies contributing data identifying costs savings opportunities for the first time because the effort incentivized them to take a closer look at their spending data internally. Put more simply, Open Data provides a mirror through which government can view itself more clearly and objectively, and actionable insights result.

Furthermore, a primary customer group for open data is government itself; the IT systems of most government entities are created and maintained independent of one another, and often in ways that are explicitly designed to secure and sequester access to data within these systems. This legacy enterprise IT design impedes the ability of different government entities to collaborate with one another.

For example, both a Police Department and a Transit department might well benefit from data from a Parks Department forecasting Summer visitor traffic to specific local parks, but may have a difficult time accessing that data in its most actionable real-time form unless the data is published in a timely fashion in open accessible formats as part of an open data initiative. In turn, the Parks Department could benefit from transit data, thus helping it to refine its own visitor traffic forecasts. The most useful data set of all might well be one in which all three entities in question are able to augment each other's data, yielding a data stream that combines the information resident within each Department.

Even if a city itself modernizes its IT systems such that it does an optimal job of sharing data internally between all of its constituent Departments through centralized IT planning and ubiquitous adherence to data publishing best practices, government entities in other political geographies may be left on the outside looking in. Counties, States, and the Federal government are also key

potential consumers of City data, as well as producers of data that City Departments might well benefit from having be more accessible.

An Open Data initiative, in which all data is published publicly and conforms to open standards by default, tends to circumvent the challenges of disparate political jurisdictions and disparate legacy enterprise IT systems that otherwise stand in the way of government entities sharing data effectively with one another.

Open Data = We.gov

Open Data is also a prerequisite to inviting citizens into government, not just as customers, but as active participants who can add value to government, helping to improve its efficacy and/or to reduce its cost. Tim O'Reilly, the technology book publisher credited with coining the term "Web 2.0," has laid out the thesis in his calls for the development of "government as a platform." The idea is that HOW government data is published matters, as does the context around its publishing. If government performance data (say, regarding how many potholes were fixed where over what period of time by a Department of Public Works) is published as a PDF document on a government-run accountability website, the goal of transparency may have been met—the data can be found on the Web, and assessments pro or con of government efficacy can be made.

However, citizens and private businesses cannot readily make USE of the data to derive additional value from it, let alone CONTRIBUTE to the data to add additional value to it, which government itself can then in turn benefit from. The We.gov approach, by contrast, would publish the underlying source data (the very data used internally by a DPW to dispatch repair crews), and would publish it in a dynamic "mashable" form that allows it to be downloaded for further analysis, as well as integrated as a data stream into new 3rd-party web applications, and perhaps further augmented by third-parties. Maps of reported potholes might then be integrated with mapping and routing applications so that navigation systems could automatically route drivers away from troublesome streets, and reports of new potholes could more readily received from citizens with mobile phones, without requiring city staff to conceive, develop or maintain these additional systems.

Many of these "obvious" examples are already operational today—some cities already use SeeClickFix.com as their own ultra-low-cost version of a 311 system, and New York City's "Big Apps" competition yielded innovative applications like WayFinder and ExitStrategy, which help the citizens better navigate the subway, without city resources being expended to develop them.

A key insight here is for us in government not to presume that it can discern in advance what data will be of value—innovation inherently often comes from the unexpected. Therefore, I believe that any comprehensive platform for publishing "mashable" government data should be flexible and comprehensive enough to

support data from all of city government, without being overly biased by our own expectations of where value will be found.

“Gov 2.0,” built around troves of free open government data, is becoming widely viewed as potential multi-billion dollar new industry. The creative entrepreneurial technophile culture of New York City is an ideal place to catalyze the development of this industry by aggressively opening up government data, to be mutual benefit of city government, citizens, and the local business community alike.

Open Data → Open Everything

Based on our experience in the Senate, I believe that an effective implementation of an Open Data initiative can best be done as part of a broader “Open Everything” strategy, such as we undertook in the Senate. Specifically:

- **Open-Source:** Governments at every level and locale of political geography are considering or implementing open data initiatives; development and using free open-source software to deploy open data publishing portals and other open data management systems can greatly reduce the aggregate costs of these efforts, by removing licensing and intellectual property impediments to sharing and reusing the required software code between government peers.
- **Open Content & Copyright:** In the Senate we became the first legislature to adopt Creative Commons copyright for all of our content, in order to proactively affirm and provide a well tested legal framework under which, with very narrow exceptions, all of the information we create and publish anywhere using tax dollars can be used and reused without limitation, cost, or legal concern. We found this to be immensely empowering to external stakeholders seeking to derive value from our open data efforts.
- **Open Process:** The We.gov process can start today, even before development of a comprehensive data publishing platform, by engaging communities of peers, citizens, and colleagues in an open design process, and to collaborate in cataloging and prioritizing the data to be published through it; this openness ought to reduce the government labor required to do the job well, and also ought to result in optimized results by virtue of more aggregate thought being put into the process. A great deal of work has already gone into designing and developing open data plans and systems for government, and New York City can and should leverage that work to its benefit. In turn, this same open collaborative approach will maximize the value that New York City's budding innovation and leadership in this realm can yield for governments and citizens everywhere.



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Testimony of Philip Ashlock
before the
New York City Committee on Technology
regarding
Intro No. 29

June 21, 2010

Good morning Chairperson Garodnick and thank you for having me here to testify before your committee today.

My name is Philip Ashlock and I am the Open Government Program Manager for OpenPlans, a non-profit civic technology organization here in New York City. Much of the work that I do at OpenPlans directly relates to this bill in that I work with cities to establish open standards and best practices for municipal technology.

Intro 29 is a very important piece of legislation which I believe can have a profoundly positive effect on the city. However, rather than starting off by going into depth about what is good about Intro 29, I'd like to provide some context in which to place this bill relative to precedents in NYC Government and the current state of open data and open government practices internationally.

Section 1062 of the New York City Charter requires the New York city commission on Public Information and Communication to publish a "Public Data Directory" describing

the computerized databases maintained by City agencies. This is the first "Public Data Directory" published pursuant to that requirement.

Publication of this first edition represents an important step towards fulfilling the goal of improving public access to information about the wide variety of computerized data maintained by the city. Information maintained by City agencies is increasingly being stored in computers. Until now, however, there has been no source of information available to researchers, community groups, businesses, and other members of the public regarding the types of electronic data kept by City agencies, much of which is required by law to be accessible to the public.

The New York City commission on Public Information and Communication is a new City agency, established by the 1989 amendments to the New York City Charter. The Commission is chaired by the President of the City Council, and includes public members as well as representatives of the Mayor, the City Council and a number of city agencies. In addition to publication of the Public Data Directory, the Commission's responsibilities include education and outreach to assist the public in obtaining access to City information, and developing strategies for the use of new communications technologies to improve access to and distribution of city data. In June 1991, the Commission presented the City Council with a comprehensive proposal for cablecasting the proceedings of the Council and the City Planning Commission.

This Public Data Directory represents the joint efforts of the members of the Commission and, in particular, the staff of the Mayor's Office of Operations and the Law Department. The Commission also wishes to acknowledge the valuable assistance provided by the agencies themselves in preparing the Directory.

For each agency, the Directory provides a brief description of the agency's mission, the name and phone number of a, "Public Liaison" available to assist members of the public, and brief descriptions of the contents of the databases. The "Users Notes" contain important information on methods of access, legal restrictions on access to certain records, and other information.

We hope that the Directory will assist you in locating sources of information and in formulating records requests to City agencies. At present, only a few agencies offer members of the public "on-line" access to electronic data. For that reason, in most instances it will be necessary for you to make a Freedom of Information Law request to the agency in order to obtain the records you need. The Commission believes that significant opportunities exist to expand "on-line" access to City data and intends to work to encourage City agencies towards this goal.

Publication of this Directory is a first for New York City government. Our goal has been to produce a Directory that is "user friendly" for all members of the public, including both those who are knowledgeable about computer data and those who are not. In future editions, we hope to expand the listings, add to the database descriptions, and provide more information regarding computer formats. We welcome your comments on ways to improve future editions and methods of access to City agency electronic data.

That was the introduction to New York City's first public data directory published April 1993.

Let me reference another document, dated April 30th 1993, signaling the initial release of another data directory. This is CERN's public domain declaration of the world wide web, it's essentially the web's birth certificate.

<http://tenyears-www.web.cern.ch/tenyears-www/Declaration/Page1.html>

I draw these parallels for historical context, both were released in April 1993. New York City has the earliest and most comprehensive open data policy of any city or government I'm aware of and it's written right into the city charter, but since this policy predated the birth and current ubiquity of the web it has largely fallen into obscurity and seems to have been treated as nearly irrelevant.

Intro 29 seems to provide a crucial update and breathe life into the original intent and current relevance of COPIC and the Public Data Directory.

For some additional context, Intro 29 now finds itself within an international movement for open data and open government which is in part inspired by President Obama's Open Government Directive. In the past year we've seen new policies to put government data online from Vancouver, B.C., Portland, Oregon, San Francisco, the City of Ottawa, The United States of America, the United Kingdom, and Australia. At least as many more governments have instated new open data initiatives and data catalogs without official policies. You likely know of two other similar pieces of legislation under review coming from right here in New York State. State Assembly bill A10335 calls to publish a technical standards manual for the publishing of records on the Internet by state agencies. On the federal level Representative Steve Israel has introduced H.R.4858, The Public Online Information Act, which calls for Executive Branch agencies to publish all publicly available information on the Internet in a timely fashion and in user-friendly formats. This movement represents a long awaited coming of age for our system of governance regarding how we disseminate information and interact with one another. Releasing information online in standard formats also presents huge opportunities for government efficiencies and private sector entrepreneurship (as with the successful industries enabled by GPS, weather, or Census data), but most importantly open data furthers citizen insight, creativity, and civic engagement as we've seen with wonderful new websites like Big Apple Ed (bigappleed.com).

Intro 29 is groundbreaking because it is so comprehensive and so explicit about the needs for all public data to be online. However, I do wish this policy had an opportunity to speak more to the value proposition of what it suggests and try to really change the culture of information management as has been done with similar legislation in many other cities. The requirement for data in legacy systems to be made available online might mean modernizing infrastructure, but this should almost always mean new efficiencies and cost savings rather than new expenses. Precedents of cost savings for this transition are easy to come by from Andrew Hoppin at the New York State Senate and from Vivek Kundra at the White House. Furthermore, open standards and access via the internet are the best possible benchmarks for the increased efficiency,

robustness, and sustainability of New York City's infrastructure, information systems, and government as a whole. As a simple example of this benchmark, do you ever email yourself a file or a piece of information because the standard process of email is so much more reliable and ubiquitous than all the other incompatible systems you might encounter?

The hope is that precedents like Intro 29 can provide an opportunity for NYC to truly establish itself as leader for the future of city-centric information ecosystems and economies and as a city that knows how to provide a robust and sustainable foundation for civic engagement.

With that, I would like to touch on a few specific observations within the language of the legislation. I should preface this by saying that I think Intro 29 would be a huge success if passed as is and these points are just me trying to make it better.

In Section 23-301, Definitions, the term "Voluntary consensus standards" is used to refer to what I have more commonly heard described as "open standards." I would suggest changing this terminology and possibly pairing it with the standard definition of an "open standard" provided by Bruce Perens. This definition is cited in similar legislation from the State of Vermont and it is generally regarded as the defacto definition. If we're talking about standards, we might as well use the standard definition for a standard.

In Section 23-302, I would stress that the first sentence of point "b." not be interpreted to suggest that the department should provide the interface to make each data set viewable by a web browser, but simply that the data is formatted in such a way that it is possible to have it viewable in a web browser. The fact that the data is in its raw primary form and is formatted using an open standard is the most important requirement.

In Section 23-304, there is a requirement for "an accounting of all public data sets under the control of the agency." This is already a requirement in the City Charter with the

Public Data Directory, so it might be worth noting that this accounting could be coupled with the Public Data Directory. By the time full compliance is met in 2013, this legislation should make the Public Data Directory obsolete, but until that time I think it is important that the Public Data Directory is maintained to highlight the datasets that exist, but are not available online.

In general, I would also suggest more opportunities for feedback and ways for the city to learn how to improve the process of releasing information. However, it appears as if this type of process is already meant to be overseen by COPIC. With this in mind, it may be worth considering how COPIC might provide oversight for compliance and overall implementation of Intro 29.

Information about the NYC Public Data Directory and COPIC was very difficult to find as have been many things regarding the practices and policies for making NYC data available. With this in mind and in the spirit of dataSF.org, dataTO.org, and dataOTT.org, a new website, dataNYC.org, has been established to provide information and collect feedback about the Public Data Directory and all data that New Yorkers might be interested in. The website includes the closest thing to a comprehensive Public Data Directory: a digitized version of DoITT's 2001 Data Systems Inventory. This website was just put together and is expected to rapidly evolve to support the fulfillment of City run plans like Intro 29 as well as community run initiatives.

Thank you again for your time.

Philip Ashlock



Testimony presented to the Council Committee on Technology

The Council of the City of New York, June 21st, 2010

Hearing on Open Data Standards for All City Agencies

Presented by Sam Brookfield

ITAC

My name is Sam Brookfield, and I work in the Technology Program at ITAC, The New York City Industrial & Technology Assistance Corporation. ITAC is an economic development organization with 22 years of experience helping NYC small businesses grow and create high-value jobs. ITAC is funded by the New York State Foundation for Science, Technology and Innovation (NYSTAR) as the designated Regional Technology Development Center (RTDC) for the New York City Region. It is also a Manufacturing Extension Partnership (MEP) Center under a nationwide National Institute of Standards and Technology Program (NIST). We are one of three centers in the State funded to assist small research and development firms apply for Small Business Innovation Research (SBIR) program funding from eleven Federal agencies. Over the past 5 years, ITAC clients have reported more than \$1 billion in economic impact and 4,500 jobs created or retained. We also run sponsored programs for New York City companies, such as our City Council-funded MoveSmart/StayLean/GrowFast program, and our NYSERDA-funded NYC Energy Tech program to accelerate energy grid technology companies. We would like to take this opportunity to thank the Council for your consistent and generous support of the MoveSmart/StayLean/GrowFast program.



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ITAC supports the Committee's effort to make City data openly accessible to businesses and individuals alike. We work with numerous innovative technology and manufacturing companies in, among others, the life sciences, homeland security, defense, education, smart grid management, and entertainment industries that would greatly benefit from access to such data. We see excellent opportunities for three sectors in particular. These include the following:

1. Science, Technology, Engineering, and Math Education: Open access to City data would bring STEM education programs to new levels of effectiveness. Educators could use this data in an almost limitless number of applications. They could use it to show students that theoretical ideas are in fact backed up by trends in real data. Imagine a statistics class where educators could anchor the class around not only real data, but data from the city where their students live. That kind of direct link to what they are learning would make for a more scintillating and exciting classroom environment. Students could analyze data sets to find patterns in City activities, then put themselves in the shoes of policy makers and use these patterns to make practical policy recommendations. Experiences like this would be of high value to the greater public as the middle and high school students who would be the benefactors of access to City data are the future workforce for our country, and thus the ones who will be making important policy decisions down the road.

2. Software Developers: New York City is home to a thriving community of innovative software start-ups. To create salient systems that solve real-world problems, software architects need to test their software on data sets. Open access to City data would give software developers large, realistic data sets on which to test their programs, and testing on real data sets is superior



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to testing on randomly generated data sets. For example, consider a software developer that has created a new piece of Energy Grid software. It would build far more confidence in the usefulness of the software if it could be tested on a data set containing energy usage patterns in City buildings rather than on a randomly generated data set. Access to City data would provide software developers an affordable path to bringing top-notch programs to the marketplace. This could have a positive effect on Small Business Innovation Research (SBIR) grant applications as well, as meaningful data sets are highly desirable to create competitive proposals. ITAC is one of three NYSTAR-funded SBIR Regional Specialist centers, and we are committed to raising the number of SBIR winners in New York City.

3. Supply Chain Transparency: Opening up City data to public access would allow local manufacturing and technology firms to see what the City is buying and from whom. In other words, it would make the supply chain more transparent. This information would be greatly beneficial to such firms because it would provide essentially free market research data to companies for which this can be prohibitive. Such an understanding of the marketplace would allow firms to better prepare themselves for future growth and expansion. It would be an especially significant development for young and start-up companies that may not have the financial resources to conduct market research on their own. We would like to see the City work with the New York Public Library's Science Industry and Business Library, as well as local universities, to make access and comprehension of this data as simple as possible for the public.

Thank you for this opportunity to testify before you today. It is very encouraging that the City Council is contemplating taking such a progressive step with these valuable data sets. Ultimately,



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leveling the playing field for the use of this key public asset will drive economic opportunities for the City's technology firms and manufacturers that will result in the creation of high quality jobs.

**Testimony to the New York City Council Committee on Technology in
Government's Hearing on Int. 029-2010
By Andrew J. Brust, Monday, June 21st, 2010**

The Importance of Open Government Data

To all those present, good afternoon. My name is Andrew Brust. I help run a consulting firm, twenty-six New York, here in Manhattan. I am also a technology columnist and blogger, and serve on the New York Technology Council's Advisory Board. As I have explained in previous testimony, I am a lifelong New Yorker, and began my IT career in the employ of the government of the City of New York.

I've testified to this Committee before, voicing my support for Open Government Data. I'll reiterate today that I feel the benefits of publishing data from all City agencies are huge. In the City of New York we have a large government consisting of many departments, authorities and commissions. Given the pervasiveness, especially recently, of technology in ordinary peoples' lives, it only makes sense to publish this data online. Data published in raw form allows citizens to query that data from computers, smart phones, tablets and other devices. It also allows software developers, be they hobbyists or entrepreneurs, to create applications that analyze the data, mash it up with private data, or visualize it geographically, or through charts, gauges, and diagrams.

Just as the Federal government has created data.gov as a portal for data from Federal agencies, so too should the City of New York, perhaps through DoITT, create a portal for City data. This would provide a platform for an aftermarket in City data-based products and services. It could stimulate greater public participation in government. In the same spirit as the Green Book directory and the various NYC TV cable channels, a City data portal that were both human- and machine-readable could enable self-service acquisition of government information and make City services more effective in the process.

The prospect of opening up each data stream in each agency might seem daunting to City IT professionals. I would encourage DoITT and the individual agencies to conceive of the requirement with the right mindset. Data feeds are just software services, and good software is built on the premise of designing a service layer at the foundation. So rather than taking the approach of building closed systems and then opening them up, agencies should premise the architecture of their systems on building the services/feeds first, then layering application logic and functionality on top of them. With this approach, Open Government Data would become a byproduct of normal software development, rather than a burdensome, discrete step.

This would still leave the “back catalog” of applications and databases, of course, but that can be processed in a phased, scheduled way. Each pre-existing data source exposed would facilitate not just public consumption of the data but re-use of that same data by the agency in new software applications.

Mashup Examples Redux

In my previous testimony, I suggested some examples of how government data could be utilized and commercialized. Allow me to present these ideas, briefly, once more.

Google Maps should be able to show where the big potholes are; Zagat should be able to indicate which restaurants have a sterling Health Department inspection record; WebMD should be able to create heatmaps showing which neighborhoods are hardest hit by an epidemic, and the New York Times ought to be able to indicate which boroughs and neighborhoods are getting the most, or least, arts funding.

Retail consultancies should be able to show which precincts are best and least served by certain types of shops. Tourists should be able to see where the highest concentrations of hotel rooms are, and thus where the most availability and best prices may exist. Members of this Committee should be able to see how well Verizon is living up to its commitment to deploy FiOS service to all areas of all five boroughs.

Children’s Aid Society should be able to illustrate where concentrations of child homelessness and abuse exist. Food for Survival should be able to show which ethnic, geographic, economic and age groups are most susceptible to hunger.

Ultimately, the thing to remember is that data is a raw material, which the City government can refine only to a certain extent. Making the raw material available to the public allows a far greater amount of refinement and value to be added to that data, than can be had by keeping it sequestered within the agency that has collected it.

The City as Data Consumer

Even City government can directly benefit from such Open Government Data. That’s because integration of systems between agencies will be much better facilitated through a normal data sharing regime than through customized, point-to-point data interchange. This will enable streamlined construction of numerous systems. For example, a comprehensive city-wide enterprise data warehouse will be much easier to build in a data sharing environment, making the Mayor’s Management Report much easier to produce. The notion of a general inquiry

system, across all agencies, for 311, becomes compellingly feasible. Key Performance Indicators, and hierarchical balanced scorecards for the entire City government become approachable, as does an automated alerting system that would cover the situation where any of those KPIs fell below or exceeded acceptable values.

The exciting internal applications for Open Government data should eliminate any fear that the external applications would be limited or underwhelming. They should also eliminate doubt as to the importance of sharing virtually all data (within important privacy and security limits), no matter how mundane some of the data, in raw form, may seem.

A Possible Technology

The technology platform with which agencies publish and even host their data most likely should be determined at the discretion of the individual agency itself. Making all agencies adhere to a single technology, hosting or cloud platform would likely be cumbersome to the point of being counterproductive to the goal of publishing the data in the first place.

That said, I would like to alert the Committee to an important technology and platform, from a perhaps unlikely source: Microsoft. Microsoft has created a framework called the Open Government Data Initiative, or OGD I. The software developer's kit for OGD I is, believe it or not, published under an open source license. It was developed not by a product team on the corporate campus in Redmond, WA, but by the field organization that works with developers in the U.S. public sector (including federal, state and local government). OGD I is already being used to publish data from the US Bureau of Labor Statistics, General Services Agency and Geological Survey, as well as from the city government in the District of Columbia, and the City of Edmonton in Canada. Rather than just a static feed, OGD I provides a fully queryable Web service as well as built-in capabilities for mapping and charting the data. Data can also be downloaded in CSV, Excel, or KML formats, the last of these being compatible with Google Earth.

You may know I work closely with Microsoft and have done so now for the better part of two decades. As I have done so, I have often been critical of the proprietary approach the company takes to certain technologies, including data access. But recently things here have changed.

First Microsoft developed a data Web Services technology for its .NET software platform; the technology is called WCF Data Services, but its original code name, which many people still use, was "Astoria." From the beginning I thought any technology that shared a name with a neighborhood in Queens had to be good. And it was: Astoria is based on open standards including HTTP, REST, ATOM, XML and JSON. These are common Web programming technologies that are in no way unique to Microsoft; that, in and of itself, was noteworthy. But

then Microsoft took this approach a step further, doing something quite uncharacteristic: it took Astoria's format and wire protocol and published it as an open protocol, which could be implemented on any platform. Microsoft christened the platform-neutral assets from Astoria the Open Data Protocol, or OData.

OData is compatible, in a raw way, with any programming environment which has the capability of interfacing with the Web. But what about a full library that consumes OData feeds and makes their data items appear as rich objects that developers can program against, without having to write the code to procure the feeds and parse each record and field within them? Of course such a facility exists for Microsoft's .NET platform. But it extends well beyond that: OData native client libraries also exist for JavaScript, Java, PHP, Ruby, and Objective C (used by the iPhone/iPad platform). Microsoft has actually published the source code from the .NET client implementation (available under the Apache Open Source license) so that everyone has access to a sturdy reference implementation. On the server side, in addition to Microsoft's Astoria implementation, IBM has implemented OData for its WebSphere eXtreme Scale REST data service (for its grid database service).

The Open Government Data Initiative is built upon OData, and I hope City agencies will consider using it. To me, this isn't about supporting Microsoft. It's about getting Open Government Data up quickly and easily, in machine-readable form and with a basic user interface that is Section 508-compliant for accessibility. It's also about encouraging Microsoft to continue this open approach to technology, so that it becomes more the rule than the occasion.

Data for the People

Regardless of which technology or collection of technologies the City Of New York uses to open its data, my hope is that it will indeed do so, somehow, and quickly. The data shouldn't be proprietary to City agencies, because the data isn't the City government's property. The data belongs to the public, to use for public benefit and innovative results. I applaud the Council and this Committee for being such strong advocates of such an outcome, and I fervently support passage of Int. 029-2010. Thank you for your time and attention today.

June 21, 2010

Gale A. Brewer
Council Member
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Re: Open Data Legislation

My name is Richard Stanton and I am the CEO of Bintro, an aggregator of classifieds that relies heavily on access to publicly available semantic data. It is a pleasure to be back here today and especially to address such an important topic. I have reviewed the pending legislation and I am going to make the assumption that it will soon be law. With that said, I would like to focus on what can be done with the availability of such data.

As we sit here today, seven nations, eight states, and eight US cities have adopted open data legislation. There are currently over 270,000 Federal data sets available from a start of just four one year ago. There are over 250 applications using these data sets and this is just the beginning. Some examples include an application that shows the amount of aid given to each country by the US including detailed facts and news related to that country and the aid given to it, an app to see the adoption of broadband in the US, and things as innocuous as a publicly available listing of who in the White House get the most visitors and who those visitors are. These apps, built at RPI in Troy NY are just a quick example of what is popping up every day with the help of publicly available data sets.

The web has gone through an incredible evolutionary process over the past 15 years and right now we seem to be in the "open data" stage. There is an immense appetite to take data, especially in semantic form and turn it into valuable applications that range from consumer driven to applications that benefit the greater good of our society.

To me, data is beautiful. It tells a story and gives us a light to find our way through some of the toughest problems. I liken it to a child that needs to be raised properly with love and good guidance, with structure (Madonna), to be socialized with context (bronx bombers), and to grow to provide back even more to the next generation. Data can lead us to a cure for cancer (NIH), it can help find a lost child (Amber alert) and can hold our leaders accountable for how our tax dollars are spent (Public funds research). We are all products of our social construction and data is no different. It needs time and attention, it needs to play nice with others, and it needs to explore relationships in order to grow so it can live on its own. Data, like a child, can bring great joy, make you laugh, but it can also make you agonize as well. Simply put, to me, data is organic and we are just in the infant stages.

At a more practical level, the transparency of democratized data is an incredible leap forward for local governments and will bring NYC into the center of what will be a rapid data growth movement over the course of this decade. Our company Bintro focuses on ingesting a large supply of classified listings and would greatly benefit from multiple types of data sets, especially semantic data. For example a data set with all of the available local government office space that could be put onto a "for sublet list" could be used by our company so that we can match our users to open office space. Selfishly this would help increase our listings but at the same time benefit the city of New York. No office space should go empty

if a start-up, small company, or sole proprietor can use the space. By making this data publicly available, multiple applications can be built around it to the benefit of NYC.

Another example would be the availability of government job openings and outplacement services for laid off government workers. As unemployment continues to plague our economy, publicly available data may be the difference between someone finding a job or not. Let us also not forget that in this age of terrorism, the City of NYC must look to the community to share in and make sense of data and relationships that could hold the key to thwarting any attempts on our city.

From transportation to public safety, NYC will see an awakening from its release of data. As I mentioned, we should not underestimate the societal importance of raising a child well and the same can be said for data. We look forward to the release post legislation and seeing the city, country and world benefit from its use.

Thank you.

Richard P. Stanton

About Richard Stanton

Richard Stanton is the CEO of Bintro, a semantic technology company that specializes in connecting vast public and private databases of knowledge for intelligent web based applications. Mr. Stanton joined Bintro as CEO in June 2008, bringing significant experience in new media and internet related business to the company. His credentials include being the number five employee and member of the senior executive team at GiftCertificates.com, where he was instrumental in growing revenues through online sales. As Vice President, he led product management and creative marketing teams through two mergers. After leaving GiftCertificates.com, Mr. Stanton was Managing Director of a boutique consulting firm where he provided operational advice and analysis to the management teams of multiple companies. Prior to GiftCertificates.com, Mr. Stanton was an independent consultant specializing in business strategies for new media and e-commerce initiatives. Beyond business, he is a frequent speaker on the topic of "Defining the Essence of Ourselves" and blends such inspirational topics with his love of technology and how it can benefit the greater good. He is regarded as a leading speaker in the area of the Semantic Web and is actively involved in raising awareness for Web 3.0 applications. As a result, he has been quoted in the popular press numerous times, ranging from American staples such as the Wall Street Journal all the way to industry-specific news such as CACM. When he's not passionately promoting Bintro and the possibilities of new technology Mr. Stanton can be found with his wife, daughter and son in upstate New York.

**DEPARTMENT OF INFORMATION TECHNOLOGY AND TELECOMMUNICATIONS TESTIMONY
BEFORE THE NEW YORK CITY COUNCIL COMMITTEE ON TECHNOLOGY
RE: INTRO. 029-10 – OPEN DATA STANDARDS FOR CITY AGENCIES
MONDAY, JUNE 21, 2010**

Good morning Chair Garodnick and members of the Council Committee on Technology. My name is Carole Post, the Commissioner of the Department of Information Technology and Telecommunications, or DoITT. Joining me is James Perazzo, Assistant Commissioner for Web and New Media Operations at DoITT. Thank you for the opportunity to testify today on Intro. 029-2010. I would like to take a moment to brief you on the City's advancements with respect to open government and open data.

For the past eight and a half years, the Bloomberg Administration has been making New York City government more open and transparent than it has ever been. The City provides a wealth of information and data, which every day is being made more accessible and interactive. A few examples include the Citywide Performance Reporting tool, the My Neighborhood Statistics feature, NYCMap, the Stimulus Tracker, NYC*SCOUT, and 311Online. All this information and more has been made available at a portal called NYCStat. NYCStat is one example of how the City has proactively aggregated disparate data and information to make it more accessible and user-friendly, eliminating the need for visitors to have to hunt and peck to find what they are looking for. The amount of City information made available via *NYC.gov* today far exceeds anything previously available in the City's long history – and meets or exceeds that of any other city in the world.

In the past year, the City entered the next phase of the open government movement – that of “open data.” As the flood of social networking technologies transforms government in a fundamental sense, the City must remain at the vanguard of that movement. The City will continue its efforts to develop innovative applications, and to make the raw data behind these applications open and available. This is the public's information, and we want to continue making it available in as many ways as we can.

Accordingly, last summer we worked with the City's Economic Development Corporation on the NYC BigApps program. NYC BigApps is a program whereby hundreds of data sets were made available to the public to create and develop new and unique applications and tools for public use. The program resulted in 80 new applications developed by the public, for the public, at essentially no cost to the City. These applications are now widely in use across the City and across the globe by New Yorkers, businesses and visitors.

The 200 datasets that were made available as part of NYC BigApps remain available at the NYC DataMine, which is accessible at *NYC.gov*. The DataMine represents data sets from nearly 30 City agencies and is searchable, sortable and free to the public. DoITT is now working with these agencies to add datasets to and improve the usability of the DataMine for the second round of NYC BigApps later this year.

As transformative as these initiatives have been – and we expect them to continue – we fundamentally agree with the City Council that we can do even more. And institutionalizing the unprecedented gains made by the Bloomberg Administration will ensure for future generations of New Yorkers a City government that is transparent and accountable.

That said, today's proposed legislation presents a number of fiscal, operational, and technical considerations that may be problematic for the City. Chief among these are concerns about establishing reasonable limits on the use of data to preserve the integrity and capacity of a universal warehousing system.

While we agree with the Council that ideally, every dataset that does not pose a security threat, compromise public safety, or contain personally identifiable information would be publicly available, that is neither fiscally nor operationally feasible in the short term. To really get open data right, we would propose an approach that would seek to classify data in terms of established criteria such as technical availability, timing and frequency of updates, cost to implement, and, ultimately, value to the public. We would support a clear set of standards around what types of data agencies need to publish and when, with certain minimum citywide guidelines. While as currently drafted Intro. 29 speaks to these ideas in part, we believe much of it remains somewhat loosely defined to move forward without revision. The Administration will seek the opportunity to better survey and qualify the criteria by which agencies are required to categorize and disseminate their data.

Therefore, we are now meeting with City agencies to assess in more detail the challenges and impacts posed by this legislation, during which we will reach consensus on the legal and operational considerations necessary to build the broad support open data legislation deserves. It was just such a collaborative approach that enabled the Mayor's Office of Operations to develop the Citywide Performance Reporting tool. As we continue these discussions, we would like to work closely with the Council to find common ground on comprehensive open data legislation that can have substantial and lasting impact on the way City government develops and shares information.

This approach will take time, but what we hope to establish as a result is an achievable and realistic path by which the City can make more public data centrally accessible online. And we hope that non-Mayoral City agencies like the City Council, Comptroller, Public Advocate, and community board offices would also classify and contribute their data as part of these efforts.

The Bloomberg Administration has consistently worked at creating a new City government paradigm regarding data, believing that it should be open by default *unless* there is a compelling reason – usually privacy or security-related – to keep it closed. We look forward to working with the Council on crafting meaningful legislation to that end.

This concludes my prepared testimony, and we will now be pleased to address any questions.

Thank you.

EMPIRE CENTER
FOR NEW YORK STATE POLICY
A project of the Manhattan Institute for Policy Research

Testimony by Tim Hoefer

Director of Operations, Empire Center for New York State Policy
Before the New York City Council Committee on Technology in Government
June 21, 2010

Thank you for inviting me to testify today. My name is Tim Hoefer, and I am the director of operations for the Manhattan Institute's Empire Center for New York State Policy. The Manhattan Institute is a nonpartisan, not-for-profit think tank, and the Empire Center is an Albany-based project of the Institute that focuses on New York state and local government.

Promoting better transparency and accountability in government is one of the Empire Center's major, ongoing priorities. As a result, we take a strong focus on ensuring public access to government records. And so I would like to begin by commending Chair Garodnick and the Committee for your work on the very important issue of data accessibility.

Nearly two years ago, we launched our own open government project – a website known as SeeThroughNY.net. This site gives the public unrestricted access to millions of pieces of public information – including searchable databases of state and municipal employee salaries and pensions; collective bargaining agreements; state legislative expenditure data; member-item expenditures; and a benchmarking feature to compare local government spending.

To gather this information, we have filed more than 1,500 Freedom of Information Law requests during a two-year period. In the process, we have heard many different explanations or excuses for failure to comply fully or on a timely basis with the state FOI law. My favorite may be the time a public information officer told me his daughter – a high school freshman – was on a field trip. Since she helped him with his email and preparing files, he needed to wait for her return before he could fulfill my request.

Some high-profile government entities – including the City of New York – often complain to us that agency resources are strained by the necessity of replying to numerous FOIL requests from the public and the news media. But today's technology, specifically the Internet, presents a solution for that problem.

All public information should be proactively disclosed on the Internet, starting with expenditure, budget and payroll records that will give taxpayers a clearer view of how the bulk of their tax dollars are being spent. This would also free agencies of the time-consuming burden of processing multiple FOIL requests for different slices of the same material. It would be a win-win for citizens and for government alike.

A few agencies in New York State are already pursuing this strategy. Last year, for example, the State Senate began posting and updating its payroll every two weeks in a format accessible even to those who aren't computer savvy. The Senate also has begun posting its bi-annual expenditure reports in electronic form. From the Empire Center's perspective alone, that translates into at least three fewer FOIL requests a year – which also means three fewer FOIL transactions that the Senate staff has to handle. The Senate Majority took the initiative in this case. In a short period of time,

without a significant expenditure, Senate staff was able to develop, format and implement a simple, yet effective means to make data available. The City Council could do the same thing.

Other examples of pre-emptive disclosure include the state comptroller's OpenBookNewYork website, which includes a constantly updated and searchable list of thousands of state government contracts; and the state attorney general's SunlightNY website, which allows searches and comparisons of state legislative activity, lobbying reports, campaign contributions, and charitable reports.

The bill before you envisions a three-year process for developing and implementing sophisticated open data standards for the release of public information. Much of the public information in the possession of city agencies could and should be made available much sooner, without the need for extensive and costly new programming. Here are four ways to do it:

- 1) Standardize all publicly available data into the most simple and commonly used electronic document formats: plain text, comma-delimited text, spreadsheets and searchable PDFs.
- 2) Post the records for downloading from simple web pages linked prominently on existing agency websites. No elaborate bells, whistles or user tools are necessary; a list of links and brief descriptions will suffice. Even if the data are centrally warehoused with the Department of Information Technology and Telecommunications, links to downloadable records should also be posted on agency pages.
- 3) Require the immediate posting of all newly generated public records, in the same simple formats, as a matter of routine.
- 4) Update records of financial transactions, contracts and payrolls as frequently as possible and post existing electronic records to the public portals within 12 months, rather than 36.
- 5) Non-electronic records should be posted as they are FOIled starting immediately. As the agency is already required to answer the FOIL request by law, this method would add no extra burden to the agency, merely a change in process by which it complies.

The overwhelmingly positive public response to our SeeThroughNY website – which over the past two years has attracted over 2.7 million unique visitors, who have downloaded 9.5 million pages of information – convinces us that New Yorkers are eager to seize the opportunity the Internet provides to let them see how their tax dollars are being spent. There is no need to make them wait up to three more years. It can and should start now.

I will be happy to take your questions.



CITIZENS UNION OF THE CITY OF NEW YORK
Testimony to the New York City Council Committee on Technology in
Government on Intro 29 – to create open data standards
June 21, 2010

Good afternoon Chair Garodnick and other members of the Committee on Technology in Government. My name is Rachael Fauss, and I am the Policy and Research Manager for Citizens Union of the City of New York, an independent, nonpartisan civic organization of New Yorkers that promotes good government and advances political reform in our city and state. We thank you, Chair Garodnick, for holding this hearing on Intro 29, which would create a single portal for City government data, create open data standards for City agencies and ensure increased public access to this important information. We also thank Councilmember Brewer for her continued leadership on increasing public access to government information through technology and for reintroducing this legislation.

Citizens Union continues to believe that it is critically important that the City take steps to make government more transparent. Increased access to government data, information and reports will allow the public to assess government performance and decision-making and ensures that citizens can hold their elected officials accountable. As we have testified to before this committee in previous hearings, we believe that efforts to provide more government documents online can also save government resources and time, because it would eliminate many of the formal and informal requests to agency personnel for basic information already provided in existing government reports and other documents.

Citizens Union will be providing recommendations in this area to the City Charter Revision Commission, building off of legislation such as Intro 29, as well as efforts of the Mayor's office with websites such as DataMine and NYCStat. Efforts in other cities and at the federal government to create data web sites such as data.gov, San Francisco's datasf.org, as well as data websites from Seattle and Washington, D.C. have also paved the way for increased access to information, and we believe that it is time for the City of New York to create a similar site to consolidate government data, reports and information.

Having testified last year in favor of the previous version of this legislation, Into 991 of 2009, we would like to focus on those aspects of the bill that have changed, while summarizing its key components. Citizens Union also supports Intro No. 29 of 2010, and would like to propose a number of recommendations to strengthen the legislation. The bill has three major sections, which we will address separately: public data availability, creation of technical standards and Internet data set policy, and the agency compliance plan and roll-out timetable.

A. Public Data Availability

Citizens Union supports the creation of a single web portal to host all City agency data that is required to be publicly accessible proposed in Intro 29. Data would be available in its raw form and viewable

through web browsers, and where practical, mobile devices. Different from Intro 991, this legislation does not require the posting of reports, files, accounts or records other than data.

We have previously testified before the City Council's Committee on Technology in Government on this issue, recommending that a City government website be created as a "one-stop shop" for City government publications, data and information. Intro 29 would create another government website to house data, in conjunction with other existing city websites such as DataMine, CityStat, and the Department of Records and Information Services website, which publishes annual reports from city agencies pursuant to Local Law 11 of 2003. While we believe that a city website dedicated to release of data, particularly data that is not processed, will be an important addition, it will nonetheless result in a further dispersal of information, rather than consolidating information in a singular location. If all city government data and reports, as well as other important information, were housed on a singular web portal, Citizens Union believes that there would be less confusion among the public as to where to find such information. This could be accomplished in stages, by first consolidating existing data, reports and publications that are online, and then proactively posting other information which is public but not readily available on the internet, similar to the process outlined in this legislation for data. Citizens Union does not underestimate the difficulty of this task, but believes that it is ultimately where the City should go in terms of the release of public information.

Citizens Union also supports Intro 29's efforts to make public data more easily accessible and useful such as requiring the use web syndication technology, requiring records to be presented and structured in a format that permits automated processing, and not having restrictions on access or use of documents. Tools such as web syndication technology such as Really Simple Syndication (RSS), which notify the public of updates to specific city data or by agency, will allow the users to be immediately notified of data of interest to them, similar to how they might subscribe to news feeds. Timely access through this technology ensures that the public can weigh in on important decisions that are made by government and effectively hold it accountable. Formats that allow automated processing will allow users to more easily process and analyze government data, as well as allow for the development of applications to creatively engage the public, as seen with the City's recent effort with BigApps. Lastly, Citizen Union supports not having registration requirements to access data, as there are many other ways to ensure that access is not abused such as tracking the IP addresses of users.

B. Technical Standards and Internet Record Policy

Citizens Union supports the creation of an Internet record policy and technical standards manual on web publishing and e-government for City agencies through a consensus approach, but believes there should be greater specificity in the bill regarding the selection of voluntary consensus bodies, standards, and the public process for weighing in on such standards. Citizens Union recommends that the bill be modified to clarify how consensus bodies would be selected and under what criteria, as well as the process by which DOITT would develop standards. The composition of such bodies is crucial to ensuring that a broad base of stakeholders is represented, and while Citizens Union does not believe that it is necessary to mandate who should be represented, the bill could require DOITT to report on the reasons for choosing particular bodies. Additionally, the bill should require the opportunity for general public comment throughout the standards development process.

C. Agency Compliance Plan

Citizens Union supports the goals of the agency compliance plan section of Intro 29, but believes that the current date for the start of implementation of July 5, 2010 is too soon. DOITT would be responsible for creating an Internet data set policy and technical standards and the publishing of a manual regarding such standards for city agencies by July 5, 2010. Under the bill, consultation on such standards with voluntary consensus bodies would also have to be achieved prior to this date. City agencies would also be required to develop a compliance plan by July 5, 2010, which would include a full accounting of all public records under control of the agency and how such data sets have been classified. We believe that these dates are not achievable at this time, and that city agencies should be given some greater lag time after DOITT's release of its technical standards and manual, as agency compliance plans would be in part dependent on the standards set by DOITT.

Also with regard to implementation, the legislation sets forth three separate classes of documents: immediate, legacy, and priority. The three classifications provide for a roll-out period in which "immediate" records would be required to be posted after January 3, 2011, "priority" records would be posted after January 2, 2012, and "legacy" documents would be posted after December 2, 2013. Citizens Union supports this approach to provide roll-out periods for different classifications of records, as it will ease agencies' transition in posting public data. We are pleased that the bill has been amended from its previous version to explicitly require agencies to detail the reasons why records have been classified in the particular categories, as was recommended in testimony provided by Citizens Union last year. We believe that this will provide greater transparency and allow the Council and Mayor to understand the rationale behind classifications as well as the technical limitations faced by agencies. Further, requiring this documentation will provide greater confidence to the public that documents are not being withheld from immediate posting unnecessarily.

We are also pleased that the bill has been amended to require an annual update from agencies regarding their compliance. Citizens Union recommends that further reporting could be required of DOITT which could include statistics on the number and types of records available online, the number of hits received by the web portal, and other issues related to implementation. Additionally, the bill could require DOITT to hold a public hearing or use focus groups to assess the user-friendliness of the web portal, solicit recommendations for how to improve the site, and evaluate the timeliness of record posting.

We urge the Council to promptly pass this legislation and consider further efforts to improve its implementation as recommended in our testimony. Additionally, we continue to urge the Council to examine other proposals which would open up City government information, such as requiring the City Record to be published for free online, and requiring city agencies, commissions, the City Council and other city entities such as the Board of Elections to webcast and record their meetings and hearings which are subject to the Open Meetings Law.

Citizens Union appreciates the opportunity to share its views and would welcome the opportunity to work with the Council further on ways to continue to improve public access to important government information.

Testimony by
Deanna Bitetti, Associate Director of Common Cause/New York
to the
New York City Council Committee on Technology in Government
Re: Open Data standards for all city agencies
June 21, 2010

Good morning Chair Garodnick and Council Woman Brewer and members of the Committee on Technology in Government. Thank you for the opportunity to speak today. My name is Deanna Bitetti, and I am the Associate Director of Common Cause/New York. Common Cause/NY is a non-partisan, non-profit citizens' lobby and a leading force in the battle for honest and accountable government. Common Cause fights to strengthen public participation and faith in our institutions of self-government and to ensure that government and the political processes serve the general interest, and not simply the special interests.

Thank you for this opportunity to discuss how government transparency can be expanded through the creative use of developing technologies. The stated intention of Local Law 11 of 2003, a groundbreaking bill in its own right sponsored by Council Member Brewer, was to position New York City as "leading the nation in using information technologies to improve the efficiency and accessibility of municipal government," and using the Internet as one of the most integral means of achieving these lofty goals. Many local governments are figuring out how to use the Internet to make government data more accessible. The goal is to utilize the technological power and usefulness of Web sites and mobile applications — and perhaps even foment a change in how citizens think about their city and its government. Open data models lend themselves to creating a more inclusive, accountable and transparent government — a cornerstone of our democratic institutions and democratic beliefs.

Int. No. 29 before us today would further the stated goals of Local Law 11 by clarifying the rules of the road for City agencies and by requiring City records to be made available in convenient and usable formats. The provision of this bill that would make data sets publicly available through linkage with the city web portal, in a manner that is easily accessible, promotes the public interest by allowing data sets to be meaningfully reviewed and utilized by the citizenry using all available technological resources such as computers, cell phones or pdas. In the age of cell phones, where internet browsing is readily available at an individual's fingertips, allowing users to access data through a single web portal that is clearly visible from mobile devices equipped for such viewing, helps to engage a broad range of constituencies throughout the boroughs.

The provision that "**all public records shall also be made available in their raw or unprocessed form**" is the right step in making sure that the integrity of the data remains intact and there is no perception that data that has been aggregated or compiled in any subjective manner. Raw data allows for a more thorough review of information and allows individuals to assess programs and policies on an objective basis. As an organization that summarily compiles and analyses data, this provision will greatly increase the ability of organizations, non profits and individuals alike to independently review programs and agency effectiveness as well as become more aware of the issues and caseloads facing respective city agencies.

Testimony before the Committee on Technology in Government

The intention of this bill that "**All public records shall be updated as often as necessary to preserve the integrity and usefulness of the records**" also helps to maintain the continuous flow of open data to the public and creates a paradigm of best practices for City agency reporting. Too often data sets are outdated or are not updated in real time, creating obstacles for those that are looking for information that will help them to better serve their communities – whether it is information regarding property sales in their neighborhood or searching for a Department of Buildings issued permit or the number of violations at a specific site.

The bill's requirement that each agency craft a compliance plan further insures the integrity of the data and reflects the willingness of our government to be more responsive to the constituencies it represents. This will further insure constituency of data and data sets throughout government agencies. It allows agencies to create a paradigm for best practices for open government – and a more open government creates an atmosphere of inclusion and accountability to the people.

While Common Cause/NY believes that Int. No. 29 does further the creation of an open data standard and sets clearly defined guidelines for how to distribute data in a meaningful way, we do have some recommendations that we hope the Committee would take into consideration.

In February 2009, we urged the Council to mandate that Local Law 11 should establish administrative mechanisms allowing individuals to seek and obtain correction of information maintained and disseminated by the agency that does not comply with the established quality standards. This is a recommendation that does not seem to be included. We urge the Council to consider amending the proposal to require the record policy and technical standards drafted to specifically address mechanisms for public input and oversight regarding any short-comings of the data available. This would complement the aforementioned provisions already in the bill that seeks to maintain the data's integrity and timeliness.

In February 2009, we urged the Council to require all agencies to report annually the number and nature of complaints received by the agency regarding the established guidelines, and how these complaints were addressed-similar to what was instituted in the City's 311 system- with the advocacy of Council Member Brewer. We urged this report to be provided to the Mayor, Public Advocate, Comptroller, City Council, and be made publicly available.

Echoing the concerns of the last point, it is critical the public is able to maintain a dialogue with the City as online information sharing continues to expand. If New Yorkers making use of this expanded information identify short-comings in the substance or manner in which data is made available, there must be mechanisms to alert DoITT or other appropriate City personnel, as well as defined 'next steps' such personnel must take in order to rectify such short-comings. Such complaints should be tracked to ensure they are dutifully addressed and this tracking information should be made available publicly. Simple 'comment' features such as you find on blogs and on-line submission forms are two simple ways to allow the public to provide their thoughts and concerns to the relevant agency and DoITT. In any case, a more "interactive" approach is warranted.

Int. 29 would be a great step forward for the City of New York. New York is a major center for Internet innovation, and allowing public access to information also creates more innovation in the data mining community. New York City is moving towards an interconnected system of public and private civic

Testimony before the Committee on Technology in Government

technologies, and should the introduction be signed into law, it would place New York among the leading municipalities in terms of government transparency

Thank you once again for this opportunity to testify before you today. Common Cause/NY looks forward to working with you on this issue.

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I represent: _____

Address: _____

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Name: LIZ HODES

Address: 540 Pacific St Brooklyn

I represent: DIGITAL DEMOCRACY

Address: 109 W. 27th St, New York

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Name: Andrew Hopper

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Address: 250 Broadway

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Address: 148 Lafayette St, Floor 12, NYC, 10013

I represent: Open Plans

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I represent: Manhattan Institute

Address: _____

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Name: Thomas Lowenbaupt

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I represent: connecting.nyc INC

Address: SAMP

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Name: DONNI MORRILL

Address: 201 W 77 ST #1512 NY NY 10024

I represent: NEW YORK TECHNICAL COUNCIL

Address: 340 W 39 ST FL 11 NY NY 10018

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Name: AARON BROWN

Address: ~~76 Ninth Ave, NY, NY 10011~~ 19 Sans Drive
Croton on Hudson, NY 10520

I represent: Google, Inc

Address: 76 Ninth Ave, NY, NY 10011

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I represent: DoIT

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Address: _____

I represent: Do ITT

Address: _____

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(PLEASE PRINT)
Name: Todd Stavis

Address: 3401 P St. New Wash DC

I represent: Secratg -

Address: Seattle WA

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Name: Jam Brookfield

Address: AB

I represent: ITAC

Address: 253 Bway

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Name: BEN BERKOWITZ
Address: 908 STATE ST NEW HAVEN, CT
I represent: See Click Fix
Address: _____

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Name: Rachael Fauss, Policy & Research Manager
Address: _____
I represent: Citizens Union
Address: 299 Broadway NY

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Name: Dylan Goetz
Address: 343 13th St
I represent: Roadify
Address: _____

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Name: ANDREW BRUST

Address: 308 W 4TH ST NYC 10014

I represent: 26 NY 62 W 45TH ST NYC 10036

Address: _____

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Name: RAY GARCIA

Address: 304 W 88 NYC

I represent: Alter work.com

Address: NYC

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Name:

Deanna Bitchi

Address:

74 Trinity Place, NY, NY 10006

I represent:

Common Cause/NY

Address:

74 Trinity place, NY NY 10006

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Name:

DAVID WEBBER

Address:

9005

I represent: _____

Address: _____

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