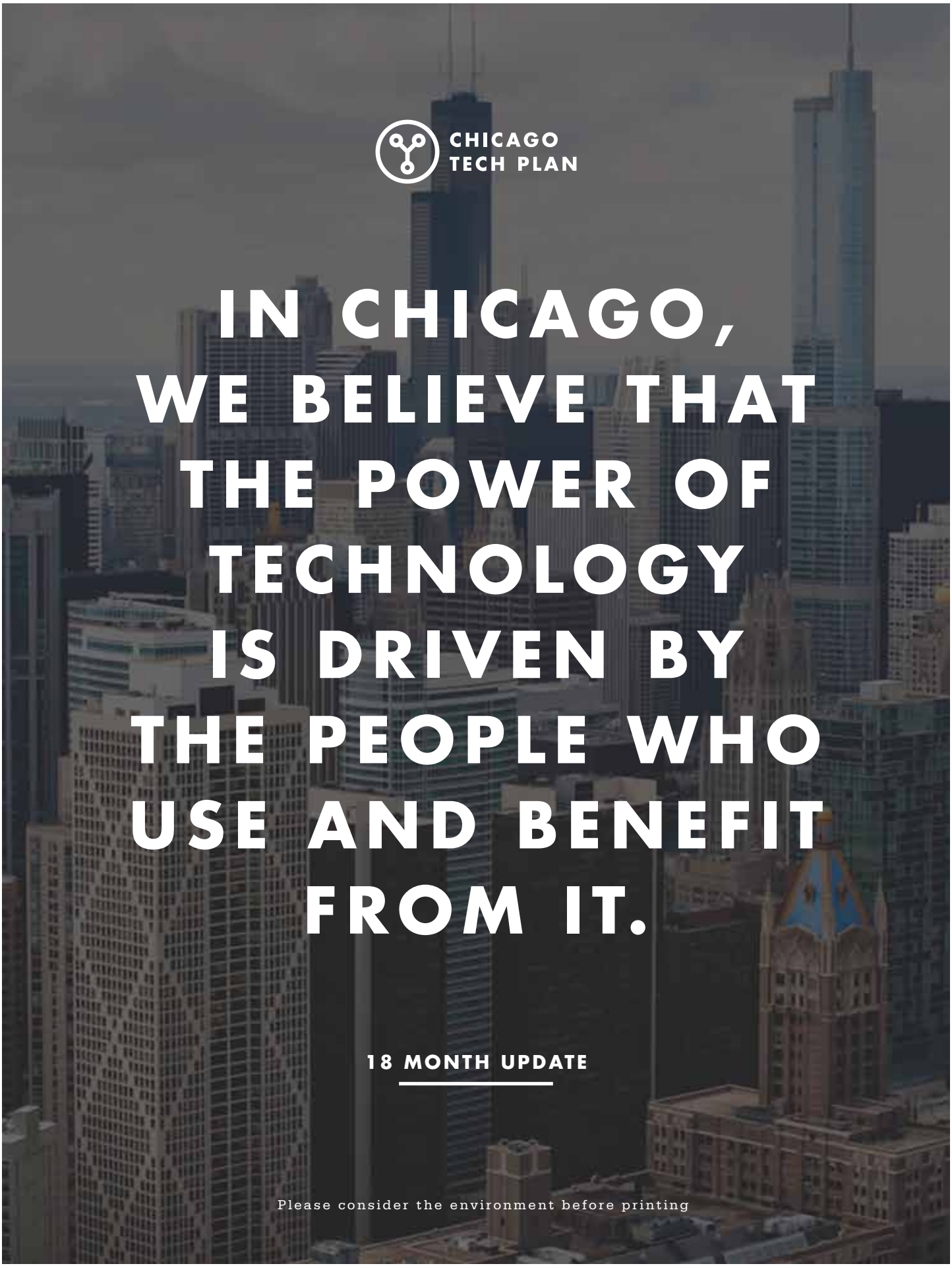

CHICAGO
TECH PLAN
IN CHICAGO, WE BELIEVE THAT THE POWER OF TECHNOLOGY IS DRIVEN BY THE PEOPLE WHO USE AND BENEFIT FROM IT.
18 MONTH UPDATE
Please consider the environment before printing

TABLE OF CONTENTS

LETTER FROM THE MAYOR

Dear Friends,

In fall 2013, I unveiled the City of Chicago's first-ever Technology Plan, which laid out a strategy to establish Chicago as a national and global center of technological innovation. Advancements in technology impact every aspect of our lives – how we work, play, and live. From the education of our children and the strength of our transportation system to the training of our workforce and the transparency of our government, innovation in technology leads to vibrant communities, strong infrastructure, and continued economic growth and prosperity.

Chicago used to be a flyover city for the tech community. Today, we are becoming a destination city for the best tech companies and the best tech talent in the country. Since 2012, we've added more than 15,000 technology jobs and it's no accident that so many growing technology companies now have the confidence to move here or stay here.

Over the last eighteen months, we've expanded K-12 computer science education, early college STEM programming, and summer and other out-of-school technology learning opportunities for our children. We've increased free digital skills training opportunities and public computer access citywide. We've improved wireless service and technology infrastructure in our classrooms, libraries, and other public spaces. We've opened up data on City programs, initiatives, and processes in a way that no city has done before and become a national model for government transparency.

While we have made great strides in growing the technology industry, there is a lot more work to be done. And, if we continue making the right investments together, we will give every child in every neighborhood the chance to participate in the 21st century technology economy right here in Chicago.

Rahm Emanuel
Mayor of Chicago

A

Next-Generation Infrastructure

Establish next-generation infrastructure that enables residents and businesses to become more digitally-engaged

Improved Broadband

(Initiative 1)

The City of Chicago will work with internal and external partners to improve the speed, availability, and affordability of broadband across the city.

Chicago Broadband Challenge

In fall 2012, Mayor Emanuel launched the Chicago Broadband Challenge, which seeks to create an affordable gigabit-speed network in targeted commercial and industrial corridors, establish free wireless service in parks and public spaces, and increase accessibility and affordability of Internet service in underserved residential areas across the city.

Affordable Gigabit-Speed Network

In February 2014, the City issued a Request for Qualifications (RFQ) seeking experienced companies to design, construct, implement, and manage a state-of-the-art gigabit-speed broadband network that can serve businesses and organizations in innovation zones, or key commercial and industrial corridors throughout the city, at a cost substantially below current market offerings. In June 2015, the City issued a Request for Proposals to the four RFQ respondents who were found qualified. To support the build-out of this network, the City will offer a variety of City assets to the selected respondent, including existing City-owned fiber and right-of-way access to freight tunnels and sewers, as well as provision of broadband services to specified City offices.

Digital Public Way

(Initiative 2)

The City of Chicago is digitally connecting its physical assets, and making that information readily available to anyone, to improve the way residents and visitors interact with and navigate around Chicago.

Bus Tracker Shelter Displays

As of April 2015, the Chicago Transit Authority has installed 350 Bus Tracker displays at bus shelters with high ridership and rail stations with large numbers of riders who transfer between rail and bus service.

The first 172 were installed in 2012. In 2013, an additional 108 were installed and cellular connectivity enhancements were made at 280 shelters. In early 2015, another 70 displays were installed. The CTA will install another 70 displays by the end of 2015, bringing the total to 420 available citywide.

Divvy Data Released

Divvy, Chicago's bike-sharing system, with 3,000 bikes and 300 stations across the city, released its 2013 and 2014 trip data. Anyone can download this trip data, which includes trip start and end dates, times, and stations, and rider type, gender, and year of birth. To celebrate, in 2014 Divvy launched its first Data Challenge contest, where more than 80 entrants brought Divvy bike trips to life using visual design.On March 18, 2015, Divvy announced the winners of its' second Data Challenge. Winners received a BizSpark software package, XBOX One, and XBOX Kinect from Microsoft, and two free Divvy memberships. Winning entries are also featured in full page ads in the RedEye and on the Divvy website.

Divvy station information is available on the City's Open Data Portal and Chicagoans can download several apps to assist with ride planning.

Divvy 2015 Data Challenge Best Overall Winners: Matthew Shaxted's 3D visualization illustrating the daily flow between stations an: d Shaun Jacobsen's comparison between the speed of divvy trips and public transportion trips

Urban Technology Experimentation

(Initiative 3)

The City of Chicago will implement policies and basic infrastructure that make Chicago friendly to technology experimentation, allowing Chicago to become a global leader in environmental sensing, spectrum research, and wireless connectivity, while enabling researchers to develop solutions to city problems.

Beach Water-Quality Automated Sensors

The Chicago Park District maintains sensors at beaches along Chicago's Lake Michigan lakefront. During the summer, these sensors capture hourly measurements of water temperature, turbidity, wave height, and period. Beginning in 2014, the information is now published to the City's Open Data Portal during beach season, giving Chicago's residents up-to-the-hour information on the condition and quality of local beaches before they visit. This sensor data is also valuable to researchers who may be interested in correlating this information with weather or other data.

Array of Things

In addition to providing continually growing amounts of data to the public, Chicago has launched a first-of-its-kind initiative to create new ways to generate and collect city data. Funded by a National Science Foundation grant to the University of Chicago's Urban Center for Computation and Data, the "Array of Things" project will mount sensors on light poles throughout the city. This is the first stage of a data collection system whose platform will be opened up to other cities.

The array network will have 12 sensors collecting data on humidity, air quality, light, temperature, noise level, carbon monoxide/carbon dioxide levels, and pedestrian foot traffic in the downtown area. All data will be published on the City's Open Data Portal with multiple updates per minute.

The network is projected to grow in the next few years with grant funding for additional sensors. Independent experts from industry, academia, and government will regularly review all software, hardware, and experiments for privacy, security, and scientific considerations. Final approval for all instrumentation and data collection will be granted through an executive committee, which is led by the City and includes members from various research fields and the community.

The Array of Things will help researchers and policymakers better understand how cities function and allow Chicago to become a leader in urban sensing initiatives.

B

Every Community a Smart Community

Ensure the full participation of all Chicago residents and businesses in the digital economy through training and engagement programs that make technology relevant, useful, and productive

Smart Communities

(Initiatives 4 and 5)

As an initiative of Mayor Emanuel and World Business Chicago's Plan for Economic Growth and Jobs and the City's Tech Plan, LISC Chicago, the Smart Chicago Collaborative, Chicago Public Library, and the City of Chicago's Department of Innovation and Technology will build on Chicago's model programs, Connect Chicago and Smart Communities, to increase digital leadership and innovation across the city by investing in digital skills and digital access among residents, businesses, and nonprofits.

As part of this initiative, program partners are creating a profile of a fully connected digital community that can be used as a benchmark and will provide best-practice toolkits and other resources to help all Chicago communities reach this benchmark.

Free Wireless Service

(Initiative 6)

The City of Chicago and the Chicago Park District will expand free Wi-Fi service in parks and public spaces across Chicago. The City will also reach out to community groups to spread awareness of how they can help increase Wi-Fi availability by establishing access points in their neighborhoods.

Free Wi-Fi in Public Spaces

In 2014, the City partnered with Google to provide free wireless service at Garfield Park and he South Shore Cultural Center. This builds upon additional recent public-private partnerships to provide wireless service at North Avenue, Osterman/Hollywood, Montrose, Foster, and Rainbow beaches as part of a pilot program with Cisco and Everywhere Wireless. The City continues to partner with SilverIP Communications to provide wireless service at Millennium Park.

Additionally, improvements have been made to the free wireless services available at Chicago Public Library branches, City Colleges of Chicago, and other City facilities to accommodate additional users. Thanks to the Broadband Technology Opportunities Program, free Wi-Fi is now available at 21 senior centers, six community service centers, and other public buildings located across the city.

Low-Cost Broadband

(Initiative 7)

The City of Chicago will work with private partners to develop new options for affordable residential broadband service, offering more residents access to low-cost Internet service and increasing Internet usage citywide.

Internet Essentials

Internet Essentials, which provides low-cost broadband services to communities, was launched in Chicago in May 2011 by Mayor Emanuel and Comcast. As a result of outreach and training conducted by the City and nonprofit partners, Chicago continues to top the nation in Internet Essentials program enrollment. Enrollment has steadily increased since program launch — with enrollment doubling in the second year from 7,000 families participating during 2012 to 14,000 in 2013. As of September 2014, approximately 22,000 households or an estimated 85,000 individuals, nearly triple the amount at launch, are connected to the Internet via this program, which offers discounted Internet service to families who have a child in the National School Lunch Program.

Internet to Go

In 2014, Chicago Public Library received $400,000 from the John S. and James L. Knight Foundation and $175,000 from Google to launch Internet to Go, a lending program for Wi-Fi-hotspots. CPL will pilot the program in neighborhoods with low in-home broadband adoption rates and low overall Internet use. Residents in these communities will be able to borrow Wi-Fi hotspots for up to three weeks at a time, connecting to their own personal devices or to laptops or mobile devices also borrowed from the library. CPL will offer digital literacy and skills coaching as a part of the program.

In May 2015, Internet to Go launched at Brighton Park, Douglass,and Greater Grand Crossing branches, circulating approximately 300 Wi-Fi hotspots. The pilot will be expanded during the summer to at least three other branches.

Engage Youth

(Initiative 8)

The City of Chicago will partner with Chicago Public Schools, City Colleges of Chicago, Chicago Public Library, and other institutions to educate and engage young people in technology, preparing them for the jobs of the future and building the city's science, technology, engineering, and math (STEM) workforce.

Expanding Wi-Fi to Every CPS Classroom

While nationwide less than one in three classrooms has internet access that supports digital learning, Chicago has dramatically increased technology infrastructure and access. Over the past four years, the number of schools with sufficient IT infrastructure has increased more than ten-fold — CPS completed the installation of a fiber broadband internet connection with a minimum of 50 Mbps in every CPS facility and distributed over 15,000 iPads to students in welcoming schools. By 2017, the bandwidth in every school will be doubled, each classroom will receive its own Wi-Fi connection, and every student will receive a Wi-Fi connected device.

College to Careers at City Colleges

All seven of the City Colleges are developing College to Careers pathways in high-growth industries to equip students for the jobs of the future, including healthcare; business; information technology; culinary and hospitality; transportation, distribution, and logistics; advanced manufacturing; education; and human and natural sciences. College to Careers is successfully enrolling and placing students, with more than 1,000 students landing internships or jobs through the program to date.

Wilbur Wright College is developing the pathway for its students to be prepared for careers in information technology. Wright College realized a 14 percent IPEDS graduation rate (the federally-defined graduation rate for first-time full-time students who complete their studies within 150 percent of the designated completion time frame), surpassing the projected 12 percent IPEDS rate.

Early College STEM Schools and Post-secondary STEM Education Preparation

Five CPS schools partner with the City Colleges, Cisco, IBM, Microsoft, Motorola Solutions, and Verizon Wireless to train students for STEM careers. Students enrolled at Early College STEM Schools (ECSS) graduate in five years with a high school diploma and an associate's degree. Now in the third program year, ECSS connects high school, college, and the world of work, pioneering a new vision for college and career readiness. These schools are training and preparing a diverse group of students who are traditionally underrepresented in information technology careers—potentially changing the demographics within IT fields across the Chicago region and beyond. During the program's first school year (2012–2013), 942 ECSS freshmen enrolled in new IT courses, with a 90% average pass rate in the Exploring Computer Science course. More than 100 second-year students took college-level math and English courses at Richard J. Daley College, and industry partners are on track to provide more than 1,000 work-based learning opportunities and 900 mentorships to more than 1,300 students since the schools launched in 2012.

In addition, in January 2015 CPS announced a partnership with Exelon and the Illinois Institute of Technology to offer students at Von Steuben High School the opportunity toearn college credit by taking STEM courses at a four-year university, as well as a unique opportunity to learn more about Exelon's businesses through interactions with their employees, internships, and field trips to Exelon's operating facilities. The partnership goal is to provide at least 300 students over five years with the opportunity to take classes at IIT. The coursework will focus on foundational courses that transfer to degree programs at most universities.

CPS Career and Technical Education Program

CPS offers more than 40 different types of Career and Technical Education (CTE) programs across approximately 60 high schools, designed in conjunction with business, which focus on developing skills focus on developing skills that lead to higher-paying jobs. Courses incorporate rigorous classroom instruction, hands-on training, direct work experience, and supplemental student supports. CTE provides high school students a head start on preparing for college and careers in twelve industry pathways, including agriculture and horticulture; business and finance; construction and architecture; culinary and hospitality; health science; information technology; manufacturing and engineering; and transportation.

K–12 Computer Science Curriculum

In 2013, Chicago launched the most comprehensive plan for K–12 computer science education of any major school district in the country. Over the next three years, every Chicago public high school will offer a foundational "Exploring Computer Science" course. Additionally, over the next five years, at least half of all public high schools will offer an Advanced Placement Computer Science course. Chicago will be the first U.S. urban district to offer a K–8 computer science pathway, reaching one in four elementary schools over the next five years. Within five years, CPS will also allow computer science to count toward a high school graduation requirement.

Chicago City of Learning

Chicago City of Learning (CCOL) elevates STEM learning pathways for students by offering thousands of in-person and online learning opportunities for youth, ages 4 to 24, many of them free. Programs include activities that range from science, technology, engineering, and math (STEM), to opportunities in performing arts, sports, and community action. As students participate in these programs, they earn achievement badges, receiving a permanent and shareable record of their accomplishments. The badges also make it easier to connect young people to new learning opportunities, through online recommendations that point youth to other programs that they might like. Some badges even "unlock" unique opportunities, such as special events where students showcase their work, exclusive access to mentors, and internships. For example, last summer, participants in CCOL's STEAM|Studio worked with local business owners to produce their designs and experienced a very unique residency with the Kennedy Center for the Arts in Washington, D.C.

In summer 2014, nearly 4,000 unique in-person learning opportunities and more than 160 online learning opportunities were available to students across Chicago, and 115,000 badges were issued to students. In the future, the currency for badges will grow, with colleges and employers accepting badges as indicators of achievement, as pioneered by DePaul University.

In September 2014, Comcast partnered with CCOL and community-based organizations to promote Get Schooled, Get Connected. This program connects students across Chicago online who compete in weekly quests, play interactive games, and explore educational opportunities to help enhance their path to college.

#CivicSummer & Youth-Led Tech

#CivicSummer is a summer jobs program for teens focused on civics, media, and technology. In 2013 and 2014, the Smart Chicago Collaborative (SCC) and Mikva Challenge worked with hundreds of Chicago teens to help them use the latest digital tools to organize around an issue, amplify their voice, and take positive civic action.

In 2014, 140 youth leaders were part of the Youth Change-Maker Initiative, exploring digital tools and activism strategies to develop digital and media creation skills, build youth-inspired policy solutions, and develop advocacy campaigns focused on resolution and change.

Participants constructed successful advocacy campaigns and earned badges through CCOL. Beyond the summer program, SCC works with local developers to continue developing the digital activism ideas generated by program participants. For example, youth participants came up with an idea for a website that would make it easier for youth to have juvenile records expunged. A local developer then built a website, www.expunge.io, and SCC made the code available on the code sharing site, GitHub, so that it may be reused by other communities.

(Photo by Daniel X. O'Neil)

In 2015, SCC is partnering with Get IN Chicago to provide a Youth-Led Technology summer program in five Chicago neighborhoods: Austin, Englewood, Humboldt Park, North Lawndale, and Roseland. During the six-week program, youth participants will learn how to create a website, and how to find real customers and employers for their tech skills.

CPS Starter League Partnership

In summer 2014, the Network for Teaching Entrepreneurship partnered with the Starter League to offer BizCamp, where 50 Chicago high school students learned and applied entrepreneurship concepts, created a business plan, built a Web application prototype, and pitched their digital product at a start-up business event.

YOUmedia

YOUmedia is an innovative, 21st-century teen learning space available at several CPL locations. YOUmedia connects young adults with books, media, technology, mentors, and institutions throughout Chicago in library spaces designed to inspire student collaboration and creativity. Mentors help teens learn to use a variety of technology and digital equipment, including still and video cameras, drawing tablets, and audio-, video-, and photo-editing software. Students then create and share digital media through a social network for program participants.

In 2014, thanks to a $2-million investment from the John D. and Catherine T. MacArthur Foundation and an additional $500,000 from the City, the YOUmedia program expanded from 5 to 11 locations and welcomed nearly 22,000 visitors citywide. Over the next four years, the number of YOUmedia programs will double to 24 so that more families across the city can experience digital learning in their local library.

I

US2020 City Competition

n June 2014, Chicago was named one of seven cities nationwide that will share a $1 million grant through the US2020 City Competition. The grant will allow CPS and nonprofit and industry partners to increase STEM education and awareness efforts in Chicago.

Sponsored by Cisco Systems, the US2020 competition challenged cities across the country to develop innovative models that will increase the number of STEM professionals engaging and mentoring students, as well as STEM education opportunities for girls, minority students, and students from low-income families. As a part of this effort, Chicago is recruiting 500 STEM professionals to mentor 5,000 CPS students in 2015.

(Photo by Brooke Collins)

Digital Skills Training

(Initiative 9)

The City of Chicago, Chicago Housing Authority, City Colleges of Chicago, and other partners will deliver digital literacy training and create other opportunities for more hands-on experience with technology to increase digital skills of Chicago residents.

As a result of additional investments made over the past few years, residents can obtain free access to the Internet, computers, and digital skills training at more than 250 locations across the city, with programs available in Spanish and other languages at some locations. Programs and resources available include the following:

CyberNavigators at the Chicago Public Library

CyberNavigators provide one-on-one and class-based digital skills training to nearly 100,000 Chicagoans every year at 49 library locations. Privately-funded through the Chicago Public Library Foundation, the CyberNavigators program has been replicated locally at Smart Health Centers, and has been identified by the Urban Libraries Council and others as a national model for digital skills training. Over the next few years, the CyberNavigators program will expand to every library throughout the city.

Technology Training at CHA Labs

Through a Broadband Technology Opportunities Program (BTOP) grant, the CHA opened eight new computer labs in its housing developments between 2011 and 2013. Technology training is offered to CHA residents at these labs, which are also staffed by residents through a job-training program run by TEC Services. Since 2011, more than 102,000 technology training sessions have been delivered to CHA residents. One hundred and twenty CHA residents have completed the job training program, and another 17 residents are currently employed managing the labs and providing training through the program.

FamilyNet Center Expansion

FamilyNet Centers have been serving as digital skills training hubs since 2011, delivering more than 13,000 training sessions for thousands of Chicago residents. Originally funded by BTOP, these centers integrate technology training with a variety of support services. In addition to helping residents develop technology skills, including using email, online banking, common business and productivity applications, and online government services, the centers connect families with financial counseling, income support, resume and job search, and job retention assistance.

In 2014, the number of FamilyNet Centers increased from five to 12 through a partnership between the City, LISC Chicago, AmeriCorps, and Comcast. FamilyNet Centers are located within Centers for Working Families sites in Auburn Gresham, Back of the Yards, Chicago Lawn, Englewood, Humboldt Park, Little Village, Logan Square, North Lawndale, Pilsen, Ravenswood, Quad Communities, and Woodlawn.

Smart Health Centers

Over the past two years, more than 20 Smart Health Centers opened within existing health clinics throughout Chicago. Smart Health Centers, managed by the Smart Chicago Collaborative (SCC), provide patients with access to technology and trained health information specialists, called Health Navigators. Health Navigators guide patients through the process of obtaining their health records and finding reliable health information online, as well as provide basic digital skills training. The program, which is modeled after CPL's successful CyberNavigator program, received support from BTOP and continues to be supported by the Sprague Foundation. To date, more than 7,000 patients have received one-on-one assistance and more than 3,000 group training sessions have been provided at Smart Health Centers.

Data Learnathons

In 2014, the City began hosting Data Learnathons, free intensive workshops focused on helping residents and institutions build data literacy skills. Volunteer tutors from Chicago's vibrant civic-development community teach the fundamentals of downloading, cleaning, and mapping data with applied, hands-on examples. Participants utilize data obtained from Chicago's Open Data Portal and open source software to address real-world challenges that impact Chicago. As a result of this data-literacy training, residents are empowered to conduct research, download and analyze government information, and create maps and other data visualizations to help achieve community or organizational goals.

Promote Digital Excellence Activities

(Initiative 10)

The City of Chicago will work with the Smart Chicago Collaborative (SCC), the Local Initiatives Support Corporation (LISC Chicago) and other partners to transform every community into a smart community, promoting the use of the City's technology resources and the Smart Communities benchmark and toolkit to enable residents to gain maximum benefit from digital technology.

Connect Chicago

Launched in 2013, Connect Chicago is a network of more than 250 locations offering free computer access in Chicago. Member organizations provide residents with free access to technology resources and training, and more than 100 practitioners from these locations are part of a Meetup group that gathers regularly to share best practices and highlight useful tools. For example, some members have identified quality free digital literacy training resources and online tools that computer centers can use to schedule training sessions. These best practices are shared by the SCC so that they may also be implemented successfully elsewhere.

(Photo by Daniel X. O'Neil)

Public Computer Access

(Initiative 11)

The City of Chicago, Chicago Housing Authority, City Colleges of Chicago, Chicago Public Library, and other organizations will continue to offer public computer labs to provide free Internet and computer access to residents.

New and Improved Computer Centers

Thanks to federal, state, and local funding, between 2011 and 2013, 49 new public computer centers opened and more than 3,000 new computers were deployed. Now over 250 centers provide residents with free access to nearly 4,500 computers. In addition, broadband speeds and wireless capacity were added and/or improved at 79 libraries, seven community colleges campuses and five satellite locations, 21 senior centers, and five community service centers.

The City's Department of Innovation and Technology works with CPL and the Department of Family and Support Services to support the technology equipment and infrastructure for more than 100 Connect Chicago locations across the city that serve nearly 2.9 million sessions per year. Technology training at these sites is developed and delivered by CPL and DFSS.

In all, more than 250 Connect Chicago locations currently provide free access to technology resources and training. Partners, including the City Colleges and CHA, will continue to invest in these centers, including providing digital skills training to Chicagoans.

Educational and Creative Resources

(Initiative 12)

The City of Chicago provides many opportunities to residents to engage in technology-related creative and educational activities, encouraging residents to innovate while building new 21st century skills.

Chicago Public Library's Maker Lab

Chicago Public Library's award-winning Maker Lab is a hands-on, collaborative learning space where people come together to share knowledge and resources to design, create, and build.

The lab offers Chicagoans an introduction to technology and equipment that engages them in new forms of art, manufacturing, and business opportunities. The lab features instruction on a variety of design software and equipment, including 3D printers, laser cutters, a milling machine, and a vinyl cutter. Residents can manufacture models and goods and even learn robotic knitting. In 2014, CPL launched Mini Maker Labs in neighborhood library branches with events taking place from July to late November. Since launching in July 2013, Maker Lab has hosted more than 100,000 visitors, with nearly 10,000 individuals attending nearly 1,000 classes and events. The City's first free maker space is supported through a grant from the Institute of Museum and Library Services and the Chicago Public Library Foundation.

Digitizing CPL's Archives

CPL is digitizing assets related to Chicago's neighborhood history, making historical resources about Chicago's neighborhoods, parks, and people more accessible to residents and communities. Resources related to former Mayor Harold Washington, the Chicago Examiner newspaper, the Chicago Theater, and more may be accessed at digital.chipublib.org.

Finch Robots at CPL

CPL has partnered with Google Chicago to provide library patrons with robots that can teach them hands-on computer-programming. Thanks to Google's donation of 500 Finch robots, anyone with an adult CPL card can now check out one of the state-of-the-art robots in order to learn the basics of computer coding. Since their arrival at CPL in 2014, the robots have been checked out 524 times and 385 holds have been placed.

Efficient, Effective, and Open Government

Leverage data and new technology to make government more efficient, effective, and open

Data-Driven Efficiency

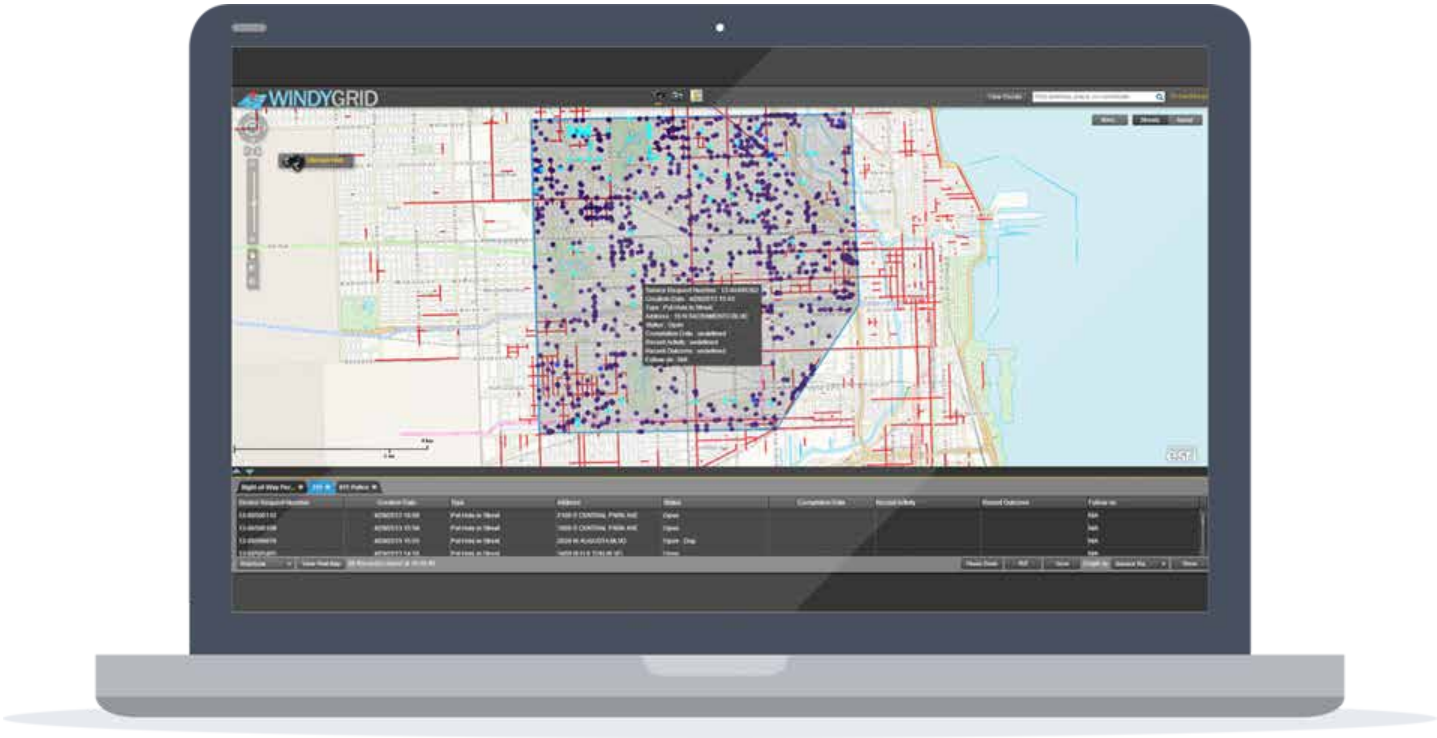
(Initiative 13)

The City of Chicago will gather and analyze data that allows City leaders to proactively address civic challenges, with the goal of increasing government efficiency and effectiveness.

WindyGrid

WindyGrid is a geospatial Web application designed by the City's Department of Innovation and Technology that strategically consolidates Chicago's big data into one easily accessible location. The application, which was named the top government innovation by Information Week in 2013, presents a unified view of City operations—past and prsesent—across a map of Chicago, giving City personnel access to the city's spatial data, historically and in real time, to better coordinate resources and respond to incidents. Examples of City data include 911 and 311 service calls, transit and mobile asset locations, building information, geospatially-enabled public tweets, and other critical information.

The City is currently preparing to release the application's code through an open-source license, making this the first open source situational awareness system that other municipalities can use and build upon.



Preventative Rodent Baiting

In 2013, DoIT's advanced analytics team developed a forecasting model to determine locations that were likely to experience a surge in rodent complaints in the near future. In partnership with the Event Pattern Detection Laboratory at Carnegie Mellon University, the algorithms look at 31 different factors from the City's 311 system to forecast complaints, resulting in a revised process that reduces the Department of Streets and Sanitation's workload by 20 percent.

Prioritization of Food Inspections

In 2014, DoIT's advanced analytics team and the Chicago Department of Public Health (CDPH) launched an analytical model that forecasts critical violations across the city's more than 15,000 food establishments. By examining prior inspection results and other activities, the model predicts which businesses are most likely to have critical violations in the future and allows the City's three dozen food inspectors to prioritize inspections of those establishments that exhibit the greatest risk.

Quickly locating restaurants with critical violations is a priority for CDPH, as these restaurants are most susceptible to accommodating the start or spread of food-borne illnesses. During a two month evaluation of this new model, the City found critical violations more than seven days earlier than it would have using the previous process. As a result of these earlier citations, the risk of patrons becoming ill is potentially reduced.

Foodborne Chicago

Foodborne Chicago is a first-of-its-kind, nationally recognized website that connects people who complain about food poisoning on Twitter with CDPH.

Built by the Smart Chicago Collaborative, the application is designed to search for tweets related to food poisoning in Chicago, automatically identifying those that may be about an actual food poisoning case coming from Chicago. CDPH reviews the tweets and replies via Twitter with a link back to the Foodborne Chicago website for additional information.

A study of the system, published by the Centers for Disease Control, found that during March 2013 - January 2014, FoodBorne Chicago identified 2,241 "food poisoning" tweets originating from Chicago and neighboring suburbs. The complaints identified 179 Chicago restaurant locations; at 133 (74.3%) locations, CDPH inspectors conducted unannounced health inspections. A total of 21 (15.8%) of the 133 restaurants reported through FoodBorne Chicago failed inspection and were closed; an additional 33 restaurants (24.8%) passed with conditions, indicating that serious or critical violations were identified and corrected during inspection or within a specified timeframe.

Energy Data Map

Published in April 2014, the Chicago Energy Data Map is a visualization of all residential natural gas and electric energy use for Chicago in 2010. In addition to exploring energy usage on both neighborhood and census-block levels, the website enables users to review energy-efficiency tips and pledge to make energy-efficiency improvements on behalf of their neighborhoods.

Part of the Mayor's Retrofit Chicago Initiative, the Energy Data Map is a collaborative effort between the City, the Civic Consulting Alliance, Datascope Analytics, and IDEO, with support from Accenture, Elevate Energy, the Citizens Utility Board, ComEd, and Peoples Gas.

City Data
(Initiative 14)

The City of Chicago will continue to improve the accessibility and quality of City data available, both internally and externally, and facilitate methods for analyzing that data to help create a smarter and more efficient city.

Open Data Portal

The Chicago Open Data Portal provides user-friendly access to more than 600 data sets, having grown by more than 200 data sets over the last two years. On the portal, the public can browse and download data to analyze and create maps and graphs. Chicago's vibrant civic developer community uses the City's Open Data Portal to create helpful civic applications, including sweeparound.us, which allows residents to get reminders about upcoming street sweeping, and chicagoflushots.org, which helps residents find a nearby place to get a flu shot. Volunteers and civic-minded residents also regularly convene for meetups, hackathons, hack nights, and learnathons centered on the City's open data.

Chicago issued the first-ever Open Data Report in 2013, reviewing the City's progress in advancing open-government initiatives and its strategies and goals for the future. The report highlights progress in releasing data to the public as part of creating a more efficient government, expanding use of social and digital media in public communication, and further consolidating local IT services to improve the efficiency and quality of information delivery.

Chicago has released a number of high-value data sets in 2014, including water data on Chicago's beaches, enforcement data from automated cameras, and public vehicles' licenses. Chicago will continue to expand the number of data sets to be used by residents, entrepreneurs, and anyone with an interest in government data.

Chicago was the first City to accept edits to select data sets through the City's GitHub account. These data are provided in a free business-friendly MIT software license. The GitHub site contains data on bike routes, street locations, pedway routes, bike racks, and building footprints, which can be updated by the public as the data change. The MIT software license promotes an even more business-friendly license to invite start-ups and small companies to use open data as part of their business.

In 2015, in addition to adding more datasets, the City will relaunch its Open Data Portal, providing users with a visual City performance dashboard, and allowing users to interactively explore the data through a series of graphs, charts, and maps.

GitHub

In addition to data, Chicago has begun to make other data-related projects publicly available on GitHub, including:

- **metalicious**—an open-source, user-friendly data dictionary platform
- **Open Data ETL Utility Kit**—a framework to help governments automate updates to data portals
- **RSocrata**—a library to enable downloading data for use in the open-source statistics tool R
- **Food**-desert analysis—the data used by the advanced analytics unit in its analysis of food deserts in the city

Data Dictionary

Chicago's data dictionary displays all metadata—data about data—on each data set maintained by the City. The platform—the first user-friendly website of its kind—allows users to find out what data Chicago collects and where the data is stored. The dictionary is a key, unprecedented step in providing full transparency to the City's data.

ETL Utility Kit

The City's Department of Innovation and Technology released the Open Data ETL Utility Kit at the Code for America Summit in September 2014. The ETL Utility Kit provides automation tools to other governments that are deploying open data portals. The toolkit allows governments to automatically update data on their portals with minimal configuration, bypassing the need for staff to work on manual updates, which is critical to creating sustainable open data programs. The framework was developed by DoIT for its own operations and was released to help the hundreds of other cities that have begun their own open data programs.

Open Data Status Blog

The City launched a new blog to provide updates on the Open Data Portal. Chicago's Open Data Portal is a platform that helps drive business and applications used by the public. In addition to @ChicagoCDO, the Twitter account of the City's Chief Data Officer, the website provides a means of informing developers and other users about changes, outages, and other factors that may impact the applications that consume information from the Chicago Open Data Portal. The website also provides customer service for the businesses, residents, civic developers, and researchers that have come to rely on the portal.

Improve Communications

(Initiative 15)

The City of Chicago will expand and update its mobile, social media, and online technology to increase and improve communication and interaction with residents and businesses.

Open 311

Since taking office, Mayor Emanuel has implemented a series of reforms to make the delivery of City services more transparent and responsive to residents. In 2012, the City unveiled the Open 311 Service Tracker system, which enables residents to use their smartphones or computers to submit service requests and track requests in real time using a FedEx-style tracking system. The City also upgraded the ChiTEXT tool to allow residents to submit service requests and receive updates via text message. The number of service requests opened online or via mobile app has been steadily increasing. In 2013, 140,000 requests were created via digital channels, and in 2014, more than a quarter of a million requests were generated online or via mobile applications, a 75 percent increase.

To fully implement the Mayor's Open 311 vision and better support this increase in online interactions, the City will upgrade the technology behind the system. The upgrades will further increase transparency of service requests and City operations, offer residents more options for making service requests and reporting issues, and allow residents to share ideas for service improvements and collaborate with their neighbors to take action to improve their communities. The City launched a competitive procurement process and will select the winning vendor by the end of 2014 with project commencement beginning in early 2015.

Residents and businesses will play an important role in the development of the Open 311 platform. In October, the City began engaging Chicago residents on improvements to the 311 system by soliciting their input online. In addition to submitting ideas online, residents can attend upcoming public listening sessions and neighborhood focus groups, and submit their ideas via social media or to Open311@cityofchicago.org. Residents and businesses will also be able to participate in testing the new platform to ensure that it meets the needs of Chicagoans.

CHIdeas

In September 2014, Mayor Emanuel announced the launch of CHIdeas, an online community forum to engage Chicago residents and businesses in a discussion on how to improve City services, create programs and initiatives in our neighborhoods, and enhance the quality of life across the city. Similar to portals used by the administration during the transition and budget processes, CHIdeas provides a structured platform to solicit ideas from the public and promote community dialogue on key issues.

CHIdeas has covered topics including minimum wage, early learning programs, library services, public art installations, emergency preparedness, and small business services. Since launching, the site has welcomed more than 11,350 unique visitors and the City is currently working to implement fifteen of the ideas submitted. New questions are added to the site regularly and residents are encouraged to check back often and suggest additional topics for discussion.

Chicago Public Library Website

Funded by a $1 million grant from the Chicago Public Library Foundation, CPL launched its new website in April 2014 through a partnership with BiblioCommons. This mobile-friendly website is the first of its kind to fully integrate all aspects of a patron's online library interactions. Users can easily search for materials, keep a history of what they have checked out, and maintain a wish list of what they want to borrow in the future. They can also rate titles, as well as write and read reviews of books, movies, and music. Content will be visible not only to other CPL patrons, but also to the communities of the 200 libraries around the world currently using BiblioCommons's online catalog platform. Free CPL apps will also be available for iPhone/iPod touch and Android devices.

The new website also includes two new online offerings for downloading and streaming content. Zinio offers more than 150 digital magazines for free download from the library's website and allows patrons to keep them for as long as they like, with no return required. Hoopla offers a free streaming service for movies, television, music, and audiobooks, which can also be downloaded and saved for future use.

Since the website's launch in April 2014, CPL has seen a nearly 18 percent increase in website visits via mobile devices. Residents have been taking advantage of the new social features of the CPL site during the last year. More than 170,000 accounts have been created. Patrons have also created 5,458 lists, rated 50,443 catalog items, and provided more than 3,100 comments.

Enterprise Implementation

(Initiative 16)

The City of Chicago will implement a shared-services model for information technology across City departments and agencies that will result in improved services at lower costs, through streamlined processes and the sharing of IT resources.

The Strategic Technology Alignment Roadmap Project

The Strategic Technology Alignment Roadmap (STAR) Project began in March 2014 to develop a strategic plan for the City's Department of Innovation and Technology to deliver improved IT services at lower costs. The STAR Project, a partnership between the City and Computer Aid, Inc., will result in a roadmap to consolidate applications and key support services beginning in 2015 and will enable the City to reinvest identified savings in the City's IT modernization efforts.

Paperless Small Business Center

In October 2013, Mayor Emanuel announced that the City's Small Business Center would go paperless by the end of 2016. Moving permits and business licenses online will provide another convenient option for small businesses conducting business with City Hall, allowing them to focus on starting and growing their businesses.

The online permit and business license portal officially launched in February 2014, when the Chicago Department of Public Health's Air Pollution Control permits were transitioned to the online application format. When complete, the Small Business Center portal will house business licenses, building permits, public-way use permits, and special event permits. The portal will include online applications, navigational tools to effectively utilize the website, a personal dashboard to track the status of permit and license applications, a license and permit "wizard," and a convenient online payment system. The site will also feature multilingual support via Google Translate as well as professionally-translated information and documents.

Enterprise Content Management and Process Modernization

The Content Management and Process Modernization team was formed in 2013 to reduce manual- and paper-intensive operations by automating and streamlining City business processes. The team oversees the City's enterprise content management systems, which include IBM's FileNet and Microsoft's SharePoint platforms, and supports more than 30 business applications that leverage these platforms, including paperless budget hearings andhuman resources processes.

Information Security Office Center of Excellence

DoIT's Information Security Office (ISO) was created in August 2012 to guide cyber-security planning and response across all City departments. Early efforts focused on improving tactical readiness and with the addition of federal Urban Areas Security Initiative (UASI) funding in 2014, the ISO began implementing a three-year strategy to improve the City's overall cyber-security infrastructure. These capability improvements are focused on the identification and prevention of malicious cyber-activity in the critical areas of public safety, water, and aviation.

As part of the initial phase, the City and Cook County conducted a joint procurement to purchase software and hardware needed to better monitor information networks and respond to cyber-attacks, saving the City $3.2 million in costs. The first phase of improvements will be completed in summer 2015. The second phase will begin in Q3 2015 and will focus on improving existing capabilities and introducing additional security controls in the areas of identity and access management.

Additionally, in 2014, the ISO created the first cross-agency regional working group focused on improving the cyber-readiness of public entities in the Chicago region. The Chicago Region Cyber-Security working group includes representatives from the City, Cook County, Chicago Public Schools, Chicago City Clerk, Chicago Transit Authority, the Office of Emergency Management, the Chicago Fire Department, and the Chicago Police Department. Through this working group, each participating entity can leverage the work of the group to find efficiencies and drive the maturity of each of their cyber-security efforts more rapidly.

Consolidate Data Centers

(Initiative 17)

The City of Chicago's Department of Innovation and Technology is building the Chicago Cloud using state-of-the-art hardware and data management software to consolidate its data centers. Other government entities will be invited to join to further reduce costs and improve efficiency.

Chicago Cloud

DoIT has invested in a modern hardware platform, referred to as the Chicago Cloud, designed to host City and sister-agency database systems to improve technology performance and reduce operating costs. The City negotiated the initial purchase of these infrastructure improvements at a significant discount to market price, providing taxpayers a savings of $4.2 million while simultaneously improving services.

Several key systems have been migrated to the Chicago Cloud in 2014, including the City's enterprise resource planning, inspections and permitting, and 311 systems. These migrations have enabled Chicago to retire older hardware and realize performance improvements.

The Chicago Cloud leads to improvement in speed and efficiency of queries: reports now run 95 percent faster, reducing the amount of time staff has to wait for access to critical information. The platform also provides higher reliability through redundancy, and reduces outages and down times, resulting in lower licensing and support costs.

Innovative Technology Solutions

(Initiative 18)

The City of Chicago's Department of Innovation and Technology will partner with the private sector to deliver commoditized technology, allowing staff to focus on developing innovative technology solutions to issues only government can address.

Cloud Technologies

With the availability of cloud-based "software as a service" solutions to support City communications and business processes, Chicago residents and City employees gain access to innovative technologies while the City reduces its licensing and support costs. In 2014, Chicago Public Library partnered with BiblioCommons to launch a first-of-its-kind library website. In addition to selecting a cloud solution for its Open 311 system, the City has also established similar partnerships for email and productivity applications, as well as enterprise asset management.

Office 365

In 2013, the City partnered with Microsoft to migrate email and productivity applications to the cloud for more than 30,000 City employees. Completed in early 2014, the move to Office 365 modernizes the City's technology, reduces support and licensing costs, increases security and stability, and enables departments to communicate and collaborate more effectively.

Enterprise Asset Management

As part of the modernization of its 311 system, the City will implement Infor EAM, a cloud-based software solution, to support enterprise work-order and asset management. The new system will seamlessly integrate with the resident-facing Open 311 system and will enable City field staff to update service-request status via mobile device, allowing residents to get real-time updates for each request.

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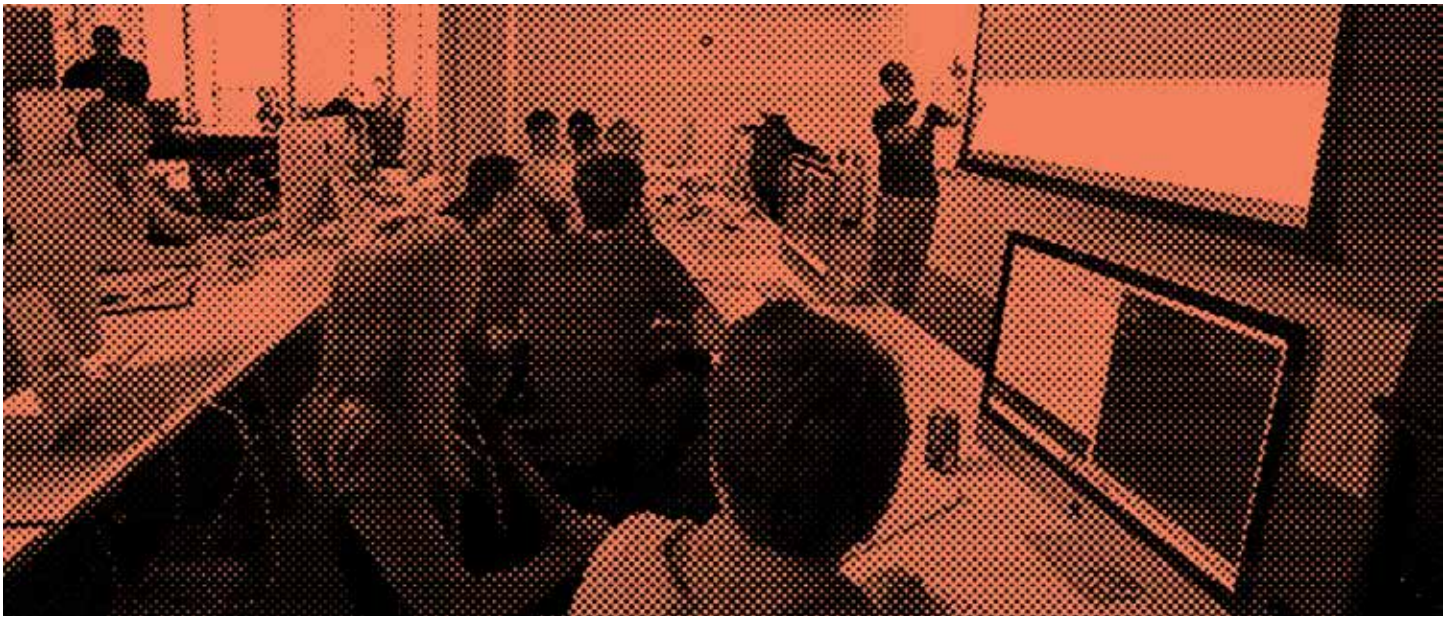
Civic Innovation

Work with civic technology innovators to develop creative solutions to city challenges



Research Data-Driven Solution

(Initiative 19)

The City of Chicago will continue to use data analytics to help managers across the city explore—and solve—some of the most vexing problems facing municipalities.

The City's Department of Innovation and Technology has formed an advanced analytics unit to apply advanced research methods in tackling the City's operational and policy questions. The team uses the same research methods as university researchers and combines data from dozens of resources to improve the efficiency of rodent-baiting operations, increasing the likelihood of citing dirty restaurants, and other topics. In addition, the advanced analytics team has begun to develop the SmartData Predictive Analytics Platform, which will enable service improvement efforts across all City departments.

Chicago's SmartData Predictive Analytics Platform

In 2013, Chicago was one of five cities selected out of more than 300 applicants to receive a Mayors Challenge grant from Bloomberg Philanthropies to support civic innovation projects. The SmartData Predictive Analytics Platform (SmartData Platform) will be the first-ever open-source predictive analytics system designed and built for a city, aimed at aggregating and analyzing city information to help leaders make smarter, faster decisions and help operations run more efficiently and effectively.

Since winning the grant, DoIT has been implementing pilot projects to test and evaluate predictive analytics methods used by the SmartData Platform. The first pilot used data from 311 calls to enhance the efficiency of the Department of Streets and Sanitation's rodent-baiting efforts. By analyzing trends in the data, DoIT identified 31 different 311 call types that help predict where and when rat population spikes are likely to occur. This information has helped DSS implement a new process that reduced management workload by 20 percent.

As an open-sourced project, the SmartData Platform will be shared with other municipalities so that they may develop similar initiatives leading to more-informed decision making and efficient, effective outcomes.

Data Science for Social Good

The Eric & Wendy Schmidt Data Science for Social Good fellowship is a University of Chicago summer program that brings aspiring data scientists from across the globe to Chicago to work on data mining, machine learning, big data, and data science projects with social impact. Working closely with government agencies, including the City, Chicago Public Schools, and nonprofit organizations, fellows address real-world challenges in education, health, energy, transportation, and more. In 2014, the DSSG fellows helped CPS develop a model to more accurately predict next year's enrollment for each school in the system and better allocate its resources. They also partnered with the Chicago Department of Public Health to help find homes that are most likely to still contain lead-based paint hazards to enable CDPH and their partners to link high-risk children and pregnant women to inspection and lead-based paint mitigation funding before any harm is done.

Support Civic Hackers

(Initiative 20)

The City of Chicago's Department of Innovation and Technology and the Smart Chicago Collaborative will continue to provide a broad range of tools and financial resources to help residents and civic technologists use technology to improve urban life.

Chicago School of Data

The Chicago School of Data project was launched in early 2014 by SCC and is a collaborative framework to encourage civic innovation in Chicago. The Chicago School of Data brings together individuals from nonprofit organizations, academic institutions, and government to encourage data sharing and problem solving with the goal of creating engaged and healthy communities.

To kick off the Chicago School of Data project, SCC spent time in summer 2014 scanning and documenting the regional landscape—getting to know the players in Chicago's data ecosystem and documenting their data uses and challenges.

The Chicago School of Data officially launched in September 2014 with its Data Days event, which brought together over 400 people from organizations across Chicago to discuss, share, and exchange their data methods, tools, strategies, challenges, and goals. SCC published key takeways from the conference and will publish its full report in summer 2015.

The Chicago School of Data is made possible by a grant from the John D. and Catherine T. MacArthur Foundation, one of its three founding organizations. In addition, the City of Chicago, Cook County, and LISC Chicago provide a core steering committee for the project. You can watch sessions from the Chicago School of Data Days on the SCC YouTube Channel

(Photo by Daniel X. O'Neil)

Civic User Testing Group

The Civic User Testing Group, or CUT Group, gathers Chicago residents from across the city to test and review civic applications that were developed using city data. Hosted by SCC, the CUT Group sustains a meaningful collaboration with residents and developers around data and technology.

Over the past year, the program held six CUT Group testing sessions, doubling the number held in 2013. The program includes more than 800 Chicago residents, representing all 50 wards and 77 community areas, and continues to grow. Discussions and reviews from CUT Group sessions have provided valuable insights and improved understanding on how residents currently interact—and how they would like to interact—with data about the city.

This year, SCC also released the CUT Group Book—a how-to guide on launching similar programs to assist other cities.

(Photo by Daniel X. O'Neil)

Chicago Data Visualization Meetup

Organized by the City's Chief Data Officer, local data enthusiasts meet monthly to network, learn about new tools, and participate in data visualization contests. The group, organized in 2012, currently has more than 1,400 members.

Developer Resources and Services

As an organization committed to improving lives of Chicagoans through technology, SCC offers an array of resources for developers who work to make this mission a reality.

For some civic application projects, SCC acts as a fiscal agent and manages development and funding resources; for others, SCC donates infrastructure resources, such as Amazon Web Services, Heroku, and Google Apps for Business. As a founding tenant of 1871, SCC also has seats available for start-ups to take advantage of the location and resources of the co-working space and incubator.

SCC's support for civic hackers also includes hosting many code repositories on its own GitHub organization page, providing an online place to share innovative ideas and projects.

The City provides developer resources at digital.cityofchicago.org and provides customer service support to developers that use the City's data resources.

Chi Hack Nights

Chi Hack Night is a gathering of civic-minded individuals doing work at the intersection of open government, cities, and technology. The event serves as an open forum to advance civic projects; brainstorm new civic projects; and learn about open data, smart cities, and open government.

Attendees range from City officials to technology experts to interested Chicago residentsore than 150 Hack Nights have been held to date, and attendance continues to rise, strengthening Chi Hack Night's role as a town hall and support center for Chicago's growing civic-hacker community.

The Chi Hack Night is organized by Open City, documented by the SCC, and sponsored by Code for America, DataMade, Dev Bootcamp, and GitHub. Braintree hosts the event every Tuesday night at their offices in the Merchandise Mart.

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Technology Sector Growth

Encourage the vibrancy of Chicago's Technology Sector by attracting and retaining STEM professionals and supporting the creation and expansion of technology companies

Expand Incubators and Co-working Spaces

(Initiative 21)

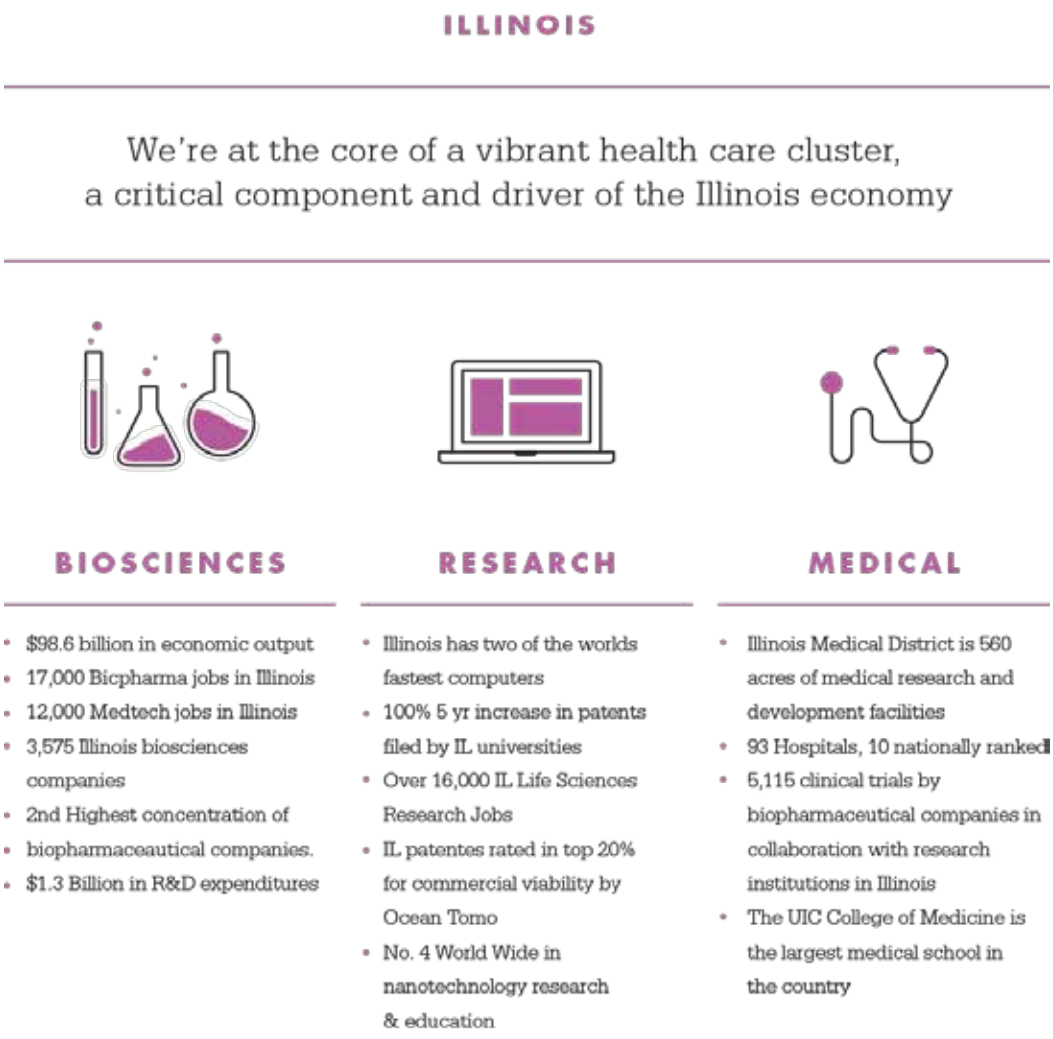
ChicagoNEXT, industry leaders, academics, and others will create a center for Chicago biotech and pharmaceutical start-ups. This incubation, networking, collaboration, and business-acceleration space will help increase the number and size of bioscience companies, improve research, and increase opportunities for commercializing research.

MATTER

In February 2015, Chicago's new entrepreneurship and innovation incubator for next-generation health IT, medical device, diagnostics and biopharma companies, MATTER, opened, bringing together healthcare entrepreneurs and industry leaders in a shared space dedicated to individually and collectively fueling the future of healthcare innovation. Led by a team of industry experts, MATTER creates an environment where industry, academia, and government can collaborate to solve complex healthcare challenges.

As a hub for healthcare entrepreneurs that will help jump-start and grow early-stage healthcare IT, medical device, medical diagnostics, and biopharma companies, MATTER enables entrepreneurs to work, collaborate, and engage with industry leaders, mentors, universities, doctors, investors, and other experts who can help them develop their new businesses.

The State of Illinois catalyzed the launch of MATTER by providing $4 million to secure and build out its home on the 12th floor of the Merchandise Mart. The first 10 companies, all from the Chicago area, include Alta Thera Pharmaceuticals, Caretree, CancerIQ, Coeus Health, ProVazo, Qualia Health, Regroup Therapies, Resonance Medical, Sparrow Pharmaceuticals, and TeleHealth Robotics.



Connect Entrepreneurs

(Initiative 22)

The City of Chicago and ChicagoNEXT will create a program to connect start-ups and the business community to develop partnerships that will provide guidance and funding and drive synergies and momentum in the technology community.

CleanTech Innovation Bridge

In summer 2014, Mayor Emanuel announced the launch of a three-year project to help start-ups and entrepreneurs gain access to clean-technology testing and demonstration facilities. The CleanTech Innovation Bridge (Bridge) will match the needs of large, established firms with technologies being developed by start-up companies, as well as government-supported entities like labs and university research that focus on transportation, the grid, and the built environment.

The Bridge will host showcases and recruiting events where start-ups will present their products in a real-world environment. The program is expected to grow 125 new jobs in Chicago's clean-tech sector over the next three years, 20 percent of which will be for women and minorities. Chicago researchers are also expected to file 10 to 20 patents over three years in conjunction with the program.

Funding of $2.2 million from the United States Department of Energy and private sources enables the Bridge to run programs around commercialization that include mentorship, business development, capital access, and testing and demonstration. The Bridge will also work with the national organization Clean Technology Accelerator Program (CleanTAP), to develop best practices for clean-energy incubators that can be replicated nationwide.

Diverse STEM Workforce

(Initiative 23)

Mayor Emanuel and the city's business community will continue to encourage STEM professionals to join Chicago's talented technology workforce by actively recruiting on college campuses and through other activities.

Step IT Up Chicago

In summer 2014, Mayor Emanuel, UST Global, the Chicagoland Chamber of Commerce, and Skills for Chicagoland's Future launched Step IT Up Chicago, a new IT training program working to recruit minority women into the IT field. The program will train 100 women in various IT tracks over the next year and partner with local corporations to place program graduates into full-time employment.

Step IT Up Chicago is part of Step IT Up America, a national program sponsored by UST Global that serves associate's degree and community college students and equips them with technological skills, mentorship programs, and the industry knowledge necessary to prepare them for a career in the IT sector. The program comes to Chicago after successful pilots in Atlanta, Philadelphia, and Detroit. UST Global is working with Albright Stonebridge Group, chaired by Madeleine Albright and Carlos Gutierrez, and plans to expand the program to 10 cities nationwide, with the ultimate goal of providing training to more than 1,000 minority women during the next year.

"Why Chicago"

(Initiatives 24 and 25)

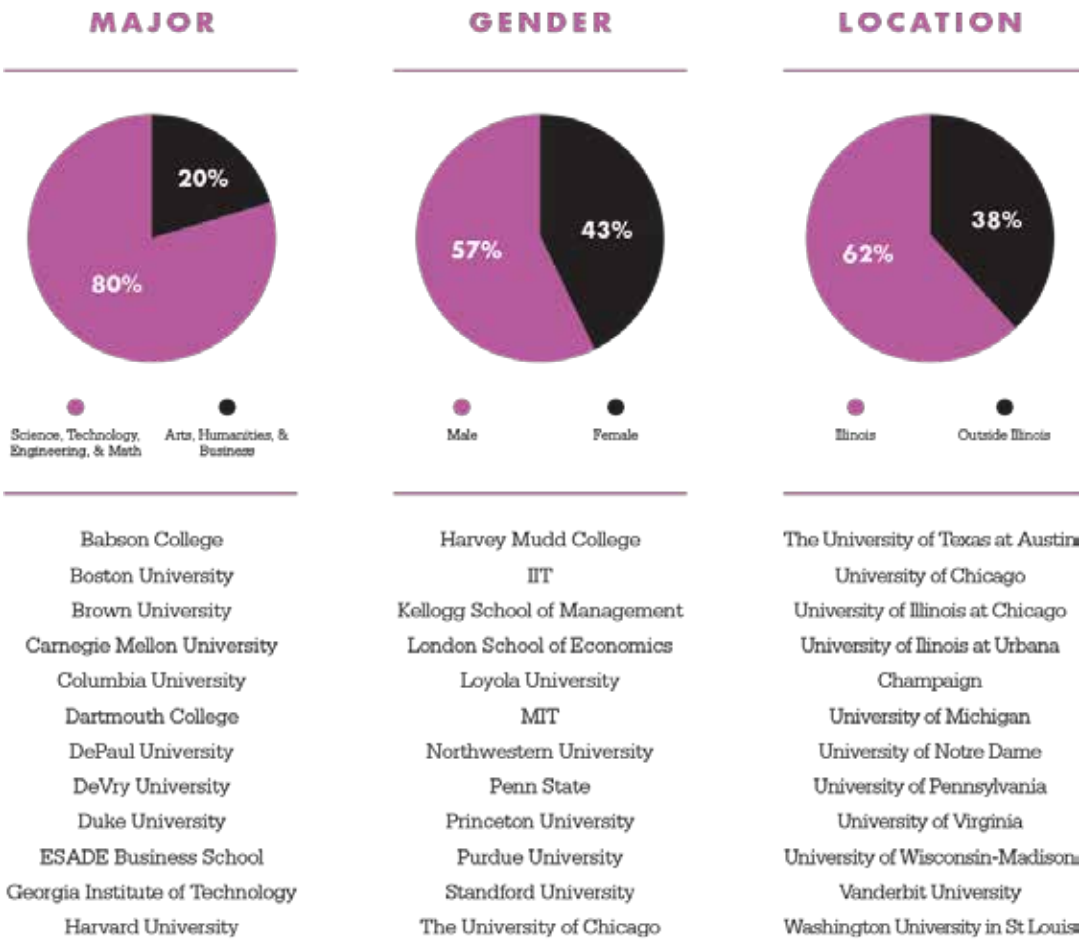
The City of Chicago will partner with Chicago's many technology stars and other business leaders in a variety of events to share the narrative of Chicago as a technology destination and encourage workers and businesses to locate here.

The City will encourage technology firms in Chicago to share their civic pride by demonstrating the vibrancy and many successes of Chicago's technology sector.

ThinkChicago

ThinkChicago is an innovative program launched by Mayor Emanuel in 2011 that introduces the nation's top technology and computer science students to the city's fast-growing technology sector. Each year, participants from across the country gather in Chicago to meet with industry leaders, visit business headquarters, gain free VIP admission to Lollapalooza and Chicago Ideas Week, and participate in panels featuring Mayor Emanuel and Chicago-based technologists.

Past participants met with representatives from leading companies, including GrubHub, Belly, kCura, 37Signals, and Vibes, and heard talks by renowned speakers, including Eric Lunt (BrightTag CTO), Dag Kittlaus (creator of Siri), and Harper Reed (Obama for America 2012 CTO). Attendees have also visited the 1871 incubator space, met Mayor Emanuel, and toured Chicago landmarks and other attractions.



Internet of Things

As the Internet becomes ubiquitous in our lives, the Internet of Things (IoT) is also more widespread—that is, there's an increase in the number of everyday objects with network connectivity, allowing them to send and receive data. This growing technology of networked objects and sensors can increase resident and visitor interaction with cities by providing real-time information about the environment.

In October 2014, as a growing hub for sensor technologies, Chicago hosted the second annual Internet of Things World Forum. Organized by Cisco Systems, the forum is a massive global event devoted to helping accelerate the market adoption of the Internet of Things and includes the world's top innovators, practitioners, and thinkers in business, government, and academia. Walking tours, held during the Forum and organized by Cisco and the City, highlighted how the Internet of Things is reshaping Chicago, providing innovative solutions to real-world problems, including public safety, transportation, parking, energy efficiency, and waste management. The forum connects Chicago with the rest of the world on this important issue and through new opportunities helps fortify the City's approach to technology and innovation.

In March 2015, the Illinois Technology Association (ITA) announced the formation of the ITA Internet of Things Council - a public/private partnership that brings together leaders from the tech space, academia, consumer world, and government to collaborate on IoT technology, policy, and industry topics. The Internet of Things Council will drive IoT innovation and adoption in Chicago and throughout the Midwest, establishing the city and the region as an epicenter for this new wave of technology.

Strengthen Research Connections

(Initiative 26)

The City of Chicago will join forces with the academic and business communities to establish UI LABS, enact research-friendly policies, and hold forums designed to feature Chicago as a major research center in order to draw the best and brightest to the city and increase commercialization opportunities.

UI LABS

UI LABS is a new, shared-research and commercialization organization focused on creating partnerships between industry and universities to create new technologies and businesses. UI LABS works to meet the ever-evolving national and international needs for innovative products, systems, and services, and the development and manufacturing techniques that underlie these offerings.

UI LABS and partners are focused on bridging technology and manufacturing, and in spring 2014, received a $70 million grant from the U.S. Department of Defense to establish the Digital Manufacturing and Design Innovation Institute as part of the National Network for Manufacturing Innovation. The proposal involved top research universities, led by the University of Illinois and Northwestern University; large companies, including Boeing, Caterpillar, GE, Microsoft, Rolls-Royce, and hundreds of small- and mid-sized manufacturing and technology companies.

In March 2015, UI Labs announced its second program, focusing on smart city technologies, which will develop and test urban infrastructure solutions in Chicago that will lead to transformative improvements that can be replicated in cities across the world. The UI LABS Cities Program will address challenges to the built environment and produce solutions that can be commercialized in four key areas: energy management; physical infrastructure; water and sanitation systems; and transportation and logistics systems.

Center for Smart Grid Applications, Research and Technology

In September 2014, Chicago's Galvin Center for Electricity at Illinois Institute of Technology launched a new research facility, the Center for Smart Grid Applications, Research and Technology (CSMART), supported by partners including ComEd and Silver Spring Networks. Among its initiatives, CSMART will test smart streetlights, microgrids, and distributed solar technologies in Chicago to advance development in these key areas worldwide.

The Smart Street Lights pilot program will reduce the City's operating, maintenance, and energy costs by up to 75 percent by using LED lights that are controlled by a smart grid network. The software will help staff work more efficiently by providing remote access, automatic outage detection, and the ability to schedule lighting.

Plenario

As more government data becomes increasingly available online, and governments increasingly turn to advanced analytics to enhance operations, officials and researchers need more advanced applications to find data-driven solutions to the complex issues faced by municipalities.

This fall, the University of Chicago's Urban Center for Computation and Data released Plenario, a new platform for accessing, combining, downloading, and visualizing data sets across different levels of government. Plenario brings together a universe of information from a variety of resources into one place and offers a user-friendly interface to cities, researchers, developers, and journalists to access data. By taking care of burdensome technical issues, the platform enables users to focus on developing solutions to problems instead of spending significant time and resources to identify, gather, and align data first.

Plenario provides an important step in enabling Chicago's data ecosystem to create data-driven tools that help improve our city, and components of this system will be leveraged to build the City's SmartData Predictive Analytics Platform.

Business-Friendly Environment

(Initiative 27)

The City of Chicago will review current business-related requirements and processes, updating them, where appropriate, in order to further foster an environment in which businesses can flourish and grow.

Small Business Center Website and Site Selector

In January 2014, the City launched two online tools to help small business owners access critical information and services. The revamped Small Business Center website is now available in English and Spanish and serves as a one-stop shop for entrepreneurs and business owners, offering user-friendly information, materials, and guidance for starting and growing a small business in Chicago. The second online tool, completed in conjunction with World Business Chicago, is a new and improved Site Selector to help small businesses search for commercial sites available for lease or sale. Both sites were developed in cooperation with Mayor Emanuel's Innovation Delivery Team and following consultations with local small businesses and the City's Small Business Advisory Council.

GET Connected IT Ambassadors

Funded through the City's Department of Business Affairs and Consumer Protection, Chatham Business Association's new Get Connected IT Ambassadors program develops the computer-literacy skills of young adults and trains them to assist small businesses with technology needs.

The IT Ambassadors receive training in email marketing, social media marketing (including Facebook, Twitter, and Instagram), and website development. The Ambassadors spend four weeks directly assisting small business owners and receive financial stipends for their work. Upon completion of the Get Connected IT Ambassadors training program, Ambassadors receive a certificate validating their skill set.

In 2013, 24 students completed the IT Ambassadors training program. Ambassadors introduced new online tools to 75 businesses and worked one-on-one with 15 businesses. In 2014, CBA recruited four Chief IT Ambassadors to work with businesses and train youth Ambassadors. This past August, CBA presented certificates to 11 youth IT Ambassadors, who are currently working one-on-one with an additional 15 businesses.

Smart Grid Technology

Chicago residents are among the first electricity customers in Illinois to receive smart meters in homes and businesses as part of an accelerated rollout of Smart Grid technology. By 2018, ComEd will install more than 1.3 million smart meters to accelerate $170 million in customer savings. To date, nearly 300,000 smart meters have been installed, providing residents and businesses with real-time access to their electricity usage information so they can save money and resources by making better decisions about how and when to use electricity.

In 2014, the City received an Illinois Science and Energy Innovation Foundation grant to educate residents on how to use the newly installed smart meters to improve the energy efficiency of their homes and businesses.

Solar Energy Technology

In conjunction with the Environmental Law and Policy Center and West Monroe Partners, the City launched the Chicago Solar Express in October 2013. The Chicago Solar Express reduces wait times for small solar installations from 30 days to one day, cuts application fees by 25 percent, and provides an online one-stop shop to guide applicants through the permitting process. Improvements in zoning policy and processes and the fee reductions have resulted in savings of $2,000 to $4,000 for small installation projects, with even higher savings for larger installations.

In 2014, the City launched a community-wide solar bulk-purchase program. Backed by a grant from the World Wildlife Fund, the program provided a 25 percent discount off the average market installation cost through the end of September 2014. The City exceeded its original registration goal of 750 participants, with a total of 2,131 sign-ups, and signed contracts to install nearly 500 kW of solar power.

Expand City Procurement Opportunities for Small-sized Companies

This summer, DoIT will release a Request for Qualifications for start-up and small-sized companies to join a new pool of pre-qualified vendors eligible for future City procurement opportunities. Companies who are deemed qualified will be placed into a pool and receive access to City contract opportunities in the areas of software application development and data analytics.

To further decrease the barriers facing smaller-sized companies in competing for City business, the City has modernized its insurance requirements to allow for pooled insurance plans. Start-ups that are members of an incubator, such as 1871, or smaller companies that come together for a group insurance plan, may now meet the City's insurance requirements as a group. Insurance requirements were identified as a barrier to conducting business with the City in a series of listening sessions conducted over the past year with these companies.

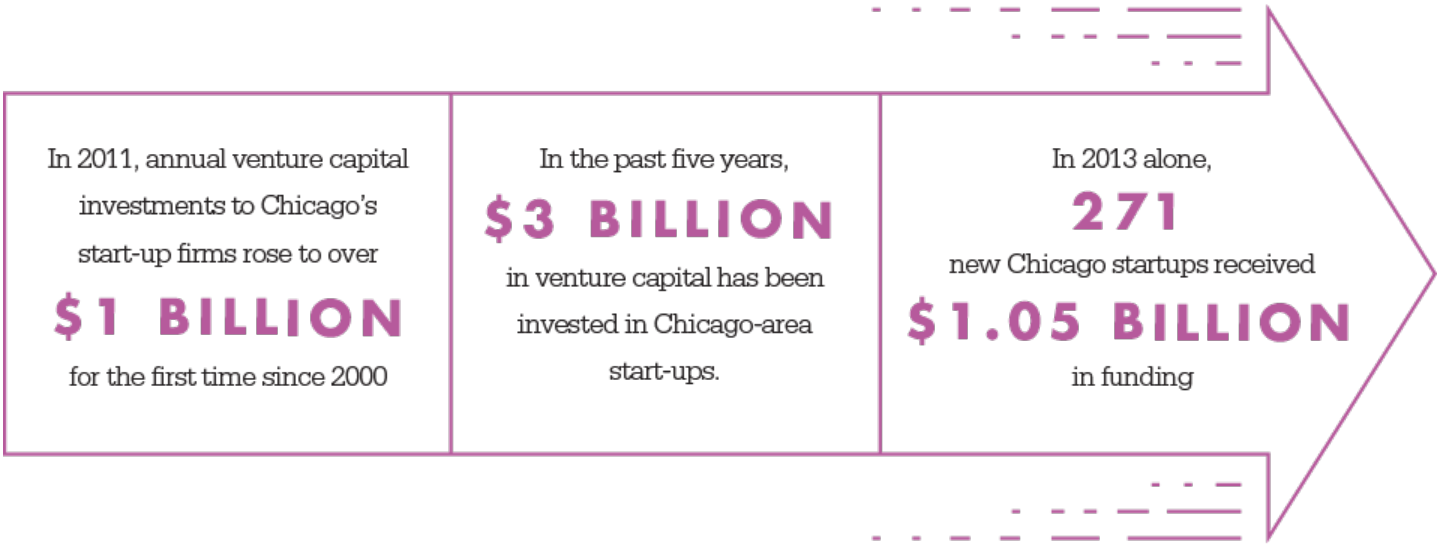
Increase Venture Capital

(Initiative 28)

To help attract funding to Chicago-based start-ups, World Business Chicago and business leaders will work to attract more venture capital firms to Chicago and provide support to existing firms as they reach out to venture capital firms worldwide.

Chicago Venture Summit

On October 14 and 15, 2014, the Chicago Venture Summit hosted the most influential venture capitalists in the country to build relationships with the Midwest's most promising technology companies. The featured companies were all IT-related and had secured a minimum of $1 million in venture capital prior to the conference. The Summit provided investors with substantial one-on-one access to high-potential Chicago start-ups, as well as exclusive access to Midwest-based LPs and members of Chicago's Fortune 500 leadership. The Summit brought together over 400 attendees, with representation from 71 national venture capital firms and 61 Illinois-based venture capital firms. The summit will be permanent moving forward and the program expanded upon by providing businesses with increased access to venture capitalists through additional pitch days throughout the year where businesses can sell investors on their companies.



LETTER FROM THE CIO

Chicago is not the only city striving to use technology to become more efficient and effective, or in a word…smarter. However, the progress we are making is putting Chicago at the forefront of the nation. Our accomplishments to-date on the Chicago Tech Plan highlight movement on all fronts – from government performance to education to job creation – across the city in each of our neighborhoods.

What is most exciting about this early progress is the broad ecosystem of partners that eagerly assumed responsibility for successfully implementing the City's first-ever Tech Plan. This ecosystem is a unique group of individuals and organizations that believe technology will not only change the future of Chicago, but must be embraced to ensure that Chicago remains a national and global leader in all areas. This ecosystem includes civic volunteers that offer their technical skills and time to tackle community challenges; start-ups; non-profits; philanthropies; universities; and large corporations that bring their talents to bear through partnership with the City. New collaborations are forming that bring together partners who have never sat at the same table to focus on the development of cutting-edge research to address our toughest challenges. These exciting relationships are improving everyday life in Chicago through technology innovation.

The commitment of this ecosystem and the unique focus on achieving citywide innovation through technology is turning Chicago into a responsive city. A responsive city is a Chicago that uses technology to support the goals of all of its residents and business, whatever those goals may be today and however they may grow and change tomorrow.

In late 2013, we began the important work outlined in this plan and the Chicago tech ecosystem stepped up to deliver meaningful progress across all its strategies. We are off to great start meeting the goals of the Chicago Tech Plan. But, we still have more to do, which will continue to require the efforts of many. Together, we are making Chicago a truly responsive city, driven by technology, to meet the needs of our neighborhoods and exceed the expectations of the world. I look forward to continuing to work with you to see this plan through and make Chicago a national and global leader in technology innovation.

Brenna Berman
Chief Information Officer and Commissioner, Department of Innovation & Technology

PARTNERS

The notable progress made over the last year is the result of many strong public-private partnerships amongst government, business, academia, nonprofits, and philanthropy organizations. This list will no doubt continue to grow as individuals and organizations continue to respond to Mayor Emanuel's call to make Chicago the premier technology destination in the country.

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