City of Philadelphia IT Strategic Plan

An Inclusive Approach to Crafting Vision & Strategy for Technology Across City Government







Executive Summary

Six years ago, Philadelphia created an Innovation function within the Office of Innovation & Technology to acknowledge the need for government to change its practices: the way it delivers services; the way it communicates, both internally and externally; and perhaps most importantly, the way it addresses and solves challenges in response to public needs. This Technology Strategic Plan is the first of its kind for Philadelphia and attempts to drive change. The plan outlines current as well as future initiatives and strategies aimed at combining and leveraging technology, innovation, engagement, access and efficiency. It also reflects the changing values and roles of the City's technology office in municipal government.

From its inception, the goals of the Plan were threefold:

- 1) draft a document that reflects both internal and public facing work as a City technology strategy;
- 2) highlight the evolution of technology in government – supporting operations and infrastructure while also making technology meaningful to communities and residents; and
- 3) create transparency around the planning process and incorporate opportunities for public engagement and feedback.

From an internal perspective, the plan addresses infrastructure and operations through a focus on improving our underlying support models to better enable work and complete it a timely manner.

Our Process

The creative process supporting this Plan represents important shifts in Philadelphia's government. First, an acknowledgment that the technology office should have a dual focus: supporting critical infrastructure that ensures the continuity of City business operations while also generating external, public-facing initiatives that impact the lives and experiences of Philadelphians. Second, the best way to learn what Philadelphians want and need is to ask and involve them in the planning process. Too often in the City's technology planning, government has not been as collaborative as it could be while formulating policies and programs, and this process represents a distinct contrast to that approach.

- 1. Drew from the expertise of cross-departmental advisory group to solidify themes and form focus groups. The Innovation Management team formed an advisory group of employees from across government to help manage the planning process and engage with the document at various stages of its development. The group's first tasks were to create and agree upon the main themes for the IT Strategic Plan and recommend diverse stakeholders to participate in community engagement focus groups.
- 2. Facilitated focus groups to source diverse ideas. Based on advisory group input, Innovation Management facilitated a series of focus groups with stakeholders representing academia, the civic technology community, the local technology ecosystem, the executive team from the Office of Innovation & Technology (OIT), community-based organizations, and government executive leadership. These stakeholders offered feedback on proposed goals, provided input on what government was doing well, noted room for improvement, and also suggested ways for government to engage the public through technology. Using human-centered design activities, the focus groups allowed the Innovation team to solicit significant amounts of feedback in an organized, creative way and provided foundational content for the IT Strategic Plan.
- 3. Combined similar ideas generated by each focus group. While each focus group was comprised of a specific type of stakeholder, all groups responded to the same questions, which allowed us to combine and compare answers and comments from each session and discover response patterns. Similar ideas were then classified together, allowing us to quickly identify those cited multiple times versus those which were more unique or specific.
- 4. Identified trends across focus groups for each theme and established cohesive goals based on those trends. After categorizing the ideas from all focus groups, Innovation Management identified major trends across thematic topics and turned them into tangible and achievable goals. For example, all ideas related to creating opportunities and programs for employment pipelines led to the goal "Facilitate pipelines for part-time to full-time City technology employment" under Theme 5 in this current plan.
- 5. Categorized goals and created structure for plan. After creating a series of goals that supported our themes, goals were assigned to the most appropriate theme, and Innovation Management created the framework for the IT Strategic Plan itself in partnership with the original employee advisory group.

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Connect municipal
government with our
local entrepreneurial and
university communities
with the goal of
collaboratively solving
urban challenges

The entrepreneurial and university communities bring a unique set of talents and creativity to the Philadelphia technology ecosystem and potentially to government as well. These communities often seek meaningful ways of testing ideas, services, and products, and municipal government offers an engaging partner for conducting research and piloting initiatives in a real-world environment. The City of Philadelphia recognizes the value of these relationships and anticipates connecting these communities with stakeholders inside municipal government to bring fresh thinking to our urban challenges.

Ongoing Initiatives

Innovation Academy - In partnership with Jefferson University, the City of Philadelphia trains its employees in the principles of innovation and how to apply them in a government setting. Employees learn tools and techniques that can be applied in their work to drive innovative thinking and problem solving. In turn, Jefferson University faculty are challenged to identify and refine their methodologies to apply them to real-world problems and goals that municipal employees are trying to tackle in their work.

2019 StartupPHL Venture Program - This new iteration of StartupPHL financially and operationally supports the development of startup companies run by entrepreneurs who demonstrate a socially or economically disadvantaged background that hinders access to traditional forms of capital and founder networks at the pre-seed stage. This program provides grants (\$5,000 to \$25,000) to organizations that can also demonstrate an ability to increase the number of jobs available in the City of Philadelphia.



Pitch & Pilot Program - As part of its SmartCityPHL initiative, the City of Philadelphia will launch the Pitch & Pilot program to create a pipeline for entrepreneurs, startups, and other innovators to pitch ideas and technical solutions that address municipal challenges. This program is designed to spur innovation through partnership, testing, and evaluation. A second component of the Pitch & Pilot program will develop a model for working with local universities on research issues and testing theoretical concepts in a real-world setting. The broader goal for Pitch & Pilot is to create an environment where municipal government can collaborate with entrepreneurial and academic ecosystems to solve persistent urban challenges.

GovLabPHL/Zero Waste and Litter Cabinet - The City of Philadelphia's Zero Waste and Litter Cabinet is a cross-sector group that aims to enhance the city's public spaces through waste and litter reduction. The Cabinet is collaborating with the aforementioned GovLabPHL and partnering with the University of Pennsylvania. This City/university collaboration will deploy an algorithm capable of analyzing existing surveillance footage and pinpointing the moment that illegal dumping occurs.

Explore more opportunities to offer public Wi-Fi

The proliferation of wireless handheld technologies has changed the way residents, businesses, and visitors access information and navigate and explore the city. As Philadelphia positions itself as a global city and aims to provide faster and more efficient services to the public, the City is exploring new ways to enable public Wi-Fi to make it easier and more enjoyable to live, work, and visit.

Ongoing Initiatives

On board WiFi on SEPTA Buses - The Southeastern Pennsylvania Transportation Authority (SEPTA) provides free onboard Wi-Fi services for their riders on select buses as part of a pilot effort.

Free Library's 21st Century Libraries Initiative - The Free Library of Philadelphia renovated five libraries across the city that include access to Wi-Fi, conference rooms, and open conversational spaces. Several of these renovations are focused on creating spaces that will have resources for entrepreneurs or small businesses.



LinkPHL - This initiative is already underway and provides free gigabit speed Wi-Fi at 100 locations through the city by upgrading public spaces with digital kiosks. In addition to Wi-Fi access, kiosks are equipped with tablets to provide access to Philly311 services, City and partner social services, wayfinding applications, and information on exciting city events. The Office of Transportation, Infrastructure, and Sustainability (oTIS) plans further implementation of the LinkPHL kiosks downtown and in the neighborhoods.

Institutional Network (I-Net) - Buildout of the City's Institutional Network (I-Net) is complete, and with it comes new opportunities for providing Internet access at public buildings (health centers, public safety locations, and recreation centers) for both employees and service-seeking residents. As part of the City's most recent cable franchise agreement with Comcast, the I-Net offers high-bandwidth Internet capabilities and the potential for offering City services and other programs in new ways.

Develop additional opportunities for STEM (science, technology, engineering, and math) engagement & programming

Increasing the quality and scale of STEM teaching/mentoring between professionals and underrepresented students has quickly become a national initiative with the goal of expanding and diversifying the workforce in these professions. In Philadelphia, STEM programming has as its primary focus cultivating the next generation of experts and thought leaders in science, technology, engineering and mathematics fields, while also making Philadelphia a globally competitive city that fosters economic opportunities for all.

Ongoing Initiatives

STEMcityPHL - STEMcityPHL is led by the Commerce Department's Office of Workforce Development, with the purpose of increasing STEM proficiency among youth from kindergarten through 12th grade. The longer-term goal of this work is to encourage academic pursuit and eventual employment in STEM fields while diversifying the City's workforce in those occupations. STEMcityPHL supports local programs such as Tech Camp, the Urban Farming Project, STEAM Scholars, and the Regional Junior Science and Humanities Symposium.

Innovation & Technology STEM Mentoring - OIT's
Innovation Management team launched a STEM
mentoring program with Chester A. Arthur School in
South Philadelphia in 2015, developing the program and
conducting three iterations of it at that location. In 2019,
OIT launched a similar program at Gideon Elementary
School in North Philadelphia, drawing representatives
from numerous City departments to participate in
the program. Mentors taught students how municipal
government uses technology to support and engage
communities and deliver services.

STEM Program Asset Map - Created through
STEMcityPHL in 2014 to help individuals locate STEM
education programs in their area, this application
also depicts "STEM deserts"--areas with high youth
populations but little to no STEM programming available.
The City continues to update this platform as STEM
programming increases in Philadelphia.

STEM to STEAM - With the goal of providing students with a more well-rounded knowledge base, the City's Innovation Management team will expand its current STEM program to include Art Education. Incorporating art into traditional STEM programming allows students with an inherent comfort with artistic expression to engage their strengths while also increasing their motivation for learning about science, technology, engineering, and math. The Innovation Management team will develop and implement a STEAM curriculum that encourages creativity, doesn't favor other subjects over the arts, and attracts interest from a more diverse group of students.



Create more spaces and programming to support Internet access and digital literacy among high need communities

The City has long provided and/ or supported public locations for technology access and services through the KEYSPOT Network and its libraries. Technology centers are found in community organizations, Parks & Recreation facilities, and library branches. Despite this infrastructure, however, Philadelphia remains challenged by low technology access and adoption rates in many of its neighborhoods. The City continues to support, and has recently expanded, its service offerings with the goal of providing more accessible technology to all Philadelphians.

Ongoing Initiatives:

KEYSPOT Network - Currently managed by the City's Office of Adult Education (OAE) and the Department of Parks & Recreation (PPR), KEYSPOT is a citywide network of over 50 public-access computer centers. Eighteen KEYSPOTs are housed within Recreation Centers, while the rest are located at a diverse array of community-based organizations and primarily in low-income neighborhoods. KEYSPOT provides the City with a set of physical assets to support the challenge of digital literacy.

Digital Literacy Alliance - OIT manages the City's Digital Literacy Alliance, a collaborative group of institutional stakeholders acting as a grant-making entity to seed innovation in the digital literacy space. Originating from the City's cable franchise agreement with Comcast, the Digital Literacy Alliance launched in late 2016 and has conducted two annual granting cycles of approximately \$175k each to local, community-based technology and digital literacy providers.

myPLACESM program - Now in its fifth year, the myPLACESM program operated by OAE provides integrated digital literacy and academic training to adults seeking to obtain a secondary credential or improve English language skills. myPLACESM online classes target adults reading at a 4th-6th grade level and focus on reading and math skills, allowing adults to gain academic competency while improving digital literacy at the same time.

Digital Skills, Bicycle Thrills - OAE partners with the Office of Infrastructure Transportation and Sustainability (oTIS) on the Digital Skills, Bicycle Thrills program. Originally funded through the City's Innovation Fund, the program teaches digital literacy while educating participants about urban biking and bike safety. The program also works to incorporate the City's bike share program into traditionally non-cycling neighborhoods.

311 Outreach - The City's 311 program conducts outreach across the city to help residents understand when to communicate with the 311 system and how to do so. Much of this outreach is conducted in Philadelphia's immigrant communities where language challenges often provide a barrier to full use of the 311 system.

Digital Literacy Workshops - To encourage digital literacy and support services provided through the KEYSPOT Network, OIT's Innovation Management team coordinated a series of workshops, including financial literacy as well as social media, to expand the concept of literacy beyond reading and writing. Finding the intersection between financial and digital literacy offered an avenue to fulfill the KEYSPOT mission while impacting underserved Philadelphia communities, while social media training taught participants the concept of digital citizenship and how to stay safe on the three most popular social media platforms of Facebook, Instagram, and Twitter.

Developing Initiatives and Strategies

Digital Literacy Alliance/Census2020 - The aforementioned Alliance will focus its grantmaking on a specific theme for the first time - Census2020. The coming census is moving to a largely online process - applying for census jobs, training census workers, getting residents to complete the census form - which will present challenges in a large city such as Philadelphia. To drive census participation in Philadelphia, the Alliance will offer community-based grants for programs that creatively connect digital literacy with census activities.

Philly Global Voices Project - The City of Philadelphia strives to find new ways of engaging with its communities to improve services and programs. As one of the SmartCityPHL initiatives, the Philly Global Voices project will develop a multilingual, voicebased, real-time translation platform for personto-person conversations. The platform will allow residents to speak into a device such as a mobile phone or laptop in their native language and have their comments translated for the field worker who wishes to gather feedback about a program or event.

English Language Learners Keyspot Programs - In December of 2018, OAE launched an initiative to enhance the ability of the KEYSPOT Network to serve English Language Learners (ELLs). The first phase of the project involves surveying KEYSPOT sites to gauge their current needs, experience, and capacity in the area of working with ELLs. Next, OAE will work with a Fellow from the Immigrant Professionals Program to identify best practices in working with ELLS in the area of digital literacy and will develop a toolkit and training to support KEYSPOT sites.

Support and elevate digital literacy governance across the government

Digital literacy governance in Philadelphia has historically been decentralized, though collaborative, with multiple departments developing initiatives. The City has never supported a role dedicated to digital inclusion work, instead relying on employees who include it as part of a broader work portfolio. Despite this decentralized approach to governing digital literacy, the City remains a leader in the digital literacy field. At the same time, however, the City misses an opportunity to strategically coordinate and connect its digital literacy initiatives because it lacks enterprise-level coordination for the work. Going forward, the City is committed to new ways to manage its digital literacy work to ensure a dedicated and coordinated approach to the challenge.

Ongoing Initiatives

Coordinating Activities, Outreach, and Communication
Over the last eight years, Philadelphia has developed
a digital literacy infrastructure that expresses itself
in three ways: a physical infrastructure in the form of
the KEYSPOT Network, a human infrastructure in the
form of the Technology Learning Collaborative, and
an innovation infrastructure with the Digital Literacy
Alliance. These three components have become
integrated so that each entity complements the others;
initiatives are often planned together, best practices are
shared with one another, and public communication
typically presents the three infrastructural components
as an integrated whole.

Developing Initiatives and Strategies

Establishing a Coordination Role - The City will work to create a role dedicated to coordinating and advancing its digital literacy work. This role may require a commitment from corporate partners, a grant opportunity, City funds, or a combination of all three. This resource will be responsible for establishing a collaborative model for connecting existing and future initiatives across departments, helping to inform and shape City policy around digital literacy, and representing the City at digital literacy gatherings. Establishing this dedicated role will illustrate the City's leadership around digital literacy and demonstrate its commitment to this persistent urban challenge.

Make public data more accessible and meaningful to communities and residents

Reaching beyond access to technology and the ability to use it, digital inclusion efforts should also include making public data and applications available so that residents can find information and interact with government in meaningful ways. Philadelphia has successfully pursued its digital literacy work on both fronts, with a strong open data initiative complementing its long-standing work around digital access and adoption. The City's open data program has moved well beyond an initial stage of releasing data sets to the public and has advanced its work to include developing user-centric applications and training community members on how to use them.

Ongoing Initiatives:

CityGeo Public Applications - Recent efforts to make public data more accessible have revolved around public applications combining access, interpretation, and visualization in one platform such as Atlas (atlas.phila. gov), OpenMaps (openmaps.phila.gov), Vacant Property Indicators (phila.gov/vacancymap), City Landmarks (https://bit.ly/2wLNcUE), PHL Stress Index (phila.gov/stressmap) and the CleanPHL Litter Index (cleanphl.org). These applications integrate numerous data elements across City departments and present a coordinated and comprehensive data offering by using one application framework rather than many. Outreach has also been a cornerstone of the City's effort and regularly hosted events such as GeoJawn promote and demonstrate the use of these applications.

Open Data Program - The work of the City's Open Data Program contributes to making data more accessible. By releasing datasets on OpenDataPhilly.org, we shift away from paper reports, PDFs, and spreadsheets that reside only on City systems, none of which can be easily analyzed or made into applications by others. To release this data, we assist departments in reviewing its quality and providing machine-readable formats that the public can use. Additionally, to contextualize datasets we offer a metadata catalog explaining the meaning of data fields and values and offer tips to the public on how to use the information. In January 2019, the Open Data Program was moved under the administration of OIT as part of the CityGeo team, which had long supported the City's Open Data Program.

Community Data Presentations - In addition to events specific to CityGeo data visualization tools, OIT provides community presentations to expand awareness of open data and data literacy trainings for civically engaged residents on how to use it. Our last trainings were at the PACDC Equitable Development conference and the Citizen Planner's Institute. An upcoming training will assist residents in mapping the Litter Index data for their community organizing and/or analysis goals. We also engage the local civic tech community through participation in hackathons focused on specific topics.

Contractual Data Standards - OIT has developed template language for city contracts that specifies data standards and requirements for departments when establishing contracts with vendors on any data management software or projects. These standards will ensure departmental access to clean, reliable data for service provision and system integration needs while also making it easier to publish data for public consumption.

Developing Initiatives and Strategies

Internal Data Improvements - Several initiatives to enhance data interoperability and connectivity are planned, and will continue the City's path toward making data accessible and meaningful to the public. These initiatives include developing and implementing a ubiquitous Property Identification Number (PIN) and Building Identification Number (BIN) across City departments, standardizing and cleaning address data, and continuing the development of the City's centralized data warehouse called DataBridge. Each initiative will ultimately provide better data to the City's existing open data portals such as Open Data Philly, ArcGIS Online, CARTO, and Pennsylvania Spatial Data Access.

Civic Data for Civic Engagement - Through a collaboration with Johns Hopkins University's Center for Government Excellence, Philadelphia will join three other cities in piloting an initiative that engages residents around data analytics to improve the design, planning, and delivery of City services. Coordinated by the Innovation Management group at OIT, the City will learn how to make better use of data to connect with residents on key civic issues. The project includes a training component for municipal employees, the development of a community engagement plan for data analytics, and the creation of a best practices guide for cities about community-driven analytics programs.



Create new models for employee recruitment, support, and retention

Recruiting and retaining diverse, motivated, and effective employees continues to be an imperative goal for the City of Philadelphia. In the recruiting space, departments are recognizing the need to more proactively find and encourage appropriate candidates to apply for positions, especially those that require specialized or unique skill sets and backgrounds. Technical positions are particularly difficult to fill, and as a result OIT is trying to create more opportunities for both formal and informal interaction between current and potential employees.

Ongoing Initiatives

The Mayor's Internship Program - One of the best-known City recruitment programs is the Mayor's Internship Program, a structured summer experience for college and graduate students interested in exploring careers in government. Although there is no formal expectation of moving into a full-time City position following the internship, interns often find that their previous time in City government makes them more competitive candidates for City roles.

Department Specific Apprenticeship Programs -

Several City departments have created their own apprenticeship programs to officially move temporary employees into full-time roles. Apprenticeships provide an opportunity for potential hires and their supervisors to determine whether the role is the right fit, and also offer immediate and effective job training to employees. A model program developed by the Philadelphia Streets Department hires interns and co-ops for six months to work in "hard-to-fill" positions and then moves them into full-time employment if the employee is the right fit.

Relationships with Colleges and Universities -

Philadelphia is home to over 100 colleges and universities, and departments are building relationships with students and administrators to raise awareness about careers and job opportunities in government. In many instances, offices and staff are creating initial relationships based on specific academic or department needs to serve both classroom and City. For example, the Innovation Management team has provided "innovation advisors" to an undergraduate class at Villanova University to add real-world context and content to class projects focused on improving various aspects of life in Philadelphia.



New Recruitment and Retention Strategy for Technology Jobs - OIT is prioritizing the recruitment and retention of talented and diverse mid/senior level positions that have traditionally been difficult to fill. Our strategy for this effort, to be led by an additional full-time resource, includes five primary pillars: direct and proactive employee recruitment; education and promotion about municipal government employment; policies and perks to encourage employee retention; formal evaluation and promotional structures to encourage employee retention; and internal processes that support diverse hiring. As a first step, OIT is re-engineering the process from recruitment to hiring in an effort to attract better talent and reduce time-to-hire.

Mentorship Program - To better retain, prepare and promote current employees, the HR & Talent Team in the Office of the Chief Administrative Officer will launch a mentorship program to address the challenge that many City employees in leadership positions have never received formal leadership training. The program is comprehensive and includes a facilitated matching process, formal training, and clear goals for measuring success. The plan's rollout includes four steps: 1) surveying

employees to identify those who are interested in participating, both as mentors and mentees; 2) creating a database of candidates that highlights their wants, needs and expectations of the program; 3) a series of training sessions to roll out the program to mentors; and 4) a separate training for mentees to align them with the goals of the program.

STEM Pipeline - The Philadelphia Water Department (PWD) is proactively focusing on creating pipelines to fill technical positions beyond its traditional engineering career track. Establishing this career pipeline includes attending career fairs at local technical schools, a growing relationship with Temple University's Center for Inclusive Competitiveness, and water industry workforce development education for existing employees. Specifically, PWD established a program with Orleans Technical College where students can take classes in Electronic Technician training and Commercial Electricity training and after completing the course are prepared for entry-level technical exams for the City in their respective career paths.

Continue and expand opportunities for research, experimentation and innovation

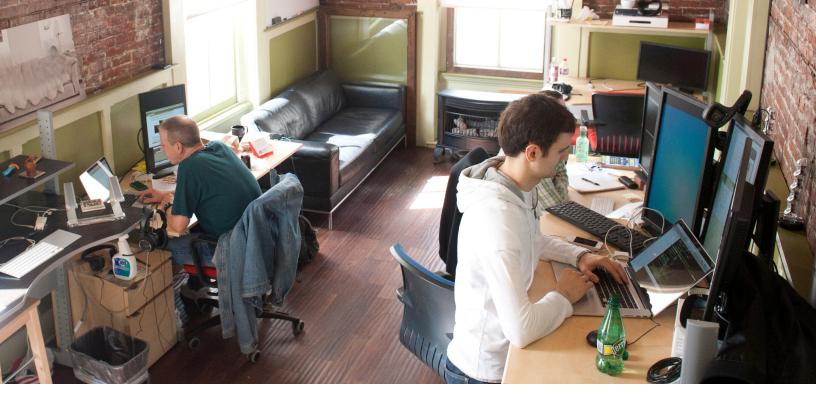
The City of Philadelphia's mission is to offer efficient and inclusive services to its residents. To achieve that goal, government is realizing that it needs to continuously challenge itself, its programs, and its employees to seek out new, innovative ways of solving challenges. Government must be open to – and encouraging of – innovation, pilot initiatives, and research opportunities. Only by creating a culture where these ideas are supported and elevated can government truly begin to create and implement fresh solutions to the most pressing issues facing the public.

Ongoing Initiatives

GovLabPHL - GovLabPHL, a multi-agency team led by the Mayor's Policy Office, officially launched in February 2017, with a goal of increasing the application of evidence-based practices in municipal government. GovLabPHL focuses on three streams of work: 1) creating opportunities for City employees to learn more about evidence-based methods; 2) providing support for departments to pilot randomized control trials and/or conduct pilot research projects in partnership with an academic institution; and 3) ensuring that the public is aware of these initiatives and has opportunities to participate in the portfolio.

The Innovation Lab - The City's Innovation Lab continues to serve as a physical representation of government's commitment to innovation. The Lab provides a space for both formal and informal collaboration and cross-departmental work and supports creative activities and workshops around topics like strategic planning, project development and implementation, performance management, and process improvement.

PHL Participatory Design Lab - In November 2017, the Office of Digital Transformation, in partnership with the Mayor's Office, received a grant from the Knight Foundation to establish the PHL Participatory Design Lab. The program uses social science and service design methods to improve the experiences of the public when interacting with various departments and develops appropriate solutions to challenges because citizens have been engaged and involved in the planning and design process.



Expanded Innovation Fund - The Innovation Fund is a seed fund (administered by the Mayor's Fund for Philadelphia) that offers financial and capacity support to innovative pilot projects that seek to improve a City program or process. The Fund's grantmaking work is managed by the Innovation Working Group, a diverse, cross-departmental team of employees who help solicit, advise and support the funded projects. Innovation Management and the Mayor's Fund plan to deepen the impact of the Innovation Fund by a) making it the primary avenue of innovation funding for City employees and departments b) replicating and applying the Fund's ideation process to other grant/application opportunities across government and c) expanding the role of the Working Group into a more cohesive resource and advisory group for other innovation activities.

Innovation Consulting Program - The newest initiative from OIT's Innovation Management team demonstrates how innovative strategies and techniques can be applied to a variety of professional environments and topics and shows how innovation can be strategically and intentionally incorporated into employees' portfolios. Innovation Consulting focuses on planning and facilitating individualized workshops for teams and organizations internal and external to government that are facing operational challenges ranging from stakeholder communication to process improvement. Innovation Consulting's next challenge is to build the program's capacity by developing an Innovation Consulting 101 course that will train a pilot group of employees to become consultants and expand the services that can be provided.



Develop opportunities for public engagement and training to increase adoption of City services

Public engagement is a priority for the City of Philadelphia, particularly creating opportunities for residents to be a part of developing and implementing City services. In this case, residents might include City employees, people who access and use specific services, or our professional peers in the design, content, and technology disciplines. Online public service delivery is also a focal point in the City of Philadelphia's efforts to make use of the Internet to improve how essential services are presented to residents. Designing online applications and portals that make it easier for residents to access City resources through collaborations with external stakeholders such as the Knight Foundation allows the City to improve public interactions and better understand the needs of residents.

Ongoing Initiatives

PhilaRevenue Videos - In 2017, Philadelphia's Department of Revenue began to create YouTube videos to inform residents about paying taxes and water bills and also educating the public about its many services, programs and events. Videos range from instruction about real estate taxes to detailed 'Q & A' sessions about stormwater charges and billing.

Philly311 - The 311 contact center serves as Philadelphia's customer service center for non-emergency inquiries. Service requests can be submitted via telephone, web application, email, as well as through mobile application and social media. With the rise in use of mobile applications, Philly311 has made significant improvement to the Philly311 application including topic-based push notifications to citizen subscribers, improvements to address validation, and enhanced geospatial support.

User Experience and Design - In collaboration with GovLabPHL, the Office of Digital Transformation (formerly the Office of Open Data & Digital Transformation or ODDT) focuses on developing innovative and evidence-based practice in municipal government. In 2016, two user experience fellows engaged Philadelphians in the Municipal Services Building and at KEYSPOT locations throughout the city to test early designs for the City's website.

BY DESIGN- The Office of Digital Transformation,
GovLabPHL, and the University of the Arts Design for
Social Impact Program organized a speaker series
throughout 2017 entitled BY DESIGN: Transforming Public
Sector Services. The series explored the role that different
types of strategic design (service design, human-centered
design, and design thinking) could play in improving endto-end government services. This series included seven
lectures and panel discussions which were open to City of
Philadelphia employees and the public.

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Developing Initiatives and Strategies

CityGeo Training Sessions - The City continues to foster opportunities that will improve the experience of the public when interacting with City departments. In 2018, the CityGeo team at OIT provided 28 individual trainings and demonstration sessions to nearly 900 people ranging from internal operations and partner organizations to neighborhood committee members and residents. For example, during one training session with the Lower Northeast Neighborhood Partnership, the CityGeo team explained how City data creates useful applications and demonstrated how to find property data using the Atlas application. As the CityGeo team continues to produce publicly consumable applications, services, and data, these types of engagements will continue. CityGeo is committed to expanding embedded web maps throughout the City's website as it creates and deploys meaningful services and applications.

Increase accessibility
of City websites and
platforms for our diverse
range of constituents

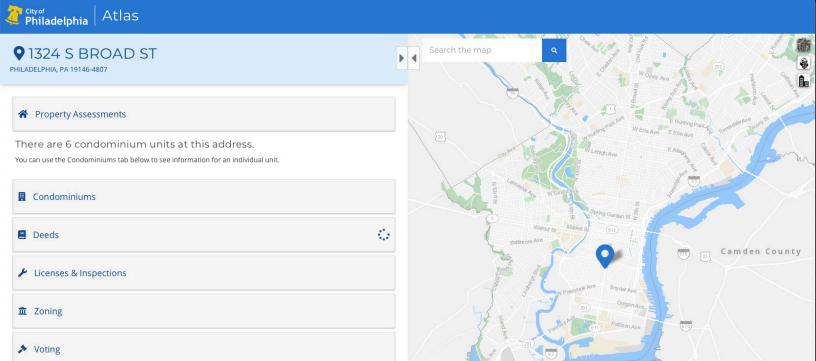
The City of Philadelphia is committed to ensuring that all people, regardless of language or literacy level, have access to City services and information. In 2015, the City voted to amend the Home Rule Charter to require all City agencies provide language access services, and departments are now working to meet that goal. In addition to language access, the City strives to make websites and platforms easier to navigate and more responsive to customers. The City of Philadelphia aims to create a new digital service experience that will showcase simple, mobile-friendly designs, more intuitive organization, and clearer content—better connecting the public to City service information and empowering all Philadelphians.

Ongoing Initiatives

Redesign of Phila.gov - The City's website has been completely redeveloped and improved in many ways. Phila.gov now uses a cohesive visual standard which brings a consistency to City departments and services, and adoption of plain language standards has made the website accessible to more people. Additionally, navigating from the homepage to other parts of the website has become easier as a result of early design testing with the public to learn how constituents interact digitally with the City.

Plain Language Guidelines - The Office of Digital Transformation (formerly ODDT) developed a series of guidelines that enable all City employees to write and maintain quality content in "plain language," meaning that written material is meant to be understood as quickly, easily, and completely as possible by readers of any level. This plain language initiative democratizes information so all users - whether they struggle with literacy, are just learning English, are reading on a small screen, or are translating government documents - can meaningfully interact with government.

Language Access Policies - City departments now have language access policies outlining how they will serve customers who are not native English speakers. Plans are posted online, and in some cases departments have made translated documents available on their websites. Additionally, the City of Philadelphia's new website, which was officially launched in October 2018, includes a page dedicated to language access where residents can learn more about their rights and submit a formal complaint if a service has been denied in their preferred language.



MapBoard - Digital Transformation and the CityGeo team continue to develop standardized templates and best practices to ensure that City digital products align and are easy to use. The MapBoard template was developed in-house by CityGeo as a standard for obtaining information related to a specific address (eg. atlas.phila.gov), and illustrates a "government-off-the-shelf" approach to application development. Beyond MapBoard, enterprise-level mapping standards are being developed to ensure products align with the City's digital standards and also feature intuitive functionality for customer interaction. For example, a redesign of property.phila. gov will include its integration with MapBoard.

Resource Finder & Sharing Platform - The Office of Immigrant Affairs (OIA) is working closely with the Office of Digital Transformation on a platform that would allow departments to share resources and information in multiple languages with each other and with the public. As it explores these potential solutions and the challenges presented by them, OIA is also collecting commonly requested City resources and establishing a digital inventory. The Office of Digital Transformation is also developing a Resource Finder platform to map and direct residents to language-appropriate resources and services.

Enable more online City services

Residents now have an expectation that they can communicate with government and avail themselves of its services through online interaction rather than standing in line in a public building. The City is steadily moving toward making its services available online and one significant aspect of this work involves the creation of a more intuitive and functional website. As Digital Transformation (formerly ODDT) has migrated and redesigned content from the City's old website and made it more accessible to the public, many services and information that were previously buried in departmental landing pages can be located more easily. Ensuring that City services are available online and accessible to our residents is now a top priority.

Ongoing Initiatives

Online Payment Options & Electronic Billing - The Revenue Department and OIT's Program Management Office have expanded the City's online payment options to make it easier for residents and vendors to do business with the City. Over 35 electronic payment (ePay) options are now available online, and the list is growing. One notable electronic billing platform handles residential and commercial water payments, both a significant source of revenue for the City as well as a common bill for residents and businesses. The City's ePay platform provides a one-stop shop for users and allows them to enroll quickly and enable autopay if desired. OIT is also working with the Managing Director's Office, Department of Parks and Recreation, Streets Department, and the Health Department to add online payment options for their public-facing services.

Scan First - The Department of Records created a new feature for the document recording process that allows documents presented over the counter for recording to be scanned at the time of recording and returned to customers at the end of the transaction. Mailed-in documents are also scanned and can be returned faster than previously. Through this new technology, residents have more immediate access to important legal documents that may have time-sensitive purposes.

Real Estate Tax website - The City's ePay Team worked in conjunction with CityGeo and the Revenue Department on developing a new Real Estate Tax website. The website allows users to look up property tax balances via Board of Revision of Taxes (BRT) number or physical address, and also enables the online payment of any current or outstanding balances. The site provides all the same functionality as the old one, but with a more user-friendly format the site is easier to navigate and provides the City with a more modern aesthetic that aligns with the new Phila.gov design.

Developing Initiatives and Strategies Police Accident Reports - OIT is working closely with the Police Department and the Department of Records to make it possible to retrieve and pay for Police Accident Reports online. This online access will benefit both residents and insurance companies who frequently request large numbers of these reports. 29 Enhance Online Public Service Delivery



Facilitate pipelines for part-time to full-time City technology employment

The City of Philadelphia strives to recruit employees and establish a talent pool comprised of employees who represent the diversity of Philadelphia, and this goal is particularly challenging in the technology field. Through the creation of employment pipelines that facilitate the movement of employees from parttime to full-time employment, the City is increasing opportunities for individuals to learn more about working in public sector technology, while also developing the requisite skill sets to succeed in these positions. These creative and flexible employment pathways are helping the City establish a technology workforce that represents Philadelphia and advances our technology profile.

Ongoing Initiatives

Digital Transformation Fellows - The City's Office of Digital Transformation, (formerly ODDT), launched the Digital Transformation Fellows program in early 2017 to hire four temporary, full time employees to help the team complete various aspects of the website redesign project. The program was an opportunity for diverse professionals to help the City succeed by working inside government for a short period of time on high impact digital transformation work, specifically on a project that truly impacts all Philadelphians. Upon completing the fellowship, two fellows joined Digital Transformation on a full-time basis.

Developing Initiatives and Strategies

Tech Industry Partnership - The Office of Workforce
Development is launching the Tech Industry Partnership,
a cross-sector coalition of industry leaders who
are committed to 1) providing leadership to ensure
the initiative is driven by the technology industry;
2) surfacing core workforce issues that need to be
addressed; and 3) identifying and articulating the
specific skill sets required in the technology industry.

Engage with civic technologists for sharing ideas, increasing process transparency, and learning across technology sectors

Government often finds itself engaging in problem-solving - thinking about how to address persistent challenges and deliver the best services to the public. The City is increasingly recognizing that it alone does not have solutions to many of the challenges facing our communities, and that we need to engage with colleagues across sectors to learn from one another, share best practices, and co-create approaches to our challenges. Philadelphia has a thriving and growing civic technology ecosystem, and City departments are more frequently collaborating with other institutions and individuals to develop innovative solutions.

Ongoing Initiatives

Structuring Opportunities for Engagement - The Office of Digital Transformation (formerly ODDT) actively seeks opportunities to engage with Philadelphia's community of civic technologists. The team does much of its development on the public collaboration platform GitHub, and the team spent several months at a public co-working space to work alongside civic technologists from other sectors. The team also hosted an event during Philly Tech Week to solicit feedback from the City's civic tech community about how government can be more accessible and establish better pathways for public collaboration.

Innovation Consulting for the Civic Tech Community
In 2018 and 2019, the Innovation Management group
offered innovation consulting and capacity support
to multiple civic technology groups in Philadelphia,
including Code for Philly and another private sector
digital design and innovation company. By building
meaningful relationships with these groups, the City can
raise awareness about the City's innovation portfolio
while simultaneously creating opportunities for crosssector learning and problem solving.

Developing Initiatives and Strategies

Combined Geographic Information Officer/Chief Data
Officer Role - Recognizing the deepening connection
between spatial data and open data work, OIT recently
combined these two leadership positions into a single
hybrid position. The position reflects the elevated role
that both geographic information and data are playing
in government, and will allow OIT to establish standards
for improved data integration and create a more
collaborative, cohesive environment for data sharing and
problem solving.



Establish a continuous improvement model for the City's network

One core function of the Office of Innovation & Technology is to maintain a secure, stable, and robust technical infrastructure that can enable the many business functions of City departments. IT infrastructure is future-leaning; it must be capable of supporting growth in rapid, high-volume communications and data exchange required by the business applications of a large city while also ensuring that systems remain secure through ever-advancing threats. Shifting to a continuous improvement model for network operations is key, particularly as the City develops its smart city ecosystem. The latter will require a network capable of supporting data-gathering of numerous Internet of Things (IOT) devices and sensors while also ensuring new standards of security.

Ongoing Initiatives

Cyber and Data Security - OIT takes the security of City systems and data privacy seriously. The escalating number of cyber-attacks against local governments through sophisticated phishing and malware activation has required a redoubling of efforts to ensure cyber-security. Over the last year and a half, OIT has expanded its resources and budgets to address these increasing threats to our systems and data through software, skill-building, and education efforts. Mandatory employee cyber-security training coupled with HIPAA training for appropriate departments are complementary programs that help staff understand how they can better protect systems and data security.

CityWireless Project - Standardization of Wi-Fi networks within the City's core buildings will offer all employees singular and seamless connections to and from Ethernet-connected docking stations to the City's internal network via Wi-Fi. OIT is also replacing open Internet Wi-Fi networks for public use with a single Wi-Fi network with a registration portal. That portal will allow the City to more easily control security should the use of a non-City issued mobile device violate the City's Internet use policies.

Continuity of Operations (COOP) - COOP assessments are underway by OIT for both the Philadelphia Police Department and Fire Department's 911 call centers. The goal of this evaluation is to identify opportunities for improving services and more effectively allocating budgets.

Voice Over Internet Protocol (VOIP) - OIT is converting existing Centrex phone lines (copper-based) to Voice Over Internet Protocol (VOIP) which will offer the City the ability to enable and control caller ID, eFAX, video conferencing, and also offer a call accounting system. The transition from Centrex to VOIP is currently halfway through implementation with core city buildings completed.

Network Operations Center (NOC) - OIT plans to build a NOC to provide full-service monitoring of its network infrastructure that supports enterprisewide and department-level business applications. The NOC will provide the City with a more reliable way to ensure that its critical network infrastructure is maintained and monitored and that business operations continue seamlessly.

E-911 Redundancy - OIT is currently in the planning and design phase of installing a fiber-optic connectivity ring called ESINet to provide Philadelphia and its surrounding counties with full 911 call redundancy and the ability to share computer-aided dispatch (CAD) services. The ESINet will also provide radio interoperability across counties so that radio systems can switch automatically to a common frequency when crossing county lines during an emergency response.

Establish new modes of operation for improved product delivery, support and customer success

To improve the speed and reliability of its business applications, the City needs to adopt new operational models for developing software and supporting it. The City currently lacks a consistent dev/ops model to properly transition custom built applications from the project team to a long-term product owner who can focus on its success and evolution. One critical step is the unification of software teams so that standards and innovations are practiced and adopted equally. Next we should formalize product management through well-defined support models and metrics. The City's initial work with the dev/ops model has yielded success; the creation of the Address Information System (AIS) and the comprehensive redesign and reengineering of the City's website, Phila.gov, both adopted dev/ops principles during their development.

Ongoing Initiatives

DevXchange - Established by OIT, DevXchange is a collaborative group of employees from across City departments involved in software development. DevXchange strives for cross-departmental sharing of standards and ideas for software projects and works toward improving the City's ability to deliver and support internal software development. This cross-departmental collaboration offers a contextual knowledge of the City and its processes that consultants cannot provide, and a mechanism for working jointly on shared strategies and goals. DevXchange builds upon a collaborative model of GeoXchange started by OIT in 2014 for GIS and data analysts.

Unified and Agile Software Development - OIT hired its first Director of Software Engineering to coordinate staff responsible for developing software and to provide direction on fully adopting Agile and other best practices. This new role advances our ability to unify software development processes and resources and move toward a more iterative development approach. The long-term goal for this position and the department is the creation of a deeper bench of application developers and engineers who can effectively step into multiple practice areas of software development.



Customer and Product Success - OIT plans to hire a Director of Product Management and Customer Success and establish a new unit dedicated to supporting the City's enterprise products and ensuring their evolving success. This role will lead a team of product managers who will define and execute on support models for the major business solutions maintained by OIT such as ePay, DocuSign, Office365 and others. Expected outcomes for the new unit are improved and consistent levels of services to departmental customers, as well as the ability to collect metrics about system use and cost to drive improvements in customer engagement and guide decision-making about when to replace existing systems.

User Experience and Content Design - To complement the unified software engineering team and better support the success of IT modernization projects, OIT will establish a new team to deliver user experience (UX) and content design. OIT will work with the existing Office of Digital Transformation (formerly ODDT) team to guide this process and adopt existing UX and content design approaches that have already proven successful.

Advocate Cloud-First Policy - OIT will advocate for a virtualization and Cloud-first policy for the replacement and modernization of departmental business applications and hardware. By moving equipment and operations to a virtual state on a Cloud platform, the City can realize many benefits: a reduced burden on infrastructure and staff because fewer on-premises resources are required for support, as well as easier prototyping, iteration, and scaling of applications as a result of the massive processing and storage capability in the Cloud. Maintenance costs are potentially reduced as well because processing and storage capabilities are purchased based on what is required.

Open Architecture Policy - OIT will seek to avoid proprietary solutions to systems architecture and business applications. By emphasizing an open architectural approach to development, the City maintains the flexibility to use multiple vendors and technologies. As a result, the potential for significant cost savings exists because applications don't require a single vendor and/or platform for development and instead the City can compare options. Integrating multiple applications across a single platform also becomes easier when applications do not require proprietary solutions.

Improve on-time success of IT solutions

Modernizing legacy business applications requires an especially complex planning and execution process. The City workforce faces demands on its time that are often not understood by IT vendors and even other City workers themselves, and participation required during technical development and testing often falls short of what is needed. The result is overly designed applications, delayed projects, and cost overruns. To overcome these challenges and deliver timely and wellbudgeted solutions requires a change in the way the City manages these projects. Adopting an agile and modular approach to projects, coupled with a focus on organizational change management, offers the City an improved methodology for modernizing its legacy business applications.

Ongoing Initiatives

Deconstruct Large IT Projects into Smaller Integrated Components - To learn how the City can best adopt Agile methods in large-scale IT project delivery and procurement, OIT convened a GoAgile Advisory Working Group in 2018. The group includes technology leaders from Philadelphia area businesses with experience in modular or Agile IT solution delivery. OIT facilitated several sessions to explore with the working group ways the City could structure, procure, and execute large-scale IT projects by decompressing the solutions themselves into integrated modules. OIT is acting on these lessons by first concentrating on a small number of projects and including training on process and organizational change management.

Retention and Recruitment of IT Professionals -

Frequent staff turnover negatively impacts project delivery time and quality. OIT recognizes that skilled technology professionals can often choose their place of employment and also expect the ability to work remotely. A job with the City should stand out for what it is – a mission driven, rewarding environment that requires and encourages problem solving. OIT is making greater efforts to recruit and retain a diverse workforce by better articulating departmental goals and values to job candidates while also instituting alternative work schedules and limited work from home programs.



Organizational and Process Change Training -

Acting upon a key recommendation of the GoAgile Advisory Working Group, OIT has recently launched a six-month training program for IT project managers and departmental IT directors on organizational and process change management. Training is designed in collaboration with the Philadelphia extension of Harrisburg University's Government Technology Institute, and will explore the value and delivery of change management in IT solution planning and execution.

Service Design Workshops - OIT plans to incorporate workshops on service design and process redesign as part of every IT modernization project. Workshops are intended to orient departmental clients to their roles in the modernization project, help them identify opportunities for process redesign, and make them aware of when to intervene with critical conversations during the project process.

Improve IT Project Intake and Evaluation - OIT will improve the IT project intake process by developing a series of documented and tested gates for project review and success. Gates will include architecture, security, operational support, and success model reviews as well as service design, content, and UX strategy. The project intake and review process will be documented in plain language and posted on the City's intranet site for departmental clients to better understand the process and how they should engage.

Affirm the central role of GIS to data management, SmartCityPHL technology adoption, and policy decision-support across City government.

Philadelphia has the strongest organizational and physical infrastructure for data collection, analysis, and sharing of any municipal government in the country. This capacity was established through decades of investment in geographic information systems (GIS) resources, expertise and technology. GIS serves as both an integration and analysis practice, and is central to data creation and visualization. With GIS units across the City using the DataBridge platform for data sharing and API standards, the City has the capacity to take on and analyze new sensor and Internet of Things (IoT) technology. As the City begins the implementation of its SmartCityPHL Roadmap, it will have an opportunity to collect and manage additional data from sensor technology that supports business operations.

Ongoing Initiatives

Philadelphia Vehicle Location - The Philadelphia Vehicle Location (PVL) initiative is poised to move beyond simply monitoring City sanitation and plow truck locations to using the data for decision-making and improved operational efficiency. To make PVL an analytical tool, the CityGeo team is collaborating with the Streets Department to combine raw data from the City's vehicle fleet with geographic data to enable further analysis. The public can now view PVL outcomes at streetsmartphl.phila.gov.

Vacant Property Indicators Model - This model integrates information about property data from multiple City departments and provides a tool for identifying potentially vacant lots and buildings. The model was developed through a departmental collaboration to address the vexing challenge of property vacancy in Philadelphia and integrates factors indicative of the condition to offer a vacancy prediction score.

Atlas - The Atlas application (atlas.phila.gov) demonstrates the value of thoughtfully combining multiple City datasets into a digital "front door" for property-related information. With many of these datasets updated daily, Atlas allows residents to find recent or historical permit, license, and inspection histories for any address and explore zoning, historical maps, 311 reports, and crime incidents.

Litter Index - Based on the MapBoard framework created by OIT, the Litter Index (Cleanphl.org) was created by City departments responsible for surveying and documenting litter on streets, sidewalks, lots, and other public property. This capability was developed by conducting cloud-based surveys through field surveyors using GPS-enabled tablets and offers the City an analytical tool to address its challenges with litter.

SOLARrooftop - Phila.gov/solarmap enables residents and businesses in Philadelphia to determine the solar potential of their rooftops. This application analyses each building and estimates the total solar energy that could be collected from available roof space. Also provided is a conservative estimate of potential electricity production resulting from the installation of solar panels.

Developing Initiatives and Strategies

Analytics Platform Development - OIT will establish an analytics platform capable of enabling numerous modes of analysis: self-service exploratory analytics, batch analytics of large volumes of historical data, and automated real-time data streaming and processing. This platform will make use of DataBridge, our core data warehouse, and provide a central repository for departments seeking data and analytical capabilities to support program decisions.

LiDAR Best Practices - Light Detection & Ranging (LiDAR) is a methodology and dataset for measuring distance and elevation to a target by pulsing laser light and measuring its reflection with a sensor. OIT will investigate best uses for LiDAR, acquired annually as part of its street-level and aerial imaging products. OIT wishes to explore how LIDAR can be used for high-precision modeling of streetscapes and structures as a way to support building inspections and permit review processes.

Building Automation - The Office of Sustainability will use its Building Automation System (BAS) infrastructure to analyze building conditions in real time and offer the ability to control heating and cooling through this web-enabled platform. As a result, building temperatures can be efficiently scheduled to reduce energy costs and the system will alert facility teams when maintenance is required.

About the IT Strategic Plan Sponsors

The Office of Innovation and Technology (OIT)

oversees most major technology projects for the City of Philadelphia, ensures continuity of the City's technology operations on a 24/7 basis, and finds new ways to help the public interact meaningfully with technology. OIT uses technology to help City employees do their work better and help residents get what they need from municipal government. The organization also provides leadership on digital information sharing, security, and solution architecture. OIT is led by the City's Chief Information Officer and provides the following services:

- 911 Administration
- Enterprise
 Architecture
- Network Engineering
- Application
 Development
- GIS, Analytics, Open Data
- Project Management
- Creative and Content Design
- Information Security

- Platform Engineering
- Database Services
- Innovation and Consulting
- Unified Mobile and Telecommunications
- Data Center Operations
- IT Help/Support Center
- IT Procurement

The Office of the Chief Administrative Officer

(CAO) works to modernize city government and improve the efficiency and effectiveness of City services. We focus on innovating and strengthening the City's administrative functions and enabling resident-facing departments to evaluate, plan, and continually improve service delivery. The following departments and functions report to the CAO:

- Office of Innovation and Technology
- Procurement
- Records
- · Office of Administrative Review
- · Bureau of Administrative Adjudication
- Human Resources
- · Talent, Contracts, and Digital Transformation

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