

**“PAPERLESS GOVERNMENT”:
Maximizing the Transformative
Power of Technology**

Bill Green
Councilman-at-Large
Room 599
City Hall

**Released September 2007
Revised April 2009**

INTRODUCTION

Today, Philadelphia faces one of the worst fiscal crises in its history. In the fall of 2008, the Nutter Administration projected a shortfall of over \$1 billion in the City's five-year plan. With the continued decline of the worldwide economy, it is likely that the \$1 billion deficit will continue to grow.

The City of Philadelphia is legally mandated to adopt and implement a balanced budget. In other words, unlike the federal government, the City cannot simply run a deficit during economic downturns. Currently, the FY09 budget is short by \$108 million. In order to close this gap, the Administration has announced that basic city services, such as libraries, fire companies, snow removal and swimming pools will be slashed.

The essential duty of a local government is to protect the welfare and safety of its citizens and to provide those citizens with basic, street-level city services. Before the economic crisis hit, many of the departments targeted for cuts were already underfunded and underperforming. Now, the City of Philadelphia will attempt to balance the budget on the backs of our already burdened citizens by further reducing or eliminating these programs or services.

There is no magic bullet to solve the \$1 billion problem. We cannot simply tax our way out of this crisis or hope, despite the fact that the nation's economy continues to recess at an alarming rate, that new business will come to the city bringing much needed revenue.

In the past, fiscal crisis management has consisted of the same cuts to services – cuts designed to keep the city afloat until the crisis has passed. Cuts designed, not to ensure the city's long term fiscal stability and success, but rather designed to ensure fiscal solvency until next year's budget season.

This unprecedented fiscal crisis provides Philadelphia with a unique opportunity to abandon traditional fiscal crisis management tactics and examine ways to truly transform government operations. We have an opportunity to reduce the cost of our government and experience improved city services, not reduced service levels. However, in order to achieve this change, the City must embrace and incorporate technology into every department.

While the private sector has used technology to improve work processes and lower operating costs for years, Philadelphia has strategically underinvested in technology. Despite the widespread availability of computers over the last twenty years, Philadelphia city government is still largely run with paper forms.

The management of Philadelphia is not data centric and as a result we often make poor choices with unintended consequences. The following suggested reforms will help us make better choices with our limited resources and annually save the City a projected **\$214 to \$340 million** without cutting any city services, but instead, improving them. This is a step in the right direction and will give us desperately needed fiscal breathing room. Furthermore, many of the proposals in this paper will have significant benefits for the City and its residents in ways that are not easily quantifiable, such as providing better city services to attract new businesses and residents.

Many of the proposals in this paper have been successfully adopted by other cities and in major corporations; any delay in implementing them here in Philadelphia will result in a continued waste of tax-payer dollars that could be dedicated to hiring more police or making badly needed infrastructure upgrades. The time to act is now and the opportunity for real reform is here. Philadelphia – the nation’s first great city – can fulfill *National Geographic’s* prediction of becoming the next great city. We need only to summon the political will to make the necessary reforms and create a municipal government of which we can truly be proud.

ROOM FOR IMPROVEMENT

Philadelphians are not getting the government that they deserve. The citizens of Philadelphia have come to equate long lines, confusing paperwork and delays with municipal services. A sweeping change to the culture of service in City Hall is long overdue. Technological advances have provided Philadelphia with the opportunity to achieve marked improvements in the way it serves its citizenry. The question is not whether the City can afford to rely more heavily on available technology; the question is how can the City afford *not* to incorporate this technology into daily operations.

By embracing available technology, the City will reap achieve gains in the following three areas:

1. Annual Cost Savings (estimates range from \$214 to \$340 million)
2. Increased Productivity Amongst City Employees; and,
3. Increase in Municipal Efficiencies.

Currently, Philadelphia’s municipal government spends more than \$14M annually on paper and paper infrastructure.¹ From printing and storage to postage and disposal, the cost of every sheet of paper is multiplied over and over again. According to the Solid Waste Management Coordinating Board, every dollar spent on paper can be tied to between \$13 and \$31 dollars spent on secondary,

¹ Analysis of Class 210, Class 320, Class 325, and Class 410 spending in the Mayor’s Budget Detail for FY 2008

paper-related costs.² It is our estimate that Philadelphia's savings would be at the higher end of that range. By implementing a Paperless Government program, the City can expect to see savings in the millions of dollars.

While failing to utilize the technology at our disposal is costing the City millions of dollars a year, as evidenced above, our current use of technology is neither efficient nor cost effective.

Rather than having a centralized information technology (IT) department to coordinate the City's IT needs, the City's aging IT infrastructure is a patchwork of programs and departments. In its May 2003 *Information Technology Strategic Plan*, the City of Philadelphia identified systemic inefficiencies that drive up the cost of maintaining and upgrading the City's aging information technology (IT) infrastructure, including:

- Fragmented IT infrastructure results in costly procurement and management processes.
- Duplicative core business application functionality leads to expensive and inefficient business processes.
- Lack of standardized IT infrastructure drives up support costs, increases IT complexity, and impacts the ability to better serve citizens through e-Government solutions.

While the City has implemented some IT solutions, bureaucratic silos have limited costs savings and service improvements. For example, the poor results of Department of Social Services Cross Agency Response for Effective Services (DSS CARES) could be attributed to the lack of a clear mandate to phase in a completely paperless system of client data sharing/management amongst relevant City agencies. By way of further example,

- The Philadelphia Police Department (PPD) is an extraordinarily complex bureaucracy that uses multiple IT systems. Its twenty district operation offices are equipped with different servers – many of which are not interoperable – and, therefore, can impede the transfer of electronic data and communications. Additionally, the PPD's Crime Analysis and Mapping Unit continues to be dependent on paper-based district reports for data, which is then inputted into the PPD geographic information system that maps trends for COMPSTAT, a crime analysis and police management process introduced to the PPD in 1998

² Solid Waste Management Coordinating Board, "Office Paper Reduction Demonstration Project" <http://www.swmcb.org/files/OfficePaperReport.pdf>

- The Philadelphia Department of Public Health's (PDPH) Ambulatory Health Services provides over 324,000 visits to approximately 91,000 City residents on an annual basis. Additionally, the Philadelphia Prison System houses approximately 9,000 inmates, many of whom suffer from medical problems; this population accounts for approximately 110,000 medical encounters per year.

PDPH has been proactive in putting together a cross-departmental steering committee to guide the Philadelphia Electronic Medical Record (EMR) Initiative. The objective is the implementation of an EMR solution focused on converting paper-based processes for patient charting, prescribing medication, lab testing, etc. EMR will support the health care services delivered by the City's eight health centers, the Philadelphia Prison System, and the Philadelphia Nursing Home and Riverview Assisted Living Facility.

While an effort has been made to update certain departments' technological requirements, other departments have seen little to no improvement despite the existence of basic and simple technological solutions to longstanding problems. For example, the Department of Licenses and Inspections (L&I) issues approximately 35,000 permits and 110,000 licenses annually. Approximately 70% (24,500) of those permits and 80% (88,000) licenses issued are of a routine nature. The application and approval processes for routine permits and licenses can be automated, including the use of online e-commerce technology. L&I has already begun an automated process of limited scope.

Almost every Philadelphia citizen has a horror story of traveling to City Hall or the Municipal Services Building, waiting in line, filling out form after form, in an attempt to do basic business with the City. Applying for a license or grant, establishing a business, undertaking a development project, or adding to a home – all activities involving the City, are made longer, more expensive, and more difficult by our current service paradigm. All of these activities, and most others that require permission from the City, increase the value of real property and our tax base. We need to make it easier to create jobs and grow property values. Expanding the pie quickly and efficiently gives us the resources to focus on our service priorities, such as education, public safety, and infrastructure. Providing a “paperless government” to the citizenry will help accomplish those goals.

“PAPERLESS CITY GOVERNMENT” PROGRAM

On June 30, 1975 *Business Week* predicted the development of the “Paperless Office.”³ They envisioned a technology driven environment where information would be transferred digitally and instantaneously. This vision was more than a techie’s fantasy; the vision of the “Paperless Office” (or, for us, the “Paperless City Government”) was driven by a desire for efficiency and effectiveness – Philadelphia needs both.

The goal of achieving a “Paperless Government” includes the creation and implementation of the following programs:

- Reduction of the City’s paper-based transactions
- Creation of a 311 Call Line and CitiStat System
- Creation of Public Service Benchmarks
- Using Technology to Bring Government to the Neighborhoods
- Creation of a Paperless Government Team to work with a Centralized Information Technology Department

Reducing the Number of Paper-Based Transactions

Through fits and starts, companies and governments alike have pursued elements of a “Paperless Office”, but none have achieved it. According to the National Office Paper Recycling Project, a typical government office employee produces 1.13 pounds of paper each day.⁴ We are literally throwing away valuable tax-payer dollars – dollars that should be invested in police officers to keep our neighborhoods safe, economic development packages to attract jobs, and infrastructure upgrades to improve services

Moreover, almost every City employee, from police officer to social worker, is faced with the daily prospect of filling out some form of physical paperwork. The Paperless City Government seeks to enhance the jobs of city employees. City employees should be asked to be innovative and find creative solutions to common challenges, but we fill their time with pushing paper and processing forms. The paperless system will greatly reduce the number of people needed for data entry-like tasks, reallocating them to more substantive and productive work.

³ "The Office of the Future" in *Business Week*, no. 2387, 30 June 1975, pp 48-70.

⁴ "Environmental Factsheet", Environmental Protection Agency, <http://www.p2pays.org/ref/24/23818.pdf>

Some transactions, though, are not easily amenable to computer automation. Sometimes, but not often, face-to-face interactions with paper forms are the most efficient and effective way to deliver city services. The Paperless City Government's purpose is not any kind of wholesale elimination of service representatives. Representatives will be available to help citizens at kiosks and to sit-down with them. A Paperless City Government will respect the varying complexity of services that citizens request.

In shifting employee's focus from paperwork, the result will be a better use of city resources, fewer mistakes, and faster services. According to the Environmental Protection Agency, organizations can save between one and five dollars, on a per use basis, for every document that is made paperless. In addition, organizations can expect a 50% drop in error rates and a 40% drop in total transaction time.

I envision a "Paperless City Government" that:

- Enables every citizen and employee to conduct all city business online.
- Places manned and unmanned city-service kiosks, like banks place ATM's, throughout the city.
- Uses a tracking system like UPS and FedEx use so that the progress of requests can be easily monitored by citizens and management.
- Transforms the role of city workers from pushing paper and processing forms to implementing solutions and empowering citizens.

Governments and businesses alike have already begun the process and can act as models:

- In New York City, a proposal for Electronic Procurement estimated \$186M in annual savings. On a per transaction basis, New York would save \$75 dollars.⁵
- More than 3 million customers participated in Verizon's online Paperless Billing Service in 2005, which reduced administrative costs by \$3.7M and saved \$5.4M in paper processing and printing costs.⁶

⁵ Jake Lynn, "Council Committees Explore A Paperless City Contract Process" Press Release, October 28 2002, http://www.nycouncil.info/pdf_files/newswire/eprocurement2.pdf

⁶ WasteWise 2006 annual report, <http://www.epa.gov/epaoswer/non-hw/reduce/wstewise/pubs/report06.pdf>

- The Walt Disney Company has saved \$1.9M since 2005 alone, primarily through the company's Electronic Pay Stub Initiative, which gives employees the option to receive pay stub advisory notices online.⁷

Use of Paper in Philadelphia Government

My City Council office requested that each city department provide information regarding the number of different paper forms that each department processes, as well as the number of each form processed annually. The numbers are staggering.

For example, the Water Revenue Bureau uses 28,000 time sheets and 6,000 overtime forms each month. This amounts to 408,000 sheets of paper a year to track the hours their employees work. Each of these 408,000 pieces of paper must be manually entered into a computer.

How much are these paper time sheets costing us? Let's assume that it is one person's job to deal with these 400,000 time sheets. When you consider benefits, that person is costing the City approximately \$40,000 to \$50,000 each year. Then there is the cost of producing the sheets. If that cost is one cent a sheet, that is another \$4,000. Then these sheets have to be stored. They are going to take up a few file cabinets. The City stores many of its documents in office space in its Center City office buildings. As a result, the City squanders prime real estate to for document storage. On top of that, the City is paying to heat and cool the storage space – costing thousands of dollars a year. When real estate and production costs are added in, these time sheets are conservatively costing the City over \$60,000 a year, and that does not include other secondary costs, such as when an employee has to go through volumes of file cabinets to retrieve a time sheet from a few years ago. And when a time sheet is misfiled, an employee could easily spend days going through literally millions of time sheets looking for the one they need.

The City could easily eliminate timesheets by simply giving employees electronic swipe cards to clock their time in and out, or have employees fill out an electronic time sheet on a computer.

Time sheets are just one example from one department in a City with 53 operating departments. It is one form out of thousands of forms.

* * *

⁷ *Ibid.*

Paperless Checks in Philadelphia and Pennsylvania

Both the City Controller and Division of Technology have estimated that Philadelphia can save over **\$420,000 annually** if all employees and pensioners receive their payroll checks via direct deposit, as well as have their direct deposit statements be distributed electronically.

Between City employees and pensioners, there are approximately 65,000 Philadelphians who receive regular payments from the City. Of those payments, approximately 80% are received via direct deposit, while the remaining 20% are received via a traditional paper check. Persons enrolled in direct deposit receive a paper statement confirming the automatic deposit.

The primary costs from paper checks and deposit statements stem from: paper, postage, printing, labor and transactions fees. The transaction fee for a paper check is \$1.10 compared to \$0.35 for direct deposit.

(Note: The annual paper costs for the payroll process in Philadelphia are approximately \$14,000. The secondary costs that result from the use of paper in this operation are nearly \$420,000, or 30 times the paper costs.)

The use of electronic checks can extend to the way Philadelphia receives money from the Commonwealth of Pennsylvania.

Each year, the Commonwealth sends the City of Philadelphia more than \$250 million in the form of paper checks, delivered via U.S. mail. The funds range from grants for fire and rescue operations to Fairmount Park projects and DHS reimbursements.

As a result of this transmittal method, an estimated \$1 million dollars is lost annually due to un-cashed, lost, and unclaimed checks. Further, because it takes up to a month for the City to cash checks from the Commonwealth, the City loses up to \$1 million dollars a year in interest that would have accrued if the checks were deposited immediately after disbursement.

The Commonwealth's Department of Treasury has a program called "Invest" that facilitates the electronic movement of funds to municipal government. Instead of mailing checks, the Commonwealth could place funds for the City into an interest-bearing Invest account. When the City is ready to receive the funds, it would merely transfer them from the Invest account into its bank account. Invest accounts are free to set up and there are no fees for maintaining them.

Moving to an Invest account also would eliminate the possibility of checks being lost in the mail.

Most importantly, use of an Invest account would ensure that the City would earn interest on these funds continually until the money is spent.

An example of lost revenue from potential accrued interest:

- On 7/16/07, the Commonwealth issued the City \$16.4 million in checks for the Police Department.
- Twenty-three (23) days passed between when the checks were issued and when they were deposited by the City.
- At that time, the interest rate on an Invest account was 5.17%.
- Had those checks been in an Invest account during the three-week period, the City could have generated \$54,171 in interest – enough to pay a police officer’s salary.

Estimated annual savings of using Invest: \$2 million.

* * *

Electronic Procurement in Philadelphia

The Procurement Department mails approximately 5,000 bid announcements per year to vendors. Emailing bid announcements or posting them on the web would save \$2,500 - \$5,000 annually.

To further facilitate electronic procurement, a Charter change would need to be made to allow for electronic submission/review of competitive, sealed bids. This would result in numerous efficiency gains.

Electronic submission of departmental reports on vendor performance would yield efficiency gains and allow for easier and better review of past performance data when considering new bids.

Initial estimated annual savings of electronic procurement: \$100,000

* * *

Utilize the Existing Citywide Wireless Network

Philadelphia is home to the largest municipal wireless network in the United States (owned by Network Acquisition Company).

The network has many potential applications that can: reduce the amount of paper our employees use, improve government efficiency and cut costs.

The most obvious benefit is that the network will allow our workers in the field to replace their paper forms with wireless PDAs. For instance, instead of a License and Inspection inspector using a paper form to report violations, they could fill out an electronic form on a PDA. Once the electronic form is completed, the data would be transmitted over the wireless network back to a server at the L&I office and entered into the City's computer system without any data entry ever occurring.

Other cities have experienced significant savings using wireless networks in this manner:

- Public Safety
 - Emergency response 24% faster (Milpitas, CA)
 - Officers spend 20% more time in field (Granbury, TX)
 - 25% savings in officer overtime for events (Savannah, GA)
- Licensing and Inspection
 - 9,300 hours of staff time saved annually (Oklahoma City, OK)
 - Inspection information available an average of 22 hours faster (Oklahoma City, OK)
- Parking Enforcement
 - \$100,000 savings per square mile per year (Houston, TX)
- Water and Gas Meter Reading
 - Savings of \$1.5 million over 5 years (Corpus Christi, TX)

An example of the amount of data entry that paper forms used in the field create can be seen in the Police Department. The police respond to over 90,000 false burglar alarm activations a year. We know that there were over 90,000 because police officers filled out a form for each one of these activations, which was then data entered. This is just one form in one department. In the Police Department alone, almost any kind of response to an emergency service request results in paperwork. Electronic forms would allow the Police Department – and other departments – to move staff from data entering documents to directly serving citizens out in the field.

About Philadelphia's Network

Unlike most, if not all, third-party wireless networks, NAC's network in Philadelphia can be used to safely and securely extend City networks out to field employees and field assets directly without passing through the Internet. Moreover, because the build-cost was previously absorbed, it is generally the lowest cost solution where it has been deployed

Most other cities exploring these possibilities would be faces with the cost of building the network to support municipal initiatives, but this is not the case in Philadelphia.

Without new build costs, the City can immediately begin to achieve the cost-savings and efficiency that other cities have.

* * *

The long term fiscal impact of a Paperless City Government is one of savings. Letter mailing software, for example, can cut the cost of mailing an individual letter in half. More importantly, it can reduce the average letter prep time of 8 minutes to just 2 minutes.

There are three primary areas of savings that stem from going paperless:

1. Direct and Secondary Paper Costs: A 50% cut in direct paper (of the \$14 million spent annually) and secondary paper related costs, which is achievable in a few years, will generate roughly \$98 to \$224 million in savings annually (\$7 million direct paper cost + \$91 to \$217 million secondary costs).⁸
2. Personnel Savings: The city spends roughly \$2 billion on personnel fees. Once the paperless system is fully operational throughout the city, a highly modest 2% productivity gain among city employees, which is also rapidly achievable, will result in an annual savings close to \$40 million per year.⁹
3. Citizen Time Savings: Reducing or eliminating the need for visits to City Hall or the MSB, automatically filling out fields for different departments with relevant information on clear, completed forms, will lead to productivity increases for businesses and free time for citizens, thereby growing our tax base and improving our quality of life.

Making Philadelphia a “Paperless City Government” will save the City annually an estimated \$138 to \$264 million. Again, the question is not whether the City can afford to make this transition; it is whether the City can afford *not* to make this transition.

Implement of a 311 Call Line and CityStat System

⁸ Based on the Solid Waste Management Coordinating Board, “Office Paper Reduction Demonstration Project” <http://www.swmcb.org/files/OfficePaperReport.pdf> which found that every dollar spent on paper can be tied to between 13 and 31 dollars spent on secondary, paper-related costs.

⁹ Projections based on the average personnel related costs of civil service employees.

Estimated Annual Savings: \$76 million

311 call centers and CitiStat systems are valuable because they bring efficiency and accountability, two hallmarks of a good business, to city government.

A 311 number is simply a non-emergency telephone number citizens use to request non-emergency services, such as report a broken street lamp, a pothole, a suspicious person, or make a noise complaint. Callers are given tracking numbers so that they can monitor the progress of their requests. 311 call centers have been proven to expedite the delivery of service requests as well as reduce the burden on 911 call centers.

CitiStat is a statistics-based government management system in Baltimore that utilizes computer pin mapping for issues ranging from drug treatment to trash collection. The system has proved highly effective at developing strategies to improve the efficiency and effectiveness of Baltimore city government, which have saved the City hundreds of millions of dollars.

311 call centers and CitiStat-like systems have been implemented, on varying levels, in cities such as Dallas, Chicago, and Washington D.C. New York City successfully used statistical performance analysis to overhaul their policing strategies and is now one of the safest cities in the nation (CitiStat was based on their system).

The Paperless City Government will work in tandem with a CitiStat system and 311 number. For instance, any license request made through the paperless system will be instantly recorded by CitiStat. Similarly, a request made through the 311 number for a street lamp to be repaired will be logged by the 311 operator using the Paperless City Government system. Thus, the proposed paperless system will feed a CitiStat system data in real time. And in both instances, both the City and the person who made the request will be able to track the progress of the request.

CitiStat, however, is much bigger than simply tracking how quickly potholes and street lamps get repaired. We will have metrics for how quickly the City provides all service requests, from building permits to zoning requests, and from graffiti abatement to sign repair. By recording service calls, allowing citizens to track their license requests, and allowing the City to publish departmental performance data, the CitiStat system will improve service and create accountability for department heads and employees.

Fiscal Impact of CitiStat and 311

Estimates for the implementation of a CitiStat and 311 systems in Philadelphia are: \$5M dollars as initial costs and \$4M dollars as annual operating costs. Every city that has implemented one of these systems has saved money in the long run. Baltimore estimates that it has saved \$350M as a result of CitiStat related reforms since its implementation in 2000.¹⁰ New York City, Buffalo, Chicago, and others have also saved millions of dollars. A conservative 2% savings, General Fund-wide, estimate from CitiStat would generate \$76M annually. Imagine what Philadelphia could have done with \$76M per year since 2000.

The non-fiscal impact will be complete transparency in government, tracking whose desk each request 'sits on,' sealing all cracks through which requests once fell, and giving errant requests no place to hide.

Create Public Service Benchmarks

It is not enough to use CitiStat to simply track the effectiveness of the City government. Rather, we must set public service benchmarks and strive to continuously improve upon these benchmarks. Using CitiStat, the City will be able to estimate response times and set business and citizen expectations, thereby improving planning and increasing productivity in the entire economy. Transparency and predictability of government increase investment, and grows the economy. These will be goals of improving services ranging from pothole repair to blight abatement, and from street sign maintenance to License and Inspection service calls. Among the published benchmarks will be:

- Service Timelines so that citizens know how long each service typically takes.
- Number of required visits, if any, so that citizens know how much time must be committed.
- Aggregate fees and costs so that citizens know what kind of investment must be made.
- Measures by program, department, and geographic region so that we all know by whom and where services are performed well and in the most efficient way.
- Citizen satisfaction surveys for online service requests sent after services are performed, and with follow up calls from 311 operator personnel to allow Council and the administration the ability to change processes when citizens are not happy.

¹⁰ Teresita Perez and Reece Rushing, "The CitiStat Model" Center for American Progress, April 2007, http://www.americanprogress.org/issues/2007/04/pdf/citistat_report.pdf

Bring Government to the Neighborhoods through Technology

Providing greater public access and input to the legislative process is among the most repeated campaign promises every election year. And it continues to come up year-after-year, decade-after-decade, because citizens have yet to feel properly included.

While the internet has allowed us to greatly increase the availability of information, more so than many people are probably aware, we must push for an expanded dissemination of information. We can begin this by creating a centralized website that provides a calendar of all public meetings, whether of city departments or commissions or of the alphabet soup of quasi-governmental organizations, with agendas, and transcripts of previous meetings. Neighborhood associations will be able to sign up for email alerts regarding zoning variance requests or whatever information interests them by zip code or block. Citizens, too, will be able to sign up for email alerts. We have promised to bring transparency back to City government. The first step in fulfilling that promise is providing the citizenry with the basic information about its government.

Create a Centralized Information Technology Department

Technology is not synonymous with efficiency or savings. The problems observed and proposed solutions addressed above require careful analysis, planning, implementation and continuous oversight. The heart of this ambitious plan would be an expanded role for the Chief Information Officer as the head of a Centralized Information Technology Department (CIT). The CIT must have the capacity to optimize, coordinate and deploy City IT resources to support effective delivery of public services. Furthermore, City Council, the Mayor and Cabinet members must provide legislative, executive, legal, procurement, administrative, fiscal and performance oversight to this Department.

A steadfast commitment from the City's executive team is imperative in leading the transformation to a strong central IT function that works collaboratively with Departmental IT organizations. We must focus the City's IT investments in those areas of greatest return and while at the same time working to reduce duplicate or redundant IT initiatives.

Stage 1

- **Develop an Action Team of Key Players**

The first critical step in the successful implementation of a Paperless City Government Program is the creation of a strong CIT team headed by the City's Chief Information Officer. When developing this team, we must remember that technology, in and of itself, is not the goal of this program. Rather, technology is merely the means to the end -- the end being cost savings, efficiency, productivity and a better-served citizenry. With that in mind, the CIT team should include experts in the field of technology, as well as efficiency and work-flow experts.

- **Audit the City's IT Infrastructure and Implement Strategic Sourcing**

Once a CIT team is developed, a baseline audit must be conducted to determine the multiple software applications (and multiple licenses for the same products) currently being used by City departments and agencies which can be clustered into four communities of practice – social services (including human services and health care), municipal services, finance and executive management, and public safety.

Upon completion of the audit, the CIT team would negotiate savings (estimated to be tens of millions per year) that can be realized through strategic sourcing. This would include aggregation under which master licenses could be purchased for specific software products, or shifting to one vendor for each type of software (e.g., databases) through centralized procurement. The consolidation of costly IT operations and infrastructure management will yield savings while strengthening the technology foundation of the City.

Moreover, an enterprise focus on core City applications, when coupled with process re-engineering, increases worker productivity and allows valuable City staff to be released from mundane administrative tasks and re-focused on higher value, customer service activities.

- **Identify and Measure Waste Reductions**

Additionally, the CIT team must identify and measure waste reductions to establish baseline data for setting goals and measuring progress. A priority would be the implementation of zero-cost paper reduction steps, such as working with departments

to distribute all internal newsletters and advisories electronically, implementing double-sided printing requirements and conducting document intensive processes electronically. Achieving early savings, at little to no cost to the City, would provide funding for continuing the paperless program into its next stage.

By targeting the activities that consume the most amount of paper, the City can focus on “hotspots” that have the greatest potential for reduction and cost savings. Conversely, the CIT must identify those areas where introducing the paperless system would complicate the delivery of services and result in less efficiency or increased cost.

- **Obtain the Support and ‘Buy-in’ of Department Heads**

Changes to government business will always require the support and oversight of top level management to remind employees of the new policy. Specifically, Departmental Commissioners, their top deputies and senior staff must be strong advocates within their organizations and across City departments regarding the benefits of paperless processes.

- **Educate Employees and Promote the Paperless Government Program**

The success of the Paperless Government program is dependent on the cooperation of City employees. In addition to working with Department heads and managers, the CIT team would educate City employees regarding the program and its associated benefits.

- **Use Immediate Paper-Related Savings to Fund Expansion of Paperless Government Program**

The initial reforms of the Paperless Task Force will yield immediate paper related savings for the next fiscal year. The CIT team will be empowered to use those savings as funding for purchasing automating equipment, hire consultants who specialize in designing and implementing paperless systems for large governments and corporations (who can also train city staff on how to maintain and develop our system), and eventually purchasing digital service kiosks.

Stage 2:

Building on the successes and associated cost-savings achieved during Stage 1, the CIT team would work to implement the following programs:

- **Mandate Further Implementation of Paperless Processes**

Mandate that paperless processes be implemented by all relevant City agencies. Leadership on the part of the Mayor, Chief Information Officer, Managing Director, City Solicitor, Departmental Commissioners, and City Council will be essential to garnering the support and cooperation of the City unions and State agencies.

Building on the successes achieved in Stage 1, we should strive to ensure that all forms filled out by city employees are paperless and easy to use.

- **Create Integrated Medical Record System Database and Patient Management System**

Convert paper-based medical record systems to a single platform, integrated database and patient management system. Complement the software standardization for electronic medical records with comprehensive marketing to and training of current and new employees, especially line staff, in using technology to facilitate work processes and better serve patients. Perform quantitative and qualitative evaluations to verify cost savings and service improvements.

- **Expand Software Standardization City-wide**

Roll out software standardization to other communities of practice (in addition to social services, which encompasses human services and health care) including municipal services, finance and executive management, and public safety. The goal is to free City employees from mundane administrative tasks and re-focus their energy on higher value, customer service activities.

- **Create Citizen-Friendly Web-Based Portals**

As the citizens of Philadelphia become more dependent on the internet for information, we must make the design and promotion of web-based portals for conducting business with the City a priority. A citizen should have access to a user friendly website that is written in plain and simple language. Ideally, these web-based portals should permit a citizen to answer a few 'check box' questions and result in the system automatically identifying which

forms are necessary and to which agencies the forms should be directed.

To achieve this goal of a user-friendly web portal, we must avoid and eliminate confusing and redundant questions or non-responsive results. We should work towards the creation of a dynamic service tool that consolidates and fills out forms based on individual service requests and that automatically directs these forms to the appropriate departments.

- **Creation of Services Kiosks**

In addition to the creation of user-friendly web-based portals, we should aim for the implementation of a system of manned and unmanned city service kiosks, which can be placed throughout the City so that Philadelphians can do city business without traveling to City Hall or the Municipal Services Building.

- **Meet All Security and Legal Requirements**

The CIT team must ensure that all legal requirements for electronically storing and disseminating data are met. Moreover, the team must make certain that the highest standards of security and verification are met in order to prevent hacking and fraud.

Stage 3

Efficiency is not a static process and technology is constantly improving. Successful implementation of these programs does not mark the end of project. The team must monitor program progress, provide technical assistance and troubleshoot any problems. Moreover, periodic updates of technologies and best practices are necessary to determine where additional improvements can be accomplished.

Conclusion

As seen in cities across the country, municipalities that incorporate technology into standard operating practice have seen a dramatic reduction in related operating costs, as well as a citizenry that is better served and better informed. Philadelphia has the potential to realize many of those gains through the use of technology. In order to maximize its gains and minimize potential inefficiencies, the City must create a Centralized Information Technology Department to implement a plan of action targeting the areas in which the City can achieve the greatest gains, while at the same time garnering the support and cooperation of the city departments.

Centralizing the City's information technology service department will result in greater costs savings, as well aid with the removal of any roadblocks standing in the way of inter-departmental cooperation and information exchange. One of the stated goals of the current administration is to return accountability and transparency to City Hall.