THE WHITE HOUSE

WASHINGTON

April 29, 2014

The Honorable Mayor Mike Duggan
The Mayor of Detroit
2 Woodward Avenue, Suite 1126
Detroit, MI 48226

Dear Mayor Duggan:

The Obama Administration is committed to partnering with the City of Detroit—its citizens, local leaders, and community stakeholders—to support Detroit's vision for economic revitalization. As part of this effort, in November, the White House Office of Science and Technology Policy and the National Economic Council convened in Detroit a "Tech Team" of top municipal-government technology officials from across the Nation to participate in two days of meetings with city officials and local private-sector, non-profit, and civic innovators. The goal was to help identify ways technology could be leveraged to complement efforts by local government and the Detroit community to build a strong, vibrant 21st century Detroit.
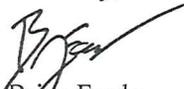
Based on these discussions, the Tech Team developed the attached document, which includes initial impressions and observations and seven suggested areas of focus, including a number of actionable recommendations for leveraging technology to improve citizen services and create new efficiencies.

The seven focus areas are: establishing a Chief Information Officer; evaluating IT infrastructure; promoting civic engagement; opening government-held data; creating a 311 system; improving enterprise geographic information systems (GIS); and enabling online permitting. We're thrilled you have addressed the first focus area, appointing the City's first-ever cabinet-level Chief Information Officer, Beth Niblock. The creation of this new position further solidifies the critical role of technology and innovation in the city's policies and economic revitalization efforts.

As previously announced and in conjunction with the Administration's efforts to support Detroit revitalization, Kresge Foundation funded the Tech Team's trip to Detroit. In addition, the John S. and James L. Knight Foundation and Rock Ventures committed to provide $500,000 to help implement key elements of this report, which could include hiring innovation fellows, making necessary technology upgrades, and supporting local tech-training and mentoring.

We transmit this report on behalf of the Tech Team, which developed this report recognizing that Detroit city officials and leadership are in the best position to determine how to interpret and potentially implement the observations and recommendations, but are confident that collaborative efforts such as this one can support and amplify the important work already underway by the City, its leadership, and local stakeholders.

Sincerely,

Brian Forde
Senior Advisor to the U.S. Chief Technology Officer
The White House Office of Science and Technology Policy

Don Graves
Director, President's Council on Jobs and Competitiveness
The White House

Detroit Tech Team Report

4/29/2013

Allen Square Jr., Chief Information Officer, the City of New Orleans, LA
Beth Niblock, former Chief Information Officer, the City of Louisville, KY
Gail Roper, Chief Information and Community Relations Officer, the City of Raleigh, NC
John Tolva, former Chief Technology Officer, the City of Chicago, IL
Nigel Jacob, Co-founder of the Office of New Urban Mechanics, the City of Boston, MA

Detroit Tech Team Report

I.   Introduction

In November, in coordination with the White House Office of Science & Technology Policy (OSTP) and the National Economic Council (NEC), the City of Detroit hosted a team of top municipal-government technology officials from across the nation to meet with city officials and other local leaders and stakeholders. The goal was to brainstorm ways in which technology could be leveraged in support of economic revitalization and improved services for city residents.

The five individuals on this "Tech Team" had led innovative efforts in other cities—Boston, Chicago, Louisville, New Orleans, and Raleigh—that ultimately created significant costs-savings for their respective local governments and facilitated the development of customer-facing tools that made government services easier to access. The officials were:

• **Allen Square Jr.**, Chief Information Officer, the City of New Orleans, LA
• **Beth Niblock**, Chief Information Officer, the City of Louisville, KY
• **Gail Roper**, Chief Information and Community Relations Officer, the City of Raleigh, NC
• **John Tolva**, former Chief Technology Officer, the City of Chicago, IL
• **Nigel Jacob**, Co-founder of the Office of New Urban Mechanics, the City of Boston, MA

In this report, the Tech Team offers its impressions and observations and seven suggested areas of focus, including a number of actionable recommendations for leveraging technology in support of Detroit. The focus areas are:

- **Establishing a Chief Information Officer:** Establish a cabinet-level position within city government charged with leveraging technology and innovation to improve the delivery of government services;
- **Evaluating IT Infrastructure:** Identify opportunities for streamlining government processes and realizing cost-savings in city spending, including areas such as standardizing software applications and consolidating data centers and servers;
- **Promoting Civic Innovation in Detroit:** Leverage the knowledge and expertise of Detroit's lively, diverse civic innovation ecosystem of social and civic entrepreneurs, foundations, and business owners to develop tools and technologies to benefit the City and local residents.
- **Opening Government Data:** Make freely available government data more open and accessible to fuel entrepreneurship, innovation, and economic growth while ensuring privacy and security;
- **Creating a 311 System:** Create a 311 system to improve citizen-relationship management and decrease non-emergency related service requests to emergency lines such as 911;
- **Improving Enterprise Geographic Information System (GIS)**: Facilitate the build-out of citywide enterprise Geographic Information System.
- **Enabling Online Permitting:** Develop and provide the capability for local residents to apply and pay for business, safety, building, and other permits online.

These recommendations and suggested areas of focus can complement and build on work already underway by the City and local stakeholders. The Tech Team is prepared to engage further with the City in support of revitalization efforts and to help build a robust, 21st century Detroit.

II.   Establishing a Chief Information Officer

Overview

Over the last five years many federal, state, and local governments have evolved the role of a Chief Information Officer position to promote the effective use of technology and innovation in order to build more modern, efficient, and effective governments. This individual or office is charged with leveraging technology and innovation to improve the delivery of government services for the public.

Led by municipal Chief Technology, Chief Information and Chief Innovation Officers, these innovation offices have also worked closely with universities, hospitals, corporations, grassroots, non-profits, citizen advocacy groups and civic innovators to leverage the skills and commitment of local communities to solve local issues using technology and innovation. This type of collaboration can range from working with a grassroots organization to capture data-driven insights about blight or crime to developing a partnership with universities to create an "innovation fellows" program to work on local challenges.

Since the Tech Team's visit to the City of Detroit, Mayor Duggan has created and filled the position of Chief Information Officer, a new cabinet-level position in the city. Mayor Duggan recently appointed Beth Niblock, a member of the Tech Team that visited the City of Detroit, to this job. By creating this position the Mayor has solidified the critical role of technology and innovation in a city's policies and policy implementation.

The Tech Team observed that there is a lively civic innovation ecosystem at work within Detroit where social and civic entrepreneurs, foundations, and business owners are working together to build tools and technologies that address significant issues for the city and local residents. The current Detroit IT leadership is positioned to effectively modernize the city's IT infrastructure. Leveraging the knowledge and expertise of the Detroit community and the experience of other cities that have succeeded in this area can be a key to furthering this effort in Detroit.

Building a 21stcentury city requires collaboration among private, public, and civil sectors. In addition, collaboration among cities and sharing lessons learned has played an important role in many cities' ability to successfully leverage technology, including the efforts of Boston, Chicago, Louisville, New Orleans, and Raleigh, which overhauled their municipal government's use of technology in recent years. This type of cross-city collaboration can take many forms, such as the sharing of Request for Proposals (RFP) across cities to see how others have been able to improve procurement services, sharing and using open data policies, and learning from other cities' successful use of civic innovation.

Recommendations

<u>Chief Information Officer (CIO):</u> A cabinet-level role, reporting directly to the Mayor, to manage the City's IT and civic innovation strategy and implementation. Two key suggested areas of focus for this position include: centralizing IT spending and procurement to improve operations and efficiencies across government and identifying which tools and services should be developed by civic and social entrepreneurs (e.g., public transportation tools). In order to provide support to the CIO, the City could position business analysts to work with each department to deeply understand the citizen services they provide, with the goal of applying technology to improve the efficiency and impact of those services.

Deputy Director for Technological Community Engagement: Reporting to the CIO and serving the Mayor and the cabinet as an expert on civic innovation, this role is to serve as the principal point of contact between local government and the civic and social entrepreneur community.

Innovation Fund: Under the supervision of the Mayor and CIO, the Deputy Director for Technological Community Engagement could manage a fund providing capital for small civic innovation projects ($5k – $10k each) being undertaken by members of the community to dramatically improve the delivery of city services.

Citizen Technology Council: Establish a council to provide residents an opportunity to connect with the CIO, Deputy Director for Technological Community Engagement, and other city officials to share suggestions and ideas for improving the delivery of services through technology.

Examples of Technology and Innovation Positions in Cities

Over the last several years several approaches have been taken by mayors to leverage innovation and technology in their cities. These roles generally work with and/or complement the IT group, which is led in most cases by a Chief Information Officer. Below are examples of successful efforts in cities across the United States – all reporting to the city mayor.

The City of Philadelphia: Co-directors of the Mayor's Office of New Urban Mechanics
This position focuses on enabling social entrepreneurs to solve problems facing local government.
Example Projects: FastFWD

The City of San Francisco: Chief Innovation Officer in the Office of Civic Innovation
This position focuses on enabling innovative use of city resources and bringing innovation into government.
Example Projects: ImproveSF, Entrepreneurs in Residence

The City of Chicago: Chief Technology Officer
This position focuses on developing the next generation of IT infrastructure for the City.
Example Projects: Digital Roadmap

The City of Chicago: Chief Data Officer
This position focuses on data mining approaches applied to detecting patterns of activity in the City.
Example Projects: Windy Grid

The City of New York: Chief Analytics Officer
This position focuses on data analysis targeted at finding opportunities to improve operations, find inefficiencies and solve problems in service delivery.
Example Projects: Identify Properties Most at Risk for Fire

The City of Boston: Co-chairs of the Mayor's Office of New Urban Mechanics
This position focuses on building experimental tools and experiences for engaging Boston residents.
Example Projects: StreetBump, Technology for Autism Now

III.   Evaluating Citywide IT Infrastructure

Overview

The "consumerization" of IT by the private sector has empowered local residents and city employees with sophisticated tools, and residents have come to expect similar, powerful tools when working with the municipal government. The need for dynamic civic engagement will only accelerate this shift. The City of Detroit would benefit from an evaluation of its current IT infrastructure and development of an IT strategic plan that would identify key goals the City would like to accomplish and describe how technology can be leveraged to achieve those goals.

When developing its strategic plan, Gail Roper, Chief Information and Community Relations Officer of the City of Raleigh, used the following key questions to make and implement the recommendations below. The City of Detroit could consider using these questions where it applies to their existing and future infrastructure.

Key Questions for Developing a Strategic IT Plan:

- What will the IT organizational structure look like after migrating from one that primarily does programming to one that has significantly moved towards consulting and project management? Examples of possible new or revised areas of need include: Project management office, business relationship managers, and service desk.
- In order to implement emerging technologies, what building blocks, such as a stable network infrastructure, is needed?
- What industry standards will need to be followed and measured? What industry trends need to be taken into account? Cloud, Software as a Service, Platform as a Service?
- In order to successfully implement innovative solutions that drive economic growth and enhance delivery of city services, what structure needs to be in place organizationally and technologically?

Recommendations

1) Implement the Information Technology Infrastructure Library (ITIL) - a set of core practices for IT service management widely used by public and private IT organizations.
2) Create an Enterprise Architecture Group - responsible for creating infrastructure standards, standardization of applications, development platforms, and tools, and to ensure that new tools align with business objectives.
3) Create the Technology and Communications Subcommittee - chaired by a councilperson, the committee is responsible for overseeing and reviewing highly visible technology initiatives prior to the introduction to the full city council.
4) Create the Information Resource Management Committee (IRMC) responsible for reviewing new enterprise technology projects - chaired by the Detroit CIO, and consisting of all city department heads including fire and police chiefs, to provide governance related to enterprise technology projects.
5) Create an "Enterprise Project Management Office" (EPMO) - responsible for supporting the City's Chief Information Officer and the IRMC in overseeing the City's portfolio of technology projects and managing the City's technology investment process. The EPMO is responsible for identifying, evaluating, and prioritizing potential IT investments with the goal of allocating resources to the activities prioritized by the departmental stakeholders that will generate the highest business value.

IV. Promoting Civic Innovation

Overview

In cities large and small across the United States, "civic innovators" are on the rise. These innovators come from a variety of disciplines and are all united in their efforts to bring new methods and approaches (often, but not limited to, technology and design) to bear on the civic problems they see in their communities. These civic innovators work closely with local governments to address relevant, local issues by building tools and solutions for use by local citizens.

Applying technology and design innovations to policy goals can significantly improve the likelihood of initiatives succeeding. There is an active group of grassroots activists, designers, technologists, social entrepreneurs, startups, and civic and anchor institutions (universities, hospitals, churches, etc.) who want to work closely with the City of Detroit.

There are many paths by which the City of Detroit can leverage its dynamic community of civic innovators to build a 21st century city. In other cities, for example, civic innovators have built high-quality web apps, developed sophisticated visualization tools to help citizens understand complex issues in the community, and redesigned the paper forms government uses to gather information from residents.

Recommendations

One of the most effective paths will be to give civic innovators a seat at the table as the City looks to achieve audacious policy goals. To help accomplish this, and to leverage the skills of the Detroit civic innovation community, we recommend creating a new Deputy Director for Technological Community Engagement position, which would be responsible for bringing civic innovators to the policy table. Below are a few examples of how this has been done in other cities:

- Civic User Testing Group: The City of Chicago's Smart Chicago Collaborative initiative, a civic organization devoted to improving lives in Chicago through technology, enables a group of Chicagoans to come together and get paid to test out, review and suggest improvements to civic apps that have been developed by civic hackers and entrepreneurs.
- Code for America Brigade: This movement, anchored by Code for America, an organization that connects developers and designers to local government through fellowships, is one in which local residents come together (on their own time) with local government to solve problems in the community using tech and open data from public sector sources. The Brigade is active in many cities across the United States. A key aspect of the Brigade is that it enables collaboration across cities. For example, in 2013, the Chicago Brigade created a flu shot tracker app that was then used in Boston.
- Hackathons: This model brings members of the community—policymakers, developers, designers and potential users—to address significant policy challenges and is an effective method for building awareness about these challenges and how they can be addressed through technology and design innovation.

V.   Making Freely-Available Government Data More Accessible and Usable

Overview

Cities across America have found that making government-held information more open and accessible to innovators and the public fuels entrepreneurship and economic growth while increasing government transparency and efficiency. Popular examples of open data that have given rise to vibrant innovation and economic growth include transit time data, crime data, and restaurant health inspection data.

In May of 2013, President Obama released an Executive Order declaring that information is a valuable national asset whose value is multiplied when it is made easily accessible to the public. The Executive Order requires that, going forward, data generated by the Federal government be made available in open, machine-readable formats, while appropriately safeguarding privacy, confidentiality, and security. Opening up government data also streamlines intra-governmental and inter-governmental communication and operations, permits the public to assist in identifying efficient solutions for government, and promotes the development and adoption of innovative strategies for social progress.

Key principles relating to open data include:

- Completeness: All raw information from a dataset should be released to the public, except when restricted by law. Metadata defining the raw data and methodology should also be included whenever possible.
- Primacy: Data released should be primary-source data.
- Timeliness: Information should be timely or updated in real time whenever possible.
- Easily Accessible: Information should be easily obtained and used through tools such as an API. Barriers to access include making data available through in-person access or submitting forms, or systems that require browser-restricted technologies.
- Machine readability: Information should be made available in machine-readable formats, including XLS, CSV, or JSON that make it easy for programmers to build tools. PDFs or word documents are difficult formats to extract data from.
- Non-discrimination: Barriers that may discriminate include registration or membership requirements or specifying which applications can access data.
- Use of Commonly Owned Standards: Proprietary software should not be required to access data.
- Licensing: Terms of service, attribution requirements, and restrictions on dissemination are barriers to use of data.
- Permanence: Information should be online in archives in perpetuity with appropriate version-tracking over time.
- Usage costs: There should be no user fees for accessing government data.

Recommendations

Cities across the country including Boston, Chicago, Louisville, Philadelphia and San Francisco have issued open data policies to tap into the power of open data, and we recommend Detroit consider developing an open data policy to help ensure department data is accessible and easy to find and understand. The policy would serve as a guide for departments on how to manage and publish data in accordance with certain defined standards and should be posted online in an open format by the originating department by the end of a term to be defined. The Director of IT

should be charged with creating technical standards guidance for departments. In order to ensure that the policy is effective, compliance plans and progress reports should be scheduled at intervals to be determined.

To prioritize the release of open data, departments should consider whether information embodied in the public data set:

1) Can be used to increase department accountability and responsiveness
2) Improves public knowledge of the department and its operations
3) Furthers the mission of the department
4) Creates economic opportunity
5) Responds to a need or demand identified by public consultation

Suggested Resources

- Open Data Guidebook, City of Philadelphia
- City of Chicago Technology Plan: Initiative #14: Increase and Improve City Data
- Beyond Transparency: Open Data and the Future of Civic Innovation by Brett Goldstein with Lauren Dyson

VI.   Developing a 311 System

Overview

Detroit launched its "One Call to City Hall" 311 system in 2005. Due to cost-cutting measures, the 311 call center ceased operations in June 2012. However, we believe Detroit would benefit from a citizen-relationship management system to reduce the amount of non-emergency-related calls to 911; improve the way residents access government services; increase accountability for service fulfillment by publicly sharing outstanding service requests; foster collaboration between city departments, and enhance the transparency of city operations.

Specifically, the Tech Team envisions a system that would be integrated into Detroit's Enterprise Resource Planning system, a suite of integrated software modules used to help manage city services, and a work-order management system to manage citizen service requests, reducing the amount of non-emergency calls to 911 and lowering emergency-related response costs.

Recommendations

For residents of Detroit, an integrated 311-system/work-order management system would provide a transparent approach to providing resident-centric services. It is imperative that the system provides residents with access to real-time status of their reported issues and concerns. The system should accommodate the multitude of ways residents choose to communicate and engage with the City including through mobile, phone, text, tweet, or Web self-service/email. Further, at an appropriate future time, Detroit should consider implementing an Open311 platform. Open311 will encourage community participation and innovation by opening up 311 reports to the public, allowing anyone to collaborate on the reported issue.

For city management an integrated 311/work order management system would enable data-driven decision-making across the city and break down traditional information silos. The system would provide data for continuous improvement of service delivery and responsiveness to residents by monitoring and measuring performance. The system should feed data into a CityStat program, which can further foster an environment of accountability and transparency.

As an example, Louisville metro government has an integrated 311 call center, work-order management, code-enforcement, planning/review and online permitting system that is provided to the city by the sewer district. The city pays half of the capital and operating costs of the system. The city and the sewer district recently did a major upgrade to the system coupled with an extensive business process re-engineering effort. The city's portion of the project cost $2 million and took 3 years (there was a mayoral change in the middle of the project) to complete.

Resources

- Governing Magazine "Beyond Customer Service: Cities and the Breathtaking Promise of 311"
- Best practice example City of Chicago 311 RFP
- See Click Fix
- See Click Fix - Detroit
- ICMA 311 resource list

VII.   Improving Enterprise Geographic Information Systems (GIS)

Overview

Municipal Geographic Information Systems (GIS) are used by many city departments including fire, police, the assessor, public works, planning, and public utilities. Establishing a position for a strong GIS manager can help facilitate the build-out of a citywide GIS system where various data creators can contribute and retrieve invaluable information to help manage the city. GIS managers need to work closely with the IT department to setup an enterprise geodatabase in the city's database environment.

The Tech Team's assessment of Detroit's capabilities in this domain found that:
- Several departments across the City of Detroit's government, including IT, finance, and the assessor, have GIS capabilities and resources.
- While most departments are on an ESRI platform, the platform versions being used are inconsistent and in some cases incompatible. There are also some departments using other tools such as MapInfo, Intergraph, and AutoCAD.
- There is an opportunity to improve GIS governance and fill gaps in deployed technologies.

Recommendations

The following set of recommendations could help improve GIS governance and utilization by city officials, civic innovators and local citizens.
1) Identify a lead GIS department and ensure that a strong GIS manager is in place. This GIS manager must have the leadership capabilities to guide the development of a tool to be used across many departments.
2) Standardize tools and licensing throughout departments. Consider:
    a) using ESRI's Local Government Information Model (LGIM), which contains the framework and standards used by local governments and facilitates easy adoption of many out of the box maps and applications;
    b) consolidating address data of the municipal (point based) and street type (range based), primarily from permitting, planning, tax assessor, public works, lots and parcels and the 911 CAD system;
    c) adopting the LGIM for addressing, to help set a standard for bringing in addresses from these various sources;
    d) collaborating with state governments and regional transportation agencies, which can be great allies for local government GIS efforts and often can contribute aerial imagery.
3) Look at Open Source GIS to understand benefits and limitations but do not over-rely on crowd sourcing and open-sourced data for the building blocks of local government GIS.
    a) Source data must come from the City's departments and the true data stewards;
    b) GIS road network and asset infrastructure must come from public works/engineering;
    c) Lots and parcels and redevelopment plans will come from the assessor and planning departments;
    d) Use aggregate data from departments to establish an authoritative master address list for the city;
    e) Augment city data as appropriate with GIS data gathered by the private sector and non-profits.
4) Consider the development of an official Unified Development Organization (UDO) for revitalization efforts. Other cities with UDO's include:

a) http://bloomington.in.gov/udo
b) http://www.raleighnc.gov/business/content/PlanDev/Articles/DevServ/NewRaleighCode.html
c) http://durhamnc.gov/ich/cb/ccpd/Pages/Durham-Unified-Development-Ordinance.aspx
d) http://decaturish.com/2013/10/30/city-of-decatur-holding-public-meetings-on-udo/
e) http://cityofls.net/Development/Zoning/Unified-Development-Ordinance.aspx

Case Study: The City of New Orleans

- Initial Setup or Upgrade to Common ESRI Version $200-300k
  - Cost could be lower if City has an internal resource that can champion and complete work
- Annual Cost of Enterprise System $695k
  - Salary and benefits of City team $350k
  - ESRI Enterprise License Agreement (ELA) $160k (covers licenses for partner agencies as well
  - Contractor Budget $100k (technology support)
  - Pictometry $85k per year

VIII.   <u>**Enabling Online Permitting**</u>

Overview

Municipal governments across the country are leveraging online and mobile platforms to make it easier for residents to access government services, improving customer service and government efficiency. In our experience, one area where municipalities have found success in significantly improving customer service is by enabling residents and business owners to apply online for residential, commercial, zoning, and business permits. To deliver an online permitting service in an effective way requires an enterprise permitting technology solution with well-documented and optimized business processes.

Key elements to successful deployment of online permitting include:
- A GIS-based enterprise permitting tool (e.g., Tyler, Accela, LAMA, etc.) that incorporates master addresses and LAMA databases
- Optimized and documented business processes configured into the tool
- Service Level Agreements (SLAs) documented and published (e.g., "mechanical permit to be reviewed and issued within two days.")

Recommendations

1) Review current technology implementation and business processes for each department to ensure they are capable of supporting a citywide online application portal
    o Data must be consistently accurate
    o Ensure that new system exports-permitting performance data for city management and residents
2) Host an interactive process mapping and improvement workshop with each permitting agency to ensure compatibility with enterprise permitting software. (The software solution is a vehicle for improved customer service, but process and organizational changes must be owned by staff to be effective.)
    o Identify and involve key stakeholders to define most important changes and high-priority outcomes.
    o If the majority of permits issued require participation of multiple departments, consider implementing a physical and or virtual one-stop-shop to provide a seamless and efficient experience for local residents and business owners.
    o Define what is perceived as a permit by residents and business owners and staff, and develop a scope of work that can be broken into an agile development framework.
3) Emphasize a culture of continuous improvement and monitor the performance metrics that matter most.
    o CityStat can foster an environment of continuous improvement and transparency

Case Study: The City of New Orleans
- In 2012, the City of New Orleans initiated a project to replace its legacy permitting and code enforcement tool with a new enterprise technology solution. The project included the implementation of a physical and virtual (online) <u>one-stop-shop</u>.
- The project cost between $1-1.5M and required 15 months to implement
    o Technology and new business processes were implemented within 6 months
    o One-stop and online platform required an additional 9 months

**APPENDIX: THE CITY OF RALEIGH
CITYWIDE IT INFRASTRUCTURE
BEST PRACTICES AND PROCESSES**

Strategic Planning

There is no magic involved in an IT strategic plan. A good one, like other types of plans, is primarily a road map. It is not a technical document about bits and bytes or a compendium of short-term tactical plans. Rather, a good strategic plan defines where you are trying to go and tells you what steps you need to take to get there. It tells how you can use IT effectively as a business tool and how you can use technology to help the organization transform itself.

The term *competitive* IT strategic plan is used in recognition of the fact that municipal government IT organizations are very much in competition with private-sector services to provide technology solutions for city employees. The diverse internal and external communities that a local government IT department serves are no longer compliant "users" for whom the internal IT organization is the only option. The users are our customers— savvy, demanding people who see private companies and other local governments harnessing technology to work more efficiently and effectively and they want the same access to the latest, internet-based, technology to best serve the public. The "consumerization" of IT has enabled users to look beyond a City's IT department for simple and effective tech solutions. In other words, if users do not get the services they need from IT, they will get it elsewhere. The push towards civic engagement will only accelerate this shift.

An IT Strategic Plan Should Answer the Following Questions:

- What will the IT organizational structure look like when migrating from one that primarily does programming to one that has significantly moved towards consulting and project management? Examples include: Project management office, business relationship managers, service desk, etc.
- In order to implement emerging technologies, what building blocks, such as a stable network infrastructure, do we need?
- What industry standards will we need to follow and measure? What industry trends do we need to take into account? Cloud, Software as a Service, Platform as a Service?
- Before we can successfully implement innovative solutions that drive economic growth and enhance delivery of city services, what structure do we need to have in place organizationally and technologically?

IT Strategic Plan is also a Business Plan

In addition to providing a vision and road map, the IT strategic plan clearly describes how the city will benefit as the plan is implemented. These benefits include a return on investment and the total cost of ownership of computer hardware, software, and other assets in addition to the value created through the investment in IT. Lastly, the plan describes the "added value" created when technological innovation is combined with business value.

For example, improved culture, increased productivity, and an effective organizational restructuring can be achieved through successful implementation of an Enterprise Resource Planning (ERP) system that integrates accounting, purchasing, bidding, human resources, and asset management processes.

A good strategic plan can help IT become competitive and customer centric by building trust. We begin to share information with the organization. We become partners with our customers. We develop goals and timetables together. As we put more and more open data on our portals, we begin to see that our external customers and our citizens begin to see the doors of city hall swing open. You cannot put a dollar figure on that kind of value.

Many elected officials, managers, and even IT professionals do not realize that local government IT infrastructure can become a powerful economic development tool affecting the entire community. Community broadband efforts, fiber and conduit strategies, and building infrastructure connectivity have all become mechanisms to drive down the cost of operations and serve the community at-large. In cities like Kansas City it has become a bargaining tool for companies like Google to capitalize on municipal-owned assets to deploy high-speed fiber to the home networks.

The City's reputation and technological amenities are as important to businesses as they are to individuals. Companies want to do business in the most efficient way possible, and when they conduct business with local government and they need those transactions to go well.

How We Began the Strategic Planning Process

We enlisted the help of the departments. The process is well defined in the City of Raleigh Strategic Plan. We have used the same strategy in multiple cities. The process has to focus on the departments and how they see the success of their organization. We ask questions about the barriers to their success and have them to come together to explain how they want to conduct business. Their responses are recorded and we look for common technological needs like dispatching, work process flow, asset management, etc. After gathering the information, there is a weighted criterion given to priorities and we begin to define the strategic projects that will become the focus for the enterprise project management office. Here's the link: IT Strategic Plan

Change Management

Many cities across the country have implemented the Information Technology Infrastructure Library (ITIL). ITIL is a set of core practices for IT service management widely used by public and private IT organizations. We adopted ITIL because it has a certification track that was affordable for the organization and it was prescriptive in terms of checklists and governance. The change management process is significant as the IT organization begins to implement multiple systems into the infrastructure. The process that we have used for the last several years is the ITIL Change Management process. We implemented ITIL Change Management at a basic level and have added more sophisticated processes after becoming familiar with the Change Advisory Board (CAB) and its value. Here is an excellent step process for implementing the Change Management Process: http://itsmtransition.com/2013/02/how-to-implement-basic-itil-change-management/. The value that we have derived comes from core practices that are standardized over time and that integrate processes that are repeatable. We have measured the decline of outages due to the implementation of under tested technologies, the success rate of projects delivered on time and under budget, etc.

Enterprise Architecture (EA)

Having an enterprise architecture group for creating infrastructure standards and implementation patterns can assist in introducing new products into the market and provide integration strategies

for security. The overall responsibility for the EA is to keep documentation of the current state of the architecture, and to give credence to the desired state. The roadmaps developed by the EA should align with business objectives. The technical architecture focuses on creating infrastructure standards and the implementation integration. Solution architecture involves standardization of applications development platforms and tools; web development benefits tremendously from solutions architecture. Due to constraints of resources we have combined the EA role to include both the infrastructure and solutions focus.

Some of the measurable financial benefits of the Enterprise Architecture function:

- Annual savings from standardized purchasing agreements
- Percentage spending on strategic enterprise projects
- Annual savings from digitization and enhanced process efficiency
- Percentage of revenue and transactions processed through enterprise standard platforms

IT Governance Process

The Technology and Communications Subcommittee (T&C)

The Technology and Communications Subcommittee (T&C) is a subcommittee of the Raleigh City Council. It is chaired by a councilperson and has two other councilors that sit on the committee. The committee is responsible for overseeing and reviewing highly visible technology initiatives prior to the introduction to the full city council. The benefits to the IT organization are significantly related to the buy in process prior to full council exposure. The committee poses relevant questions and becomes acquainted with the barriers and benefits of technology solutions. This pre-review of technology efforts assists in council buy-in and education. It is a public meeting that can promote the adoption and approval of multiple council persons based on a clear understanding of the technological benefits and investment. The Chief Information Officer (CIO) works with the committee chair to organize the agenda and all presentations given by staff. The committee forum has also been utilized by various councilors to make recommendations on technology efficiencies.

The Information Resource Management Committee (IRMC)

The Information Resource Management Committee (IRMC) was established in 2002 to provide governance related to enterprise technology projects. The CIO is responsible for the committee agenda and the scheduling of the committee meeting. The attendees consist of all department heads, including fire and police chiefs, the departmental key financial staff, and other designees as defined by the department head. The key objectives of the IRMC are to:

- Identify opportunities for the application of information technology resources and services
- Maximize cost effectiveness and promote inter-departmental sharing of information technology resources and services
- Establish and enforce quality review and expenditure review procedures for major information projects
- Define the key strategic projects for adoption and funding

The IT governance process determines how the department manages demand, delivers value, and aligns with the priorities of the organization. The demand for IT services has increased

significantly in the past few years. At the same time, technology and business needs have become more complex. Continuing to mature processes within the organization will provide the IRMC appropriate information to drive decisions about the use of technology to ensure organizational success.

In recent years, the IRMC has been a vehicle for reporting and updating the status of multiple projects. While there is a significant value in this, an organization will benefit by extending IT governance maturity. The evolution of IT governance will improve the ability to make solid investment decisions in major areas such as technology architecture, infrastructure, and business applications, as well as to prioritize investment. Extending the governance maturity to improve IT decisions will help determine success in the following areas:

- Ensure IT aligns with the business. IT will focus on aligning with the business and collaborative solutions to minimize redundancy.
- Ensure IT manages vital resources. IT will realize the optimal investment in and proper management of critical resources.
- Ensure IT delivers value to the business according to the business. IT will concentrate on optimizing expenses and proving value, based on the business needs.
- Ensure IT manages and mitigates risk. IT will safeguard technology assets, address disaster recovery, and ensure continuity of operations.
- Ensure IT manages performance. IT will track and monitor strategy implementation, project success, resource usage, process performance, and service delivery.

Enterprise Project Management Office

The Enterprise Project Management Office (EPMO) was established in 2004 and supports the Chief Information Officer and the IRMC in overseeing the City's portfolio of technology projects and managing the City's technology investment process. The EPMO is responsible for identifying, evaluating, and prioritizing potential IT investments with the goal of allocating resources to the activities prioritized by the departmental stakeholders that will generate the highest business value. To ensure success across the entire technology project portfolio, the EPMO will adopt a tiered governance structure. This governance structure includes steering committees that vary the level of executive involvement based on the phase of the portfolio lifecycle.

It also provides visibility to those executives that are stakeholders in the success and investment of the respective projects. The executive steering committee weighs in on risks and gives input of potential mitigation when appropriate.

Broadband and Fiber Efforts in Municipal Government

Many cities across the country are beginning to look at the deployment of fiber assets as a benefit to economic development and to drive down the cost of telecommunications infrastructure. High-speed, accessible and affordable broadband is becoming an essential infrastructure for education, health care, the enhancement of safe and connected communities, civic engagement, government transparency, and responsiveness.

The Federal Communications Commission (FCC) has completed a national plan "for use of broadband infrastructure and services in advancing consumer welfare, civic participation, public safety and homeland security, community development, health care delivery, energy

independence and efficiency, education, worker training, private sector investment, entrepreneurial activity, job creation and economic growth, and other national purposes." (National Broadband Plan, FCC 2010) and local and state governments are involved in efforts to achieve the recommendations of the "National Broadband Plan".

There are critical strategic fiscal, policy, and planning benefits related to the deployment of fiber for internal use. The approximate cost savings for the connection of city facilities for the City of Raleigh is $500,000 with a 4.5-year return on investment. The installation of fiber was completed in partnership with the public works department's traffic signal project. Many organizations capitalize on the building of new facilities or street and traffic projects to drive down construction costs. Cities like Kansas City and Kansas have used existing city assets as part of larger high-speed fiber to the home implementations. The City of Raleigh and other cities have deployed both large Internet connections at their convention centers to attract high tech conventions and revenues. http://www.govtech.com/e-government/Raleigh-Connected.html

Fiber assets are attractive to private sector partners like Google and AT&T. Several announcements regarding high-speed fiber have been made this year and promise benefits of economic development http://www.kvue.com/news/ATT-announces-which-neighborhoods-will-receive--230594361.html

In February of 2013, several municipalities and universities collaborated to develop a Request For Proposal (RFP) for a high-speed network for the region: http://ncngn.net. The model for broadband is different for the various cities that recognize the value but nonetheless, the trend to investigate the potential of high-speed Internet access as a cost benefit to cities and an economic development asset is being investigated by many cities.

The City of Raleigh is developing a resolution that will define a broadband strategic plan to define the benefits and strategy for future fiber deployment. The strategic plan will identify the value and the barriers to cities embarking on fiber broadband efforts.

APPENDIX: THE CITY OF LOUISVILLE
EMA/METROSAFE (COMBINED DISPATCH) PROJECT SUMMARY

Business Challenge

On January 6, 2003, Louisville became the largest city in nearly three decades to merge its city and county governments. The merger created immediate operational and technical challenges for the City, including interoperability and communications between local public safety agencies and first responders.

Goals & Objectives

- Create a modern communications and information exchange infrastructure to improve the safety of the citizens and first responders of Louisville Metro
- Promote interagency cooperation in public safety and public service joint projects and initiatives
- Promote partnering between public safety and service agencies
- Consolidate communications for former suburban and urban fire, police, local government radio, and emergency medical services in a single facility using common voice and data infrastructure
- Create a co-located and consolidated communications and emergency management facility
- Ensure a continuous availability of critical services
    - Primary facility will be 'site hardened' with redundant infrastructure
    - Additional redundancy will be provided by a true fail over site
- Design, acquire and implement a new Louisville metro-wide wireless and mobile radio infrastructure to support public safety and emergency communications
- Place consolidated communications in a single civilian organization, reporting to an executive director with service level responsibilities to its constituent organizations.
- Implement an alternate communications and emergency management facility should the primary facility become incapacitated.

As an organization, MetroSafe is a joint operation that consolidates communications for 911, the Louisville Metro Police Department, Louisville Fire and Rescue, Local Government Radio, and Louisville Metro Emergency Medical Services. In addition, MetroSafe provides interoperability for all remaining 911 PSAPS, Jefferson County Sheriff's Office, suburban city agencies within Louisville Metro as well as the 13 surrounding counties in Kentucky and Indiana.

Metrosafe Project Overview

The MetroSafe project was responsible for acquiring a facility; developing and implementing adequate infrastructure to support voice, wireless and data communications; implementing proper security; and acquiring and implementing public safety applications to support consolidated communications and public safety interoperability.

Several teams supported the MetroSafe project. Each team was delineated by their specific public safety or operational function; however, most teams contained common members. This ensured that Subject Matter Experts (SME's) were properly allocated across the entire

MetroSafe project organization and communication paths were established within the various teams.

Project Team	Focus
Radio Architecture Team	Acquire and implement a radio architecture that will support MetroSafe's goals and position for future growth
Operations Team	Develop operational procedures that will support MetroSafe's goals and objectives. Ensure NCIC compliance.
CAD Team	Create and maintain a computer aided dispatch (CAD) system that will support MetroSafe's goals and objectives
Voice Architecture Team	Establish a voice/telephony architecture that will support MetroSafe's goals and objectives and position for future growth
Facilities Team	Acquire a facility that will support MetroSafe's goals and position for future growth
Interoperability Team	Address local and regional interoperability issues
911 Team	Monitor / review 911 system for stability and accountability
IT Operations Team	Ensures network/supporting systems are secure and stable. Plans for future growth and needs

Project Phases and Major Milestones

Due to the size and complexity of the project, the steering committee recommended a phased approach to implementing the MetroSafe Project. The project had five distinct phases:

- Phase I – Consolidate and combine public safety communications into one facility (Completed Fall 2005)
- Phase II – Implement new Computer Aided Dispatch (CAD) System (Completed Summer 2006)
- Phase III – Remediate permanent MetroSafe facility and migrate operations; Implement Mobile Voice Radio System (MVRS) (Completed Fall 2009).
- Phase IV – Acquire and deploy Radio Subscriber units for public safety/public service and community partners (Completed Spring 2010)
- Phase V – Mutual Aid, Fire Station Alerting and Additional Tower Site (Completed Fall 2012)

Phase I: Consolidate and combine public safety communications into one facility
In order to create a solid foundation for MetroSafe, it was deemed critical to combine all public safety communications into one facility.
    Major Milestones
- Build out initial 3 site P25 to replace aged infrastructure; completed winter 2004
- Build out Barret facility to consolidate public safety communications; completed fall 2005
- Create interoperability at the console level by use of Motorola Motobridge and new radio consoles completed; fall 2005

- Co-locate existing technologies (CAD and 911 telephony systems); completed fall 2005

Phase II: Implement new Computer Aided Dispatch (CAD) system
A new computer aided dispatch system will allow MetroSafe personnel to operate from one common system across all public safety and public service disciplines.

Major Milestones
- RFP release; completed fall 2004
- Vendor demonstrations; completed winter 2004
- Vendor selection process; completed spring 2005
- Contract Negotiations; completed summer 2005
- Contract approval and project initiation; completed summer 2005
- Hardware and software installation; completed in fall 2005
- Training and implementation; completed in spring 2006

Phase III: Remediation of permanent MetroSafe facility and migration of operations; Begin Implementation of Mobile Voice Radio System (MVRS)

Major Milestones
- Radio RFP release completed summer 2006; Facility remediation RFP completed summer 2007
- Facility remediation; completed spring 2009
- Radio Infrastructure implementation – Civil Phase; completed fall 2009
- Implementation of new 911 voice infrastructure; completed spring 2009
- Migration of existing technology, including CAD and supporting systems; completed spring 2009
- Migration of existing operations to permanent facility; completed spring 2009
- Testing and maintenance of fail over facility (Ongoing)

Phase IV: Complete Radio Infrastructure Build out; Acquire and deploy Radio Subscriber units for public safety/public service and community partners; Mutual Aid, Fire Station Alerting and Additional Tower Site

Major Milestones
- Radio Infrastructure implementation – Engineering phase; completed fall 2009
- Existing subscriber unit inventory and requirement interviews with public safety/service; completed fall 2008
- Initial subscriber order; completed winter 2008 (subsequent subscriber orders placed winter 2009 and summer 2010)
- Migration of existing conventional radio technology [to be used] for mutual aid; completed fall 2011
- Build out and integration of 13th Tower; completed fall 2012
- Subscriber unit deployment/installation; completed fall 2009

Phase V: Mutual Aid, Fire Station Alerting and Additional Tower Site

Major Milestones
- Redundant environmentals (geneset and switchgear) at primary facility

Project Close

The MetroSafe Project was formally closed in winter 2012 with a total cost of approx. 90MM. In addition to the major milestones listed, the project also delivered several other solutions/capabilities, including:
- 911 Telephony system
- Expanded and enhanced VHF mutual aid systems and redundant Fire Alerting systems
- Police Records Management System (RMS)
- EMS records management and patient care system
- N+1 Redundancy on most major systems and environmentals
- Interfaces from CAD to all major records management systems for public safety

Project Costs (Approximates)

PHASE I	PHASE II	PHASE III	PHASE IV	PHASE V
10MM	7 MM	26 MM	46 MM	350K

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