

IBM's Smarter Cities Challenge

St. Louis

Report





Contents

3	1. Acknowledgments
5	2. Executive summary
7	3. Introduction
7	A. IBM's vision for Smarter Cities
8	B. The Smarter Cities Challenge
8	C. Context and objectives
9	D. Approach taken by the team
11	4. Overall findings and themes
11	A. Discovery/observations
12	B. Areas for improvement
13	C. Recommendations – overall ecosystem
18	D. Recommendations – Mayor
23	5. Police Department
23	A. Discovery/observations
23	B. Areas for improvement
24	C. Recommendations
29	6. Circuit Attorney
29	A. Discovery/observations
29	B. Areas for improvement
31	C. Recommendations
32	7. Courts
32	A. Discovery/observations
32	B. Areas for improvement
33	C. Recommendations
35	8. Probation and parole
35	A. Discovery/observations
35	B. Areas for improvement
36	C. Recommendations
37	9. Cost considerations
39	10. Long-term recommendations
39	A. Preventing youth crime and recidivism through education
44	B. Neighborhood/Ward Community Grant Investment Framework
47	C. Economic development
49	D. HOPE St. Louis
50	E. Whole cost model
51	11. Conclusion
53	12. Appendix
53	A. Key performance indicators (KPI)
59	B. Additional resources
60	C. Customer case studies

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2. Executive summary

Introduction

The City of St. Louis is one of 24 cities to earn a grant from IBM as part of that company's philanthropic efforts to build a Smarter Planet™. IBM's Smarter Cities™ Challenge aims to contribute to the improvement of high-potential cities around the world.

During a three-week period in March 2011, a team of six IBM Executives worked in the City of St. Louis to deliver their recommendations on public safety to Mayor Francis G. Slay and a wide range of stakeholders.

Challenge: improving public safety

In recent years, St. Louis has been labeled the “most dangerous city in America”, despite an overall downward trend in crime rates. This perception has harmed the City's image, its ability to retain families and its prospects for economic development. We were told Mayor Francis G. Slay's main concerns were safe neighborhoods, the provision of an improved quality of life and better education for St. Louis' citizens. Specifically, the Mayor asked the IBM team to develop a set of recommendations that he and his extended team could implement in order to ensure the right information getting to the right people in the public safety extended team. This would enable better decision-making and have a positive influence on crime rates in the City.

Defining the public safety ecosystem

During the engagement, the IBM team defined the ‘public safety ecosystem’ as the communal reach and interaction of those participants in the public safety arena: Mayor, Board of Aldermen, Metropolitan Police Department, Circuit Attorney, Circuit Clerk, Circuit Judges, Sheriff, Corrections, Probation and Parole. Due to a unique institutional structure, the St. Louis public safety community includes many autonomous actors: the Circuit Attorney, Circuit Clerk and Sheriff are elected; the Circuit Court Judges and St. Louis Board of Police Commissioners are appointed by the Governor of Missouri. As a result, all efforts to improve public safety have to be coordinated across the entire team through a collaborative approach.

Overall themes

The long-term solution for public safety is to provide sufficient education, jobs and economic opportunity for all members of a community. As public safety is connected to virtually every City issue from housing and education to economic development and the social safety net, so all these systems must be aligned if we are to prevent crime rather than react to it. The City must renew its focus on using data to track, analyze and predict outcomes across the range of City systems. While these problems cannot be solved in three weeks, the following are a set of suggestions that should help to move the needle in the right direction. If addressed, both in the core public safety team and throughout the wider community, they will provide the City with the right foundation for a deeper understanding of the issues and the means to measure the success of actions taken – something not possible under current systems. Using data in such a way will enable the City to begin to tackle some of the underlying issues with greater certainty and precision.

Unified view of the individual: Each individual team currently maintains separate systems for tracking information about offenders. Providing a unified view of the individual across the public safety system would ensure that each actor has the information they need to drive better outcomes.

Performance management framework: To provide accountability for public safety outcomes, the extended team must align all programs, budgets and metrics to improve operational and financial performance and drive down costs. In addition, each member of the team should look to peer organizations and networks around the country to identify and draw upon best-practices to improve existing programs.

Process integration: The public safety system must coordinate processes across organizational borders to prevent crime and recidivism effectively.

Asset management: Physical and IT assets are crucial to efforts to achieve better public safety outcomes and drive economic benefits.

Top-priority recommendations

We believe that the following are the initial set of recommendations the City should consider and act upon in order to build momentum quickly and begin cultural change. Some suggestions focus on how to begin sharing information more effectively, while others concentrate on cost reduction to fund the next wave of actions. One of the first steps should be to get all the key people in one room, identify the top-priority recommendations and secure the wholesale commitment of staff with support from each individual team.

System-wide: In order to achieve a unified view of the individual, the extended team must work to establish a common language as information crosses institutional boundaries and improve data flow in individual agencies and across the system.

Mayor: The Mayor should fill the open Chief Operating Officer position and appoint a Chief Performance Officer to drive accountability throughout his organization and coordinate efforts to agree upon a common public safety mission and goals.

Police Department: To facilitate a culture of accountability, the Police Department should establish a performance-based appraisal system that includes patrol metrics and adherence to operating procedures. Opportunities to share capital assets with other public safety agencies should be extended to achieve cost savings.

Circuit Attorney: The Circuit Attorney should drive the creation of an offender coversheet based on common criteria for identifying top-priority offenders and should support broader strategic intelligence collaboration across the system.

Circuit Courts: Extending current trials of electronic monitoring for low-risk offenders and video arraignments will cut costs and improve effectiveness. Current paper-based records and processes should be replaced by digital systems.

Parole and probation: Scorecards for measuring client outcomes and the performance of probation and parole officers should improve accountability and effectiveness.

Funding: To identify funding sources or cost-savings for new initiatives, all actors should explore federal grants, shared risk agreements with private sector partners, operational changes and reallocation of existing funding. Under a conservative estimate, investments in electronic monitoring, organizational streamlining and rehabilitative services could yield savings of \$350-\$950 thousand in year 1, and annual savings of \$1.5-\$5 million thereafter.

“Everyone that participated, all the different pieces of government and private-sector partners that have an impact on public safety and the law enforcement process, really came to the table willing to help. Everyone is interested in doing a better job and a more effective job, and that was something that came out of this which really pleased me.”

—Mayor Francis G. Slay

Conclusion

Despite its unique institutional structure, The City of St. Louis faces much the same challenges as other cities. These have implemented similar solutions with best practices that can and should be replicated within the extended team. St. Louis is well positioned to improve accountability and outcomes across the public safety community.

3. Introduction

A. IBM's vision for Smarter Cities

By 2050, cities will be home to more than half the world's population, will wield more economic power and have access to more advanced technological capabilities than ever before.

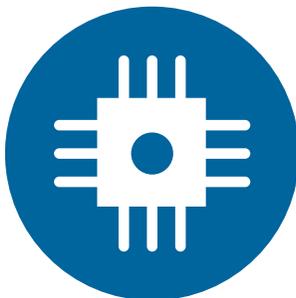
Simultaneously, cities will struggle with a wide range of challenges and threats to sustainability in those core support and governance systems – transport, water, energy, communications, healthcare and social services. These governance issues are not however unique to cities. All over the globe, federal, state and local governments as well as private sector companies are looking at innovative ways to reduce the problems of siloed and disconnected organizations.

Meanwhile, trillions of digital devices, connected through the Internet, are producing a vast stream of data. All this information – from the flow of markets to the pulse of societies – can at last be turned into knowledge because we now have the computational power and advanced analytics to make sense of it. With this knowledge cities can reduce costs, cut waste and improve the efficiency, productivity and quality of life for their citizens. While these are mammoth challenges in a time of economic crisis and increased demand for services, we also have ample opportunities for the development of innovative solutions.

In November 2008, IBM began a conversation about how the planet is becoming “smarter”, meaning that intelligence is being infused into the systems and processes that make the world work – into things no one would recognize as computers: cars, appliances, roadways, power grids, clothes, even natural systems such as agriculture and waterways. By creating more instrumented, interconnected and intelligent systems, citizens and policymakers can harvest new trends and insights from data, providing the basis for more informed decisions.

Since cities grapple on a daily basis with the interaction of water, transportation, energy, public safety and many other systems, IBM is committed to a vision of Smarter Cities as a vital component of building a Smarter Planet. A Smarter City uses technology to transform its core systems and optimize finite resources. At the highest levels of maturity, a Smarter City is a knowledge-based system that provides real-time insights to stakeholders as well as enabling decision-makers to manage the city's subsystems proactively – figure 1.1. Effective information management is at the heart of this capability while integration and analytics are the key enablers.

Intelligence is being infused into the way the world works.



Instrumented

We can measure, sense and see the condition of practically everything.



Interconnected

People, systems and objects can communicate and interact with each other in entirely new ways.



Intelligent

We can analyze and derive insight from large and diverse sources of information, to predict and respond better to change.

Figure 1.1

A Smarter City uses technology to transform its core systems and optimize finite resources

B. The Smarter Cities Challenge

As IBM aligns its philanthropic efforts with the goal of building a Smarter Planet, we realize that city leaders around the world face increasing economic and societal pressure to deliver new solutions rapidly, the more so given the increased demand for services. To address this, IBM Corporate Citizenship has launched the Smarter Cities Challenge to help 100 cities around the world become smarter through grants of IBM talent and technology.

During March 2011, a team of six IBMers worked in the City of St. Louis to deliver submissions on key issues for Mayor Slay and his senior leadership team. This report provides their analysis of the causes of crime and accompanying recommendations for public safety in the City of St. Louis.

C. Context and objectives

Cities need to rethink their approach. The need is more urgent than ever because of the biggest global economic crisis since the Great Depression. A Smarter City is one that takes the urgency of the current economic crisis and its downward pressure on budgets as the impetus to overcome resistance to change. It turns problems into opportunities – to reduce costs, improve services to communities and make our cities smarter. This new approach to community transformation calls for leaders to use technology to inform and connect people. The city is viewed as a set of interconnecting systems and this drives integrated solutions and services, focused on long-term city-wide outcomes. The key to success is integration across traditional silos – exploiting the available intelligence.

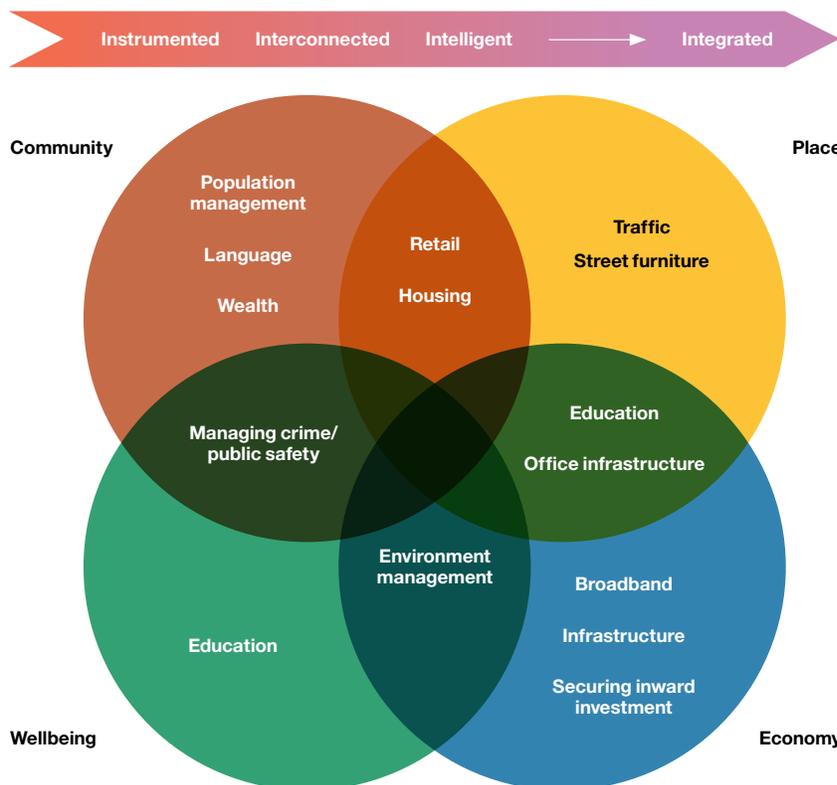


Figure 1.2
The Smarter Cities framework and overlapping themes

Public safety and public education are clearly interconnected. Establishing a comprehensive strategic plan to address these issues is fundamental to the future success of the City and the prosperity of the region. Whether it is through innovation in City public schools, engaging the public in crime prevention and education, analyzing community development strategic plans to increase post-secondary enrollment, the City and its surroundings must adapt in order to thrive in an ever increasing global economy. We hope that this strategic plan can lay the foundation for further cooperation amongst non-profit and governmental bodies in the region. For the area to prosper in the global economy, better cooperation is essential for improving services for constituents, boosting economic development and realizing increased efficiencies through synergies in government.

D. Approach taken by the team

The proposal for the City of St. Louis is broken into two main sections:

- The first addresses the issue of public safety and the criminal justice community
- The second looks more broadly at the community and the causes of crime and recidivism.

For each section we have drawn out the themes that span the entire community: our observations and recommendations at community level. We have then examined key players within that community and focused on observations and findings that are relevant to their role within the extended team. Lastly, we have looked at potential funding sources or models that could be applied in order to finance changes the Mayor and his team want to pursue.

In our approach to this project, IBM used an issue-based consulting method. This method relies heavily on interviews to develop a set of hypotheses and then conduct deeper research interviews to validate these hypotheses.

Overview of the five-stage consulting process

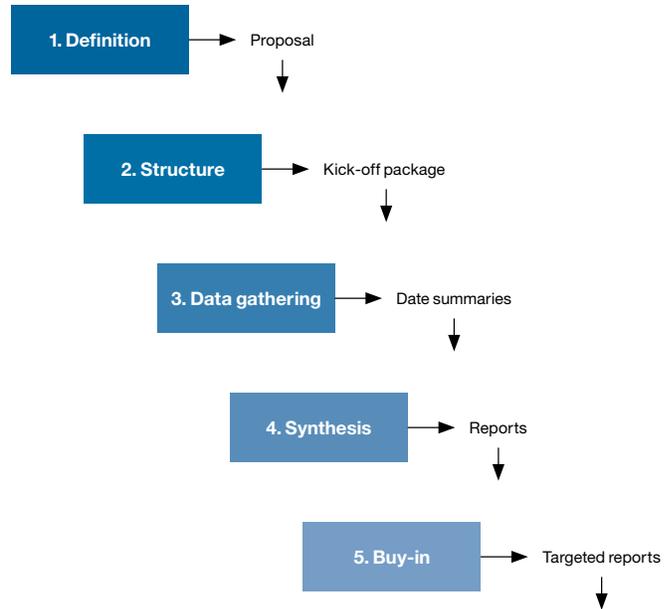


Figure 1.3
Issue-based consulting flow

Stressing the importance of safe neighborhoods and the provision of an improved quality of life for his citizens, Mayor Slay specifically asked the IBM team to examine how the City can target high risk criminals by providing the criminal justice extended team with the relevant information to allow the City to make better public safety decisions and drive better outcomes.

IBM approached the initial round of interviews with no assumptions and a standard set of questions regarding the respective agencies' operations and the areas where potential improvements could be made. We interviewed the top executives of the public safety agencies: the Police Department, the Circuit Attorney, the Clerk of the Court, Circuit Court Judges, Probation and Parole and the Department of Corrections. These organizations make up the city's public safety community.

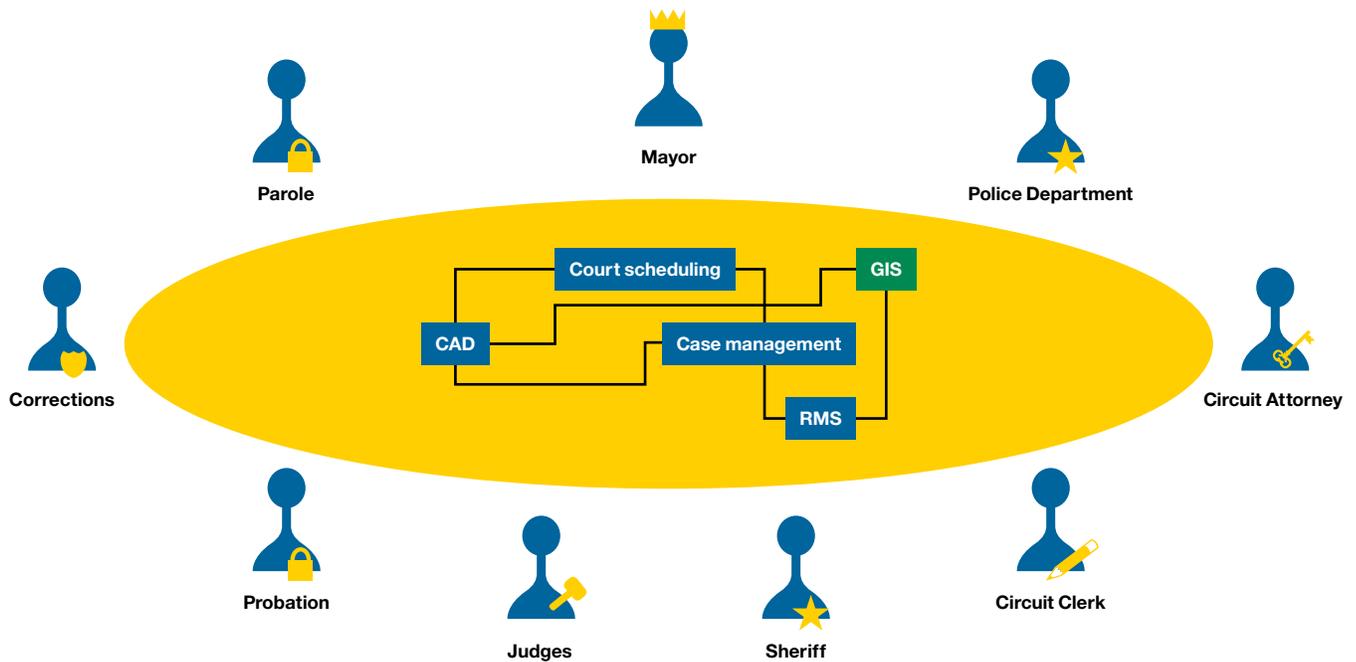


Figure 1.4
Key organizations making up the public sector extended team

A consistent set of themes has emerged from these interviews:

- Lack of a unified overview of the individual (i.e. a single, consistent view of the individual as they move through the public safety system).
- A performance management framework lacking metrics and clear accountability that would allow programs and outcomes to be assessed objectively and thereby improve operational and financial performance.
- Absence of a well integrated information-sharing process that spans all agencies; this has contributed to significant operational problems and costs within and between the agencies.

These themes have formed our series of hypotheses concerning the City's public safety problems and by extension, the recommendations that could be made to improve collective public safety operations and reduce overall costs.

Subsequent rounds of interviews gathered detailed information directly associated with our hypotheses so as to validate them. The IBM team looked at:

- How information is collected about individuals within each agency and how (or whether) it is shared
- The assessment methods applied to the performance of both personnel and processes and the metrics used
- What IT systems are in place, how they are employed and the quality of the information they provide.

This information was reviewed to obtain a clear view of the complete system, with each hypothesis tested against the findings. In each case we found information and stakeholder confirmation to support each of the three hypotheses. This has enabled the IBM team to develop recommendations that could be put into practice. The method, the findings and the recommendations are all presented in this report.

4. Overall findings and themes

A. Discovery/observations

Today municipal governments face a multitude of challenges in ensuring they deliver the highest quality of service at the highest value to their citizens. St. Louis is no exception.

Responsibility for city-wide accountability

As the City's top elected official, Mayor Slay is the public face of St. Louis. He is the head of government, regardless of state laws that restrict his control over some critical functions, especially within the public safety system.

In order to ensure the proper management and reporting of the extended team (however the scope is defined) it is important to have a small set of people with common objectives. As a team, they are responsible for:

- End-to-end processes that flow across the system
- Measurement and reporting of the efficiency of processes
- Understanding who is accountable for each step in the process and where the boundaries exist
- Driving collaboration across the community to ensure the smooth and efficient execution of the process.

In the diagram opposite we highlight three roles that, while not necessarily full-time within the organization, are critical in ensuring the correct management structure is in place to support the community. They can be performed by people with various responsibilities across the community but the key to success is that they have the community's permission and authority to implement changes, measure and track progress. They need the authority to apply approved sanctions when groups within the extended team do not meet their objectives, as well as the mechanisms to reward organizations that exceed their goals.

We will discuss the roles above in more detail in subsequent sections (for instance, Chief Performance Officer in the Mayoral section).

In our discussions with stakeholders both inside and outside the public safety extended team, it was the lack of meaningful accountability that was seen as a key factor in contributing to the perception of St. Louis as the "most dangerous city" in the United States.

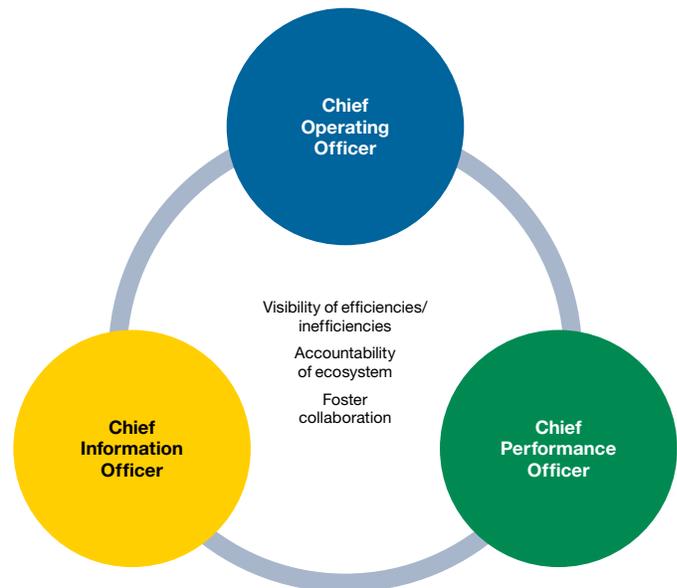


Figure 1.5

Management system for governance, accountability and collaboration

Accountability can only exist when the citizens of St. Louis feel that one individual is responsible for the overall public safety strategy for the City. The success or failure of this strategy can be determined by measuring and monitoring that individual's performance against given goals.

To have a strong, consistent focus on improved public safety outcomes, it is necessary to have a focal point for accountability; we believe that responsibility should rest with the Mayor's Office.

Increasing budget pressures

The global economic crisis has put serious strains on the finances of all governments, especially municipal governments. Tax revenues and other revenue streams have been impacted by lower tax collection, higher costs for services and a reduction in grant monies available to local governments. This has forced government leaders to make hard choices about which programs to fund and which to cut. We see this occurring in St. Louis as well, where the economy is already suffering in some wards, exacerbating an already challenging situation.

Grants – today a major source of funding for the City of St. Louis – have been reduced as new calls for austerity and fiscal responsibility emanate from Washington and Jefferson City. The loss of these grants puts additional strains on St. Louis and its ability to fund public safety programs.

As pressure around pension liability and contribution requirements increase, more citizens of St. Louis have found themselves dependent on City programs.

Fragmented span of influence

St. Louis is a city of divided government, especially within its public safety system. The St. Louis Metropolitan Police Department is a state-run organization, governed by an appointed Board of Police Commissioners. The Circuit Attorney and the Court Clerk are separately elected officials, beholden more to voters than to the City's executive branch. This type of divided government blurs lines of authority and areas of responsibility and can create an atmosphere of blame and recrimination when dealing with the City's public safety issue.

Despite tremendous efforts on the part of those individuals within the public safety system, these divisions have created a fragmented span of influence, and prevented a coordinated, effective and consistent approach when tackling public safety in the City. The lack of overall management and information-sharing has put high-risk offenders back on the streets, while incarcerating offenders who would normally be released back into the community to become productive members again.

B. Areas for improvement

As we evaluated the information gathered by numerous stakeholder interviews, five common issues clearly emerged around the initiatives for public safety:

1. Data quality

Data quality is an issue that continues to affect the City's ability to measure the overall impact of programs effectively, particularly within the public safety arena. Data quality issues between the different public safety organizations make it difficult to determine with confidence whether or not

programs and expenditures are effective. They also contribute to the culture of blame and finger-pointing which seems to permeate parts of the organization.

The lack of decision-quality information has also affected government leaders in St. Louis. The Mayor, department and agency chiefs have struggled to measure the performance of their programs. They do not understand the effect reduced budgets and an increased demand for services has, now and in the future. This has created a culture where transparency and accountability are lacking.

2. Efficiency gaps

Within the City government and the broader public safety establishment there are the following gaps:

- Multiple and disparate data sources
- Organizations that fail to communicate effectively
- Inconsistent policies
- Duplication of effort
- Unnecessary redundancy
- Siloed and disjointed levels of accountability.

These gaps in efficiency have made it difficult to obtain a true measure of performance and success at a City-wide level. When decision-makers operate within self-contained silos, their limited span of control results in the absence of a unified view of programs and budgets and ignorance as to how their decisions affect the larger City extended team.

3. Metrics and performance

The lack of consistent performance metrics across the public safety spectrum has contributed to the ongoing inability to form a comprehensive public safety strategy and road map. While many organizations measure their performance – the question is: are those metrics aligned to the overall City strategy to improve public safety? The answer is: not entirely.

Performance metrics must align under three broad areas: mission goals, operational requirements and financial objectives. Through these, the City can gain deeper insight into the effectiveness of public safety initiatives in preventing and reducing crime and recidivism.

The government under Mayor Slay has a number of strategic goals and objectives that must be measured in order to improve public safety and change the perception of the City as unsafe.

4. Accountability

In numerous interviews, officials in St. Louis have consistently cited lack of transparency and accountability as a major concern. This hampers the City's effectiveness in managing city-wide operations and creates a culture of blame and finger-pointing within the public safety extended team. This culture fosters distrust and animosity and if left unchecked, will only worsen.

As the City deals with studies claiming that St. Louis is the "most dangerous city in America" this lack of performance-based metrics contributes to this perception and the idea that there is an unaligned, uncoordinated strategy for public safety within St. Louis.

5. Common language

The City lacks a consistent, well-defined set of definitions and the necessary language when information is shared among the various stakeholders. This shortcoming affects how information moves through the public safety system of St. Louis.

C. Recommendations – overall ecosystem

CityForward: benchmarking performance in St. Louis

CityForward is a set of exploration authoring tools that give experts from academia, government and beyond the ability to illustrate ideas and trends and encourage discussion of their validity and impact. The objective of CityForward is to coordinate information about cities and communities in ways that lead to new perspectives. Insight gleaned from data analysis can force us to rethink the physical, commercial and governance structures that orchestrate life in cities.

Currently, City agencies work in silos with only limited cooperation or integration and no holistic view of the interdependency of city subsystems. There are few decision-supporting tools to enable the City to assess what it needs to do to become smarter, even though citizens expect to be involved in the setting of city priorities. The Mayor and his team want to promote data transparency and public engagement.

We recommend that the City of St. Louis works with those groups within city government and beyond who can provide it with data that is public, open, free, and city-focused. This data could then be loaded into a tool such as CityForward in order to understand the relationships and interdependencies within the City's public safety system. It could also allow the involvement of non-profit organizations, academia and community grass roots organizations.

We have included an example of visualization from CityForward to demonstrate the concept but the real value is in publicizing and encouraging experts from all parts of the community to create and share visualizations.

Culture shift on accountability

Because the City of St. Louis operates within a loosely aligned public safety system, it is critical that any recommendations first and foremost instill a culture of accountability. As we have stated earlier, lack of accountability was cited in nearly every interview. The conclusion both of the interviewees and the St. Louis Smarter Cities team is that any long-term, sustained success in fighting the perceptions and the realities of public safety in St. Louis must begin with a shift to a broader culture of accountability.

This is not to say that accountability does not already exist among many of the public safety stakeholders with whom we talked. Most, if not all of the organizations believe strongly in a culture of accountability. However, that accountability is in silos – it starts and stops within the bounds of the specific stakeholder organization. This creates an extended team where common strategies, goals, and key performance metrics are similarly contained within silos.

The result is a loss of common purpose, of common language and metrics, a lack of fact-based decision-making and a tendency to push blame out to other parts of the team. This type of “accountability in silos” affects the team’s ability to drive any significant change or improve outcomes. We see this within the sphere of public safety in St. Louis.

We recommend that the Mayor’s Office be the owner of a unified process and culture of accountability. As stated earlier, the Mayor is the head of the city – citizens expect that accountability to begin and end with him. In order to create a new ethos, we recommend that the Mayor, working with the public safety extended team, develops a set of common public safety mission and goals and a method for creating a unified culture of accountability. All stakeholders should understand their roles and responsibilities in the process and would be given a forum to raise concerns or challenge decisions.

To do this, a unified view of the individual as they move through all phases of the public safety system has to be created, along with a system-wide performance management framework.

Unified view of the individual

When an individual moves through the public safety system, it is critical to have a unified view of that individual throughout each step of the process. This ensures that everyone within the system receives and shares information, creating a comprehensive record of all interactions. Not having that critical information can have a direct influence on how that individual is treated while moving through the system and whether or not the best decision is made on his or her behalf. The lack of a unified view has been cited by all stakeholders within the St. Louis public safety community as a significant gap that must be addressed.

Since a complete profile of the individual is required at every step of the public safety system, from arrest through to the final disposition of the case, an integrated view of the individual is fundamental. It guarantees that every stakeholder has the same line of sight into all relevant characteristics of the individual.

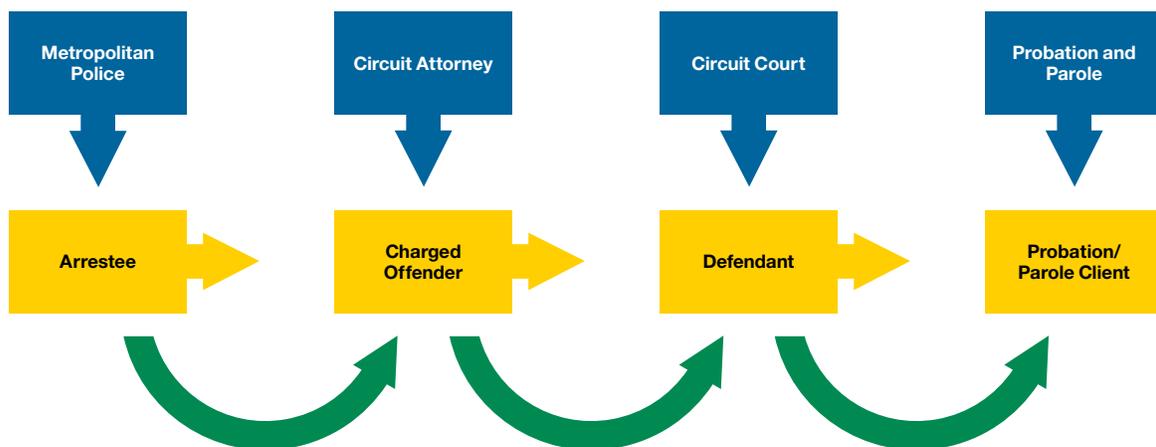


Figure 1.6
Organizations involved in the flow of information

Equally important is the manner in which data moves across the boundaries of the public sector system. Every ecosystem is a collection of natural organizations whose strategic objective is most often defined by the mission of those organizations. As different as these may be, commonality of purpose does exist and that commonality defines a broader goal. With public safety organizations, that broader aim must define how information moves between the different parts of the system.

In St. Louis, that commonality is obscured by silos that have arisen within the different parts of the extended team. These silos prevent the exchange of data across system boundaries and are responsible for a failure to produce a coherent analysis of the individual. It is essential that data and information exchange occurs seamlessly across the different functions so that a unified view of the individual is available to every decision-maker in the system.

It is clear to everyone we talked to that in order to meet the goals of the public safety ecosystems, St. Louis cannot continue to operate in the way it has done in the past. A culture of managing performance throughout the entire public safety extended team must be embraced and controlled at the Mayoral level.

Asset management

To manage assets and services effectively, municipal agencies need a solution that not only meets the needs of managers and users, but also fits their technology strategy. The ideal solution would provide a unified platform that could track and run the full spectrum of municipal assets and service providers. It would address compliance, accounting and asset-related challenges across multiple departments and integrate smoothly with key systems such as geographic information systems (GIS), asset monitoring and enterprise resource planning (ERP). An asset and service management application that meets these critical requirements would be able to streamline operations and improve management decision-making enterprise-wide, while fully supporting budget justification and asset accountability.

Evaluate integration for data and service orchestration

Municipal cloud

Much of the information technology world is adopting cloud computing. With cloud, hardware, software and data are moved from the client's site "into the cloud". A cloud operator can then serve many clients, reducing costs substantially through economies of scale and improving ease of use. Of course, the operator must protect clients' information properly – providing the privacy, security, reliability, access control etc. that clients expect. As these are being developed and proven, use of cloud is expanding.

A private cloud keeps the control of information with the client. It helps governments by improving software support and increasing visibility with service composition and analytics. Software-as-a-Service helps reduce capital costs, risk and IT management expenses. On-going improvements to cloud efficiency, security and reliability are particularly attractive for municipalities.

Cloud provides these benefits and more. For example, when services come from independent providers, clients must figure out how to link them properly. If a local government has one service to collect taxes and another for accounting, it must manually transfer tax collection data to the accounting application. The resulting overheads and errors can be a substantial burden.

Insight into city operations is based on data held by multiple applications. Classically, each application has structured information for its own purposes, making it difficult to create an integrated view. With cloud delivering the applications however, a reification of the municipality results. This integrated view permits analysis and visualization spanning application and departmental boundaries. The mechanisms that create and analyze the reification are used by many clients, making them affordable even for small governments. Furthermore the resulting assessments provide a standardized view of community operation, allowing best practices to be identified across multiple communities and departments. Cloud can eliminate overheads and errors and add value. It shares data between multiple services and turns applications into unified, client-specific sets.

As an example of the cloud model in public safety, we would recommend looking at a smart surveillance solution. Video surveillance provides the ability to analyze and identify potential public safety events/issues from closed circuit television (CCTV) footage. The cloud solution can monitor feeds from CCTV cameras and search for predefined events/issues thereby removing the need for constant human monitoring. By building a storage cloud, the upfront capital costs of servers, storage devices and other related services needed to build a city-owned and operated surveillance center are reduced.

The cloud surveillance solution can play back CCTV feeds to flow from point to point after an incident. In the case of a stolen car, the surveillance system can analyze footage from CCTV feed to CCTV feed to pinpoint the direction the car was driven. The cloud surveillance solution can alert the operator in real-time when a predefined event occurs. This can be displayed on a main screen and the event can be stored for trend analysis.

CCTV camera hardware and installations are becoming cheaper to install while the cost ownership of the human monitor is static or increasing in cost. Technology evolution in the CCTV space has centered on hardware rather than software when analyzing suspicious activities.

City leaders today manage incidents and view key performance indicators (KPIs) and reports through disparate systems. City-wide coordination and collaboration in the planning and execution of events including emergency operations is often lacking. Another key reason for implementing a cloud is thus to provide a “hosted” dashboard or Intelligent Operations Center, through which incident reporting and tracking, as well as situation awareness and reporting, can be viewed.

Real time collaboration and critical asset management are two other key City government areas that can benefit.

In keeping with our recommended KPI metrics, a cloud model can provide a city with executive, city operations and agency dashboards that include domain KPI reports with trends and analysis of event and domain data.

It can also provide an affordable centralized environment for planning, organizing, monitoring and continuously sharing information in response to changing conditions. Cloud economies reduce both capital expense and operating costs. They encourage service sharing and collaboration both within and between local government entities. A primary cause of slow service in government is the “hand-off” delay when response to service requests moves between departments. Smarter Cloud assures the correct information for operational control, short range planning and strategic management. By structuring data in a standard format, Smarter Cloud also provides the essential basis for sharing services and identifying operational best practices.

Establish common language as information crosses boundaries

The St. Louis public safety system must be a closed loop system for all information that moves across the stakeholders in the extended team. This can only be accomplished if a common language exists around types of crimes, types of offenders, etc. and is used to build the unified view of the individual. We believe this is the only way to get a complete profile of every individual who moves in and through the system.

Improve REJIS criminal reporting

REJIS contains a wealth of useful information on individuals that move through the public safety system. In order to ensure that all members of the extended team trust the data, we believe it essential for REJIS to enhance its criminal reporting. We feel it is critically important to upgrade and improve how REJIS shares information across the extended team and the other applications in use. In doing this, we feel REJIS can supply the critical information that identifies the top 20% offenders. Specifically, the offender report needs to be modified to give an accurate summary of convictions, arrests and other incidents so the data can be trusted by the Police Department and Circuit Attorney.

Establish coordinated set of extended team dashboards

Managing performance across the extended team is one of the foundations of our recommendations. We believe metrics and accountability will improve operational and financial performance by implementing a strategy of using dashboards for programs and budgets. It will also drive down costs across the system.

Automate processes across extended team

We have discovered numerous manual processes throughout the St. Louis public safety extended team. These manual processes are both a financial and operational drain on the city. We strongly believe that their elimination and consolidation together with the removal of paper reporting will improve the flow of accurate and timely information across the system. We also believe this change will have a significant impact on the City's financial performance.

Improve intra-department data flow

Communication within a department in the public safety system is one of the best ways of improving public safety. We have seen examples of outdated policies and limited access to information producing a failure of this kind of intra-department communication throughout the network. We believe that improving this information flow within departments is essential and recommend that every department in the system undertakes an audit of how information progresses, taking steps to improve information-sharing processes.

Improve inter-department data flow across system

Communication among different departments in the public safety system is another excellent way of improving public safety. One of our most useful sessions was when all members of the public safety extended team gathered in the Mayor's office. That session helped all extended team members understand the importance of data and information flows between departments. We recommend that those members meet every four to six weeks with the City CIO in the Mayor's office to review and discuss the issues around information flow and seek ways to streamline and improve that process.

Share and replicate best practices with cities at a national level

The National Network for Safe Communities (<http://www.nnscommunities.org/>) is a coalition of prominent city stakeholders concerned with the impact of crime and current crime policies on communities. Co-chaired by Professor David Kennedy and President Jeremy Travis of the John Jay College of Criminal Justice, the network supports its members by creating a national community of practice, raising the visibility of its members' work, offering technical support, recognizing and helping others learn from their innovations, supporting peer exchange and education and conducting research and evaluations.

Specifically, the Network focuses on two proven crime prevention strategies: a community-wide strategy to prevent homicide and serious violence together with efforts to eliminate overt drug markets. Pioneered in Boston Massachusetts, the homicide and serious violence prevention strategy brings together offenders, their families, law enforcement and criminal justice officials, service providers, street workers and community leaders, to set clear community standards against violence. It helps offenders leave the streets and establishes clear, predictable and meaningful consequences for groups whose members commit homicide and serious violence. First implemented in High Point, NC, the drug prevention strategy does the same with drug dealers to eliminate overt community drug markets, arrest and prosecute violent drug dealers, offer education to non-violent dealers, provide job placement and other assistance, setting out the same consequences for those who return to dealing. The City should consider working with this network and other jurisdictions to benchmark its efforts and draw upon best practices.

Increase use of state and federal information sources

There are a number of state and federal data sources that exist and can be used for public safety. We recommend that the St. Louis public safety team takes advantage of these data sources and uses the extensive information available to it to improve public safety outcomes.

D. Recommendations – Mayor

The Mayor of St. Louis, as the city’s highest elected official, must be the person responsible for achieving the goals and objectives of the City.

Establish a common public safety mission and goals

To drive the culture shift in accountability, the City must adopt a management framework around the strategic goals and objectives of the public safety extended team. That framework will drive the adoption, coordination and implementation of performance objectives by:

- Establishing one view of public sector programs and budgets
- Managing and reducing risk
- Improving operational efficiency
- Increasing transparency and accountability.

Designate a Chief Performance Officer

To meet the strategic objectives and to drive that culture of transparency and accountability, we recommend that Mayor Slay designate a city-wide Chief Performance Officer (CPO). The CPO will be responsible for managing and coordinating the measurement of all public safety activities. This will unify the extended team’s performance initiatives under one individual who will report back and recommend improvements to ensure the strategic goals of the mayor and the city are met.

In addition, we recommend that each stakeholder in the wider public safety extended team designate someone at staff level to liaise with the CPO to ensure coordination and inter-communication. The city’s Chief Performance Officer would be the de facto head and final arbiter of performance recommendations and actions.

In that role, the CPO would help establish the performance goals and metrics with all stakeholders in the extended team, recommend actions to be taken and work with the City’s Chief Operating Officer and Chief Information Officer to implement those goals and report on the progress and results. He or she would chair the Mayor’s PublicSafetyStat meetings where performance metrics are reviewed and action is taken.

The establishment of PublicSafetyStat meetings

We recommend the establishment of PublicSafetyStat meetings as a vehicle to review the progress of the public safety strategy and goals through analytics. PublicSafetyStat will coordinate and focus on these critical areas:

- Reviewing all performance metrics and results of public safety extended team
- Recommending changes to policy to improve outcome
- Managing the implementation of policy and operational changes.

The meetings will be launched in phases. Phase One will focus on the public safety extended team in the City of St. Louis and Phase Two will expand to include the public safety extended team in the St. Louis metropolitan area.

Meetings of PublicSafetyStat must include all relevant stakeholders throughout the entire extended team who have the authority to make decisions and adjust metrics when needed. They will take process and policy recommendations back to their leadership for decision and disposition.

	PublicSafetyStat working group	Departmental performance	Senior staff	Senior leadership
Weekly				
Bi-weekly	X			
Monthly		X		
Quarterly			X	
Semi-annually				X
Annually				

Benefits:

- Align institutional strategic goals and desired citizen satisfaction goals with better public safety outcomes.
- Integrate budgets with public safety performance objectives.
- Measure and manage performance for an efficient and effective use of all resources.
- Provide visibility and control of information across the organization.
- Increase quality of decisions by providing more accurate, timely access to information.
- Analyze and manage all program costs (direct and indirect) and reduce operational and IT costs by providing self-service analytics to users.

Unified management metric framework for extended team

Managing performance to reach the strategic objectives of the public safety extended team of St. Louis is critical to achieving a safer and vibrant St. Louis. This also fosters the culture of accountability.

Every member of the public safety community has a mission to define what overall strategic goals need to be managed and measured in order to achieve improved public safety.

Managing this mission is critical because it defines the actions and direction of the political leadership and determines the public safety outcomes delivered. It is vital that overall operational requirements like human capital and other resources are managed to optimize the use of all resources and deliver the best outcomes for the public safety mission. Overseeing the financial performance of the City in its totality is the key to understanding how the City funds and measures public safety programs, and to establishing whether or not those budgeted activities have achieved the desired outcomes.

Performance management is driven through analytics in four areas: business intelligence; advanced analytics; financial performance management; governance, risk and compliance.

Parts of the St. Louis public safety extended team are employing some of these analytic capabilities, but it is not a coordinated effort. PublicSafetyStat is the vehicle that pulls these disparate performance processes together into one, unified view. This will allow for consistent measurement to enable insight into performance, improve operational efficiency and increase transparency and accountability to drive better outcomes.

Performance management areas	
Business intelligence	Query, reporting, analysis, scorecards and dashboards to enable decision makers to find, analyze and share the information they need easily to improve decision making.
Advanced analytics	Data mining, predictive modeling, “what if” simulation, statistics and text analytics help identify meaningful patterns and correlations in data sets to predict future events and the attractiveness of various courses of action.
Financial performance management	Budgeting and planning, financial consolidation, financial scorecards and dashboards, financial analytics and related reporting capabilities to help simplify, structure, and automate dynamic and sustainable financial performance practices.
Governance, risk and compliance	Financial governance, financial and operational risk management and compliance capabilities to help manage and reduce risk, manage compliance requirements and financial governance measurement and reporting requirements.

Creation of a Public Safety Dashboard

We recommend that one of the first goals of the Chief Performance Officer should be the creation of a Public Safety Dashboard. The dashboard will unify the measurement of all activities that affect the goals and objectives of the public safety initiatives. It will reach across all organizations in the public safety extended team for a consolidated view of the outcomes in the system.

Components:

- Strategy maps define the key goals and objectives of a specific area in the system.
- Key performance indicators (KPIs) help measure and monitor whether or not the outcomes are being achieved.
- KPIs form the basis for mission, operational and financial planning that goes into uniting the organization's performance.

- Scorecards within the dashboard help define the measure, monitoring the performance of each strategic outcome's KPI with trend monitors that indicate whether or not the outcome is achieved.
- Programs, finances and operations are linked together for tighter program execution, streamlined operations and budget and cost management across the system.
- These measures help to isolate the factors impacting performance and determine what actions may be required to improve outcomes.
- Financial reporting for both internal and external financial governance and compliance requirements tied to the outcomes.

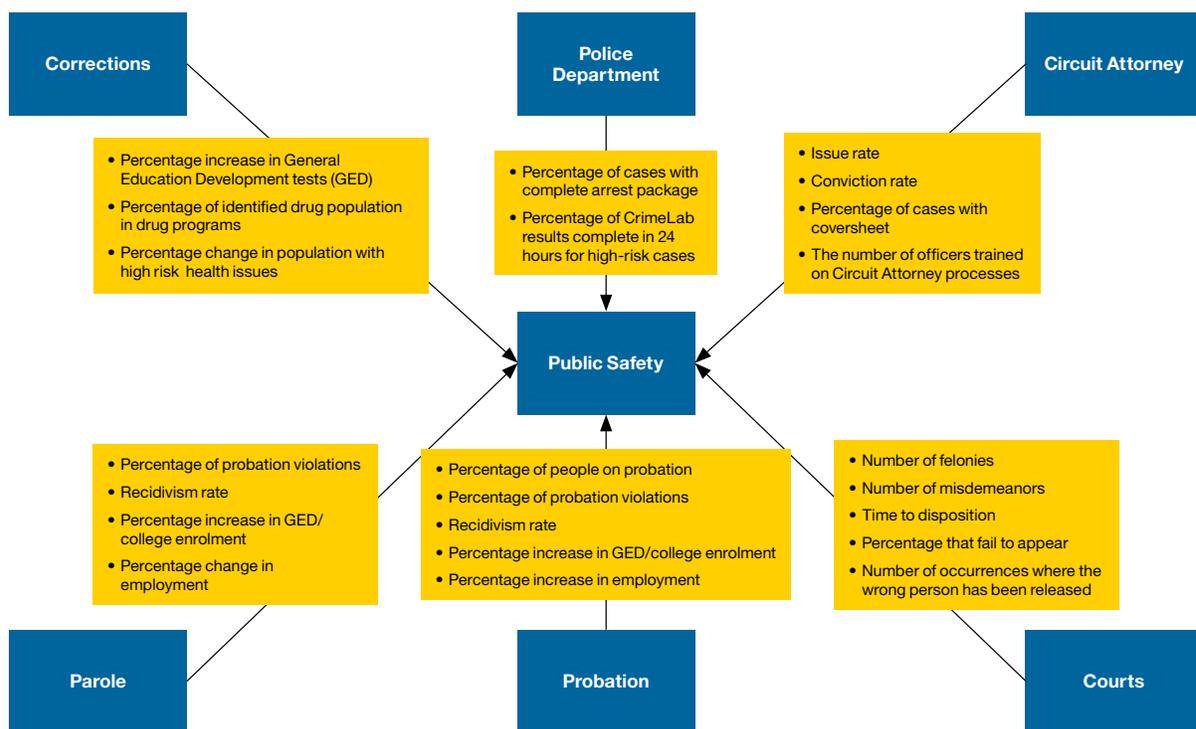


Figure 1.7
Flow of key performance indicators into the overall dashboard

Examples of KPIs for Police (See Appendix for complete list)

Police			
Enforce the law	Improve responsiveness	Create a secure city	Increase public awareness
Number of citations for non-criminal code offences	Percentage of calls answered in 30 seconds	Citizen safety survey	Number of hours of non-policing work in building community relations last 30 days
Total number of police/community interactions	Percentage of calls responded to within city guidelines	Violent crime (this week, last week, last year)	Number of citizens reached by public awareness campaigns last 30 days
Number of police/community interactions that were not a result of 911 call	Average response time to non-emergency calls (rolling seven days)	Non-violent crime (this week, last week, last year)	Number of public relations contacts with media
	Number of use of force complaints (rolling seven days, 30 days)	Number of arrests	Number of hours of paid non-policing work in building community relations last 30 days (e.g. security at parade paid by third-party)
	Number of hours on-duty uniformed officers are performing "off-beat" administrative work	Conviction rate	

Examples of KPIs for Courts

Courts			
Types of offenses	Service efficiency	Decision making	Operational efficiency
Number of felonies	Time to disposition	Percentage of cases change in disposition	Financial penalties payment rate
Number of misdemeanors	Clearance rate	Number of dip in events where wrong person is released from the custody	Court staff efficiency level
	Percentage of pending cases	Percentage of dip in events where wrong person is released from the custody	Percentage reduction in time taken to do criminal history background check
	Percentage of trial date certainty	Percentage dip in recidivism rate	Average case processing time
	Percentage of fail to appear		

Benefits:

Performance management systems can lead to the following outcomes:

- Improved performance and positive outcomes based on political mandates.
- Use of predictive analytics and what-if scenario planning to predict and forecast possible outcomes.
- A viable intervention strategy based on those models to keep outcomes, programs and spending on track.
- Institutional strategic goals aligned to desired citizen public safety satisfaction goals and better outcomes.
- Measurement and management of performance, efficient and effective in the use of all resources.
- Visibility and control of information across the extended team.
- Increased quality of decisions by providing more accurate, timely access to information.

Unified operational and financial process

Better management and use of existing or easily collected information removes blind spots that prevent the City of St. Louis making informed decisions and achieving the best outcomes. The City needs to be able to predict and act on information, empowering individuals throughout the organization with pervasive, predictive real-time analytics.

They can build on their ability to:

- Evolve from intuition and instinct to real-time, fact driven decision making.
- Build on “sense and respond”, rather than react to situations.
- Empower everyone at the point of impact to make the best decisions in the context of the current situation.

The result is rapid, informed and confident decisions and actions optimized across the organization. The Mayor's office is the single entity responsible for ensuring the City's financial and operational accountability and integrity.

To achieve unified and effective financial and operational management of the public safety extended team, we believe the Mayor's office must implement and control a performance-based budgeting framework, linking all members of the public safety team's financial and operational performance.

Building a collaborative, performance-based budgeting philosophy, requires the following steps to be taken:

- Draw up long-term plans based on the Mayor's Strategic Public Safety Plan.
- Break plans into annual budgets and then budget forecasts for each team within the City.
- Measure and report on both outcomes and budget expenditures on an ongoing basis at PublicSafetyStat meetings.
- Adjust spend to account for declining metrics in both outcomes and budgets.

“It's really important that decision makers and people who are on the front lines have equal access to information. We want people to be able to make smart decisions, and they need the data in a timely way to do so. So it's both the work process and the ability to have data – and information – flow through a process, but it's also making sure that people know how to be connected.”

—Robin Wahby – Deputy Chief of Staff

Benefits

- Improvement of the public safety budget performance with positive outcomes.
- Use of predictive analytics and what-if scenario planning to predict and forecast possible budget and program outcomes.
- A viable intervention strategy based on those models to keep outcomes, programs and spending on track.
- Redeploy financial and operational resources easily to meet objectives.
- Integrated budgets with performance objectives.
- Budget performance measured and managed for efficient and effective use of all resources.
- Increased quality of decisions by providing more accurate, timely access to budget information.

5. Police Department

A. Discovery/observations

The City of St. Louis has been labeled the most dangerous city in America for its size. The St. Louis Metropolitan Police Department (SLMPD) consists of 1,062 officers (including police probation officers) 304 officers at sergeant level and above, plus approximately 500 civilian employees (Public Safety Answering Point and other departments). Around 65% of the current police force is white, a higher ratio than that of the general population.

In the past year, the department and crime laboratory have been re-accredited. They have installed mobile ticketing devices in cars to speed both issuing and processing of traffic tickets. License Plate Readers (LPRs) have also been fitted on some cars to allow police to enforce wants and warrants as they drive down streets. A key addition has been the installation of in-car video to allow officers to capture video of suspects while allowing citizen supervision. This should reduce complaints to Internal Affairs. Overall, there has been a reported reduction in crime of 9.2% in 2010.

The current 2011 Priorities stated by Chief Isom are to:

- Acquire funding for newly purchased Headquarters building and increase security platforms at the current facilities. Bring all facilities into line with Department of Homeland Security (DHS) and bring emergency preparedness recommendations up to that of a large metro police department. (SLMPD is part of the area wide St. Louis Area Regional Response System (STARRS) program.)
- Acquire funding for improving firearms range to provide tactical training for local and federal agencies.
- Add new real time analysis center, officer Global Positioning System (GPS) program and gunshot location systems.
- Allow increased flexibility in Community Oriented Policing Services' (COPS) style grants to reduce retention requirements and financial impact. (Last year the department applied for and received Urban Areas Security Initiative (UASI) grants of around \$8.5M, Metropolitan Medical Response System (MMRS) grants totaling \$317K, Department of Justice Justice Assistance Grant (JAG) allocated at \$939K and COPs (earmark) of \$200K for in-car video hardware.)

B. Areas for improvement

1. Data quality

SLMPD has direct access to Missouri Uniform Law Enforcement System (MULES), Regional Justice Information Systems (REJIS), National Crime Information Center (NCIC) and I/LEADS databases. They have the ability to share information with Parole and Probation and get feeds from Corrections when a criminal has been released. Timely information on prisoner release from parole remains an issue due to heavy caseloads. This is compounded by time delay in getting information to the officers out in the field. There is a lack of a common data dictionary between various agencies. Not all offenses are mapped to the Uniform Crime Reporting (UCR) or NCIC data definitions. There is a need to go to multiple information systems, some of which are updated manually and less frequently than others. Some information, particularly call resolution or disposition of the call, is simply not captured. Rekeying of data gives rise to errors. Multiple system sign ons with their inherent delays lead to significant reductions in active patrol time because of administrative duties. We observed much cutting and pasting in the patrol car and at the district station. While in the patrol car during routine traffic stops, we noted delays in sign on, temperamental network connections due to the spotty nature of Verizon Wireless as well as delays of the REJIS system, all of which added to time taken in routine offense-processing.

2. Efficiency gaps

There are multiple part forms that need to be completed by officers and entered into systems. Many fields in these forms are identical. Some of the fields are automatically populated in various electronic systems, some are not. The arresting officer in a traffic stop has too many choices in his drop down menu on his Mobile Data Terminal. It is easier for him to key in the entire alpha numeric code, although more time consuming.

3. Metrics and performance

SLMPD has provided data on time to answer PSAP call, time to dispatch officer and time of arrival. The performance of the first two steps is very good. For the last step, the arrival on the scene, data is not complete or accurate since officers frequently do not or cannot call in arrival info. SLMPD keeps good stats on types of crimes (part 1 and part 2) by month, by demographic (race/gender/age) and by neighborhood.

4. Accountability

There are so many steps in the process that it is difficult to hold any one function or department to account. This leads to a natural lack of departmental responsibility. There is a real need to share accurate and complete data in good time, so that the whole is greater, in the end, than the sum of its parts.

5. Common language

There is a disconnect between the SLMPD's use of the Unified Crime Report and the standard UCR used at the state and federal level. Selecting the correct category when entering into electronic systems post arrest, can cause confusion. We were given Does Not Match Reports (DMR) which showed almost 250 disparities in one month between the I/LEADS UCR and the Crime Code UCR. This was due to coding nuances, differences between the offense to be prosecuted and the FBI requirements, software glitches and simple mis-titled reports by officers.

C. Recommendations

- Use information technology as a strategic asset. Develop both short-term and strategic roadmaps to upgrade or replace information systems, allowing for accurate, consistent and timely information. Minimize paper report forms and manual data entry. Multi-part forms are expensive and their elimination will result in substantial savings over and above savings achieved by automation.
- Improve process flow immediately on both intra and inter-department data. For example, improvement potential in number of steps involved from arrest to booking (intra department) and reducing steps from the police personnel to the Circuit Attorney (inter agency).
- Improve access and sharing of data so that acquisition of investigative or follow-up information is less cumbersome and labor intensive.
- Review and improve data sharing with state and federal systems as warranted. NCIC, MULES and NDEX are all great databases from which MPD can benefit if the interface and procedures are simplified.
- Align MPD leadership with patrol officers' goals. Specifically, get officers at sergeant level and above out into the streets more frequently. This should show the community that there really is a level of care and concern by MPD regarding safety in the streets.
- Utilize the Criminology Department at University of Missouri St. Louis as a "think tank" on improving public safety. Form a task force with the goal of delivering actionable process and information technology improvements.
- Increase officer involvement in community projects/ programs such as PALS (Police Athletic League). This will help build trust with the community and deter the "cycle of crime" experienced by most of the 28 wards.
- Adopt best practices of other metropolitan police departments who have adopted some of the suggestions above, Memphis, Richmond, NYC, Chicago, Los Angeles and Albuquerque.
- Implement the technology around social media – Twitter etc. into crime fighting portfolio. National agencies e.g. FBI are looking to use these tools to identify the crime perpetrators real time.
- Install GPS in all squad cars for officer safety. This also makes calling in when arriving at the scene a less arbitrary procedure and increases management's ability to confirm directed patrol assignments are being performed.

- Implement smart video surveillance with analytics in a comprehensive manner. In many cities, the well-planned use of smart video surveillance has been a major asset in reducing crime, improving public perceptions of safety and assisting police response to calls for service. Installing two or three cameras in a district does not achieve measurable results. It may only drive crime to another area. If cameras are not monitored and video is not stored and searchable, it is not useful. Being able to customize the “smart” cameras to display activity that MPD wants to monitor, say car break-ins, is one example. In certain situations, the use of high-definition camera technology which allows for positive identification either from facial recognition or the ability to positively identify scars, marks and tattoos, is also recommended.
 - Similarly, installation of video to capture booking of prisoners, holding cells, prisoner transport, investigative interrogations, crime scenes and evidence-handling provides a more complete and accurate record of Departmental actions associated with events, arrests and investigations. All video should be managed as a single asset and included in a comprehensive content management program. Having and using such a process not only results in major operational improvements but also drives reductions in costs, be they direct (less time spent searching and retrieving information and less paper) or indirect (reduced liability exposure for false allegations of misconduct, stronger audit trails for investigating misuse of Department information).
 - If the recommendation to use smart video is adopted, it is vital that a plan for the acquisition and use of the video technology is put in place prior to any purchases. Planning establishes standards and policies that can be used as benchmarks for acquiring and implementing video systems – to include integrating existing systems and video assets. Developing a plan, i.e. a technology roadmap, provides an understanding of the technology itself – its capabilities, total cost of ownership, etc. and the operational goals it is intended to support – what the video is intended to do. This knowledge and the resulting plan controls costs and reduces the risk of an unsatisfactory project outcome.
- Aggressively pursue federal grants to help fund new initiatives. Focus should be on competitive grants and grant research, development should begin ASAP. Many grants will be awarded in the late Spring and again in the Fall. Hiring a professional grant writer outside of the city might be worth looking into.
- It is an established maxim that “what gets measured gets done”. Metrics are necessary to measure success and the effectiveness of performance. Assignment of responsibility makes specific personnel accountable for the accomplishment of assigned activities. Without metrics, there is no meaningful accountability. Without accountability, personnel performance cannot be objectively appraised. Without an objective performance appraisal (and by extension, reward system) personnel are not motivated to excel. In such an environment an organization cannot perform to its best. If these conditions persist, they become endemic and therefore difficult to change. The St. Louis Metropolitan Police Department (SLMPD) is an example of an organization where this has occurred, for several reasons:
 - SLMPD does not have established metrics for measuring the efficiency or effectiveness of operations against identified crime and order maintenance problems.
 - There is no objective appraisal system for personnel.
 - The existing promotional process is not well designed to identify those candidates most likely to perform well as supervisors and leaders.

All the above need to be corrected if the culture at the SLMPD is to change and let it perform at its best. This is especially important as the Department prepares to operate with fewer personnel.
- The SLMPD collects crime statistics from field and arrest reports and is advised of the return of arrested persons and known recidivists to the community. The sharing and dissemination of information is cumbersome and has many gaps due to poorly integrated information systems and processes that are to a large extent paper-based. Despite these problems, the Department’s Crime Analysis Unit provides good summaries of crime activity and patterns to the

Districts. In the Districts, however, the information is not passed down efficiently and consistently to the line personnel nor used to design their directed patrol assignments (i.e. the problem which is given priority to each officer during their shift). There is no way to verify that officers are receiving the crime information that ensures the targeting of their enforcement efforts based on intelligence based/evidence based policing. Neither is there a method to establish that an officer has actually performed an assigned task other than their own statement that it has been done. Numbers are tracked, but in most cases there is no solid interpretation of any change that occurs. Thus changes in patterns do not lead to intelligent adaptation of operations. The establishment of key performance indicators and the ability to track them would correct this.

- The SLMPD does not have an appraisal process that assesses the performance of its personnel objectively. Establishing key performance indicators (KPIs) would provide objective metrics by which personnel performance could be assessed. An effective appraisal process has a forced distribution component that prevents assessment of those members performing satisfactorily who meet Departmental standards. Likewise, it forces the assessors to document their ratings, enforcing the key performance indicators and thus validating the process's effectiveness. Personnel that excel in accomplishing their assigned objectives can be rewarded whereas personnel that consistently fall short can be targeted for appropriate performance improvement actions or separation from the force, if they cannot perform effectively. The existence of objective standards and the consistent application of associated policies encourage excellence or, at the least, adequate performance. Personnel who know their performance is effectively monitored and that their appraisal depends on meeting or exceeding standards, will do what is necessary to avoid the consequences of failing to perform satisfactorily.

- The SLMPD does have a competitive promotional process but its emphasis is not on the identification of future supervisors and leaders. Personnel who are good at taking tests do well, irrespective of whether or not they will perform effectively as supervisors and leaders. Restructuring the process into an objective one can improve the Department in several ways:
 - Personnel are offered the opportunity to advance their careers by demonstrating their potential to perform the requirements of the next rank effectively in an objective process.
 - All personnel that compete refresh their knowledge of the training materials common to all ranks (e.g. law and regulations, general orders, etc.) and obtain an understanding of the responsibilities of the next rank through the study of the selected supervisor or management materials.
 - The Department is able to drive cultural change by establishing new standards of performance and promoting personnel that demonstrate the ability and willingness to support them.
- The existing promotional process hampers the Department's ability to change itself in several ways:
 - The examination process is placed above the candidate's work history and experience. Management input is limited to avoid seeming bias but observations by management over time are valuable indicators of an individual's ability and skills.
 - Once a rank is achieved an individual can only be removed with cause, and poor performance has not been used as a cause.
 - In this environment supervisors and managers are reluctant, even resistant, to taking action against subordinates for reasons of poor performance. Discipline becomes lax.
 - In many cases the lack of a performance component in the current promotional process also contributes to a lack of motivation in officials to develop and try more innovative programs so as to tackle crime and order maintenance problems. This contributes to a moribund operational environment.

The absence of an objective promotional process to promote those with potential has contributed to the current climate at the SLMPD. The best way for the Department to drive the necessary cultural change and provide that level of service the City of St. Louis needs to change its reputation, is the establishment of just such an objective promotional process. This should be accompanied by the implementation of clear performance objectives and metrics for its supervisors and commanders. This cultural change is fundamental to the Department's future success, irrespective of any improvements in processes or the acquisition of new technology.

At this point, it is important to say that none of this can or should be construed as saying the SLMPD is "bad" or "ineffective". This is not the case, as evidenced by the Department's clear accomplishments and measurable results. The SLMPD has many outstanding and dedicated performers. However, much of the state of the department lies beyond its current control. The problem is that without the recommended changes – clear metrics tied to objective personnel appraisal and a restructured promotional process – the Department cannot measure its own performance clearly or change its culture.

- The SLMPD has a Management Development Program in force to provide potential future leaders of the Department with a broader understanding of SLMPD's administrative operations - Planning, Budget, etc. – and their operational relationships. We recommended that higher priority be given to this program to deepen their understanding of the agency. Through their participation, the Department will also have an opportunity to assess these personnel.
- The Command staff of the SLMPD recognizes that given the current economic climate, staffing levels are untenable and that the inevitable reduction in personnel increases the need for greater operational effectiveness and efficiency. Re-engineering rather than mere re-design of current business processes and the better use of technology are mandatory. The Department has underused technology assets. There is new technology available that would justify the investment, providing rapid ROI and significant savings in direct and indirect costs.
- Technologies such as information analytics, video surveillance systems (mobile, fixed and portable), and dashboards that push customized information to personnel based on their responsibilities, offer immediate and substantial improvements in operational performance. Simultaneously, these improvements provide efficiencies and savings that will enable the SLMPD to do a better job with a reduced force.
- Help Investigators to "Connect the Dots" via analytics. Big-city police departments are for the most part highly compartmentalized, and their functions highly specialized. When crime information systems were first built as long as 30 years ago, they were not designed to meet the needs of a specialized, vertically oriented process framework. At the time, little or no thought was given to more advanced forms of reporting or analysis, or the sharing of information across different departmental functions. The result was an environment made up of siloed systems that were very efficient at capturing data but were less good at sharing it.

- This situation has had a direct impact on the detectives and officers investigating crimes, whose job it is to pull together all the strands of information and create a coherent picture to guide their efforts. With case information residing in pockets throughout large departments, officers spend much of their time on the phone or on their feet trying to track it down, leaving less time to do what they were trained to do, i.e. process that information to solve crimes.
- In addition to streamlining the nuts and bolts of casework, large police departments like the NYPD are increasingly looking to the “bigger picture” to guide their policies, practices and resource decisions. The new wave among major metro police departments is to use information proactively in the fight against crime. Recognizing patterns within crime statistics and using this to modify policing tactics allows resources to be directed to where they are most needed.
- With reduced levels of funding from state and federal programs flowing to cities, it is imperative that local jurisdictions identify ways to eliminate duplication and redundant spending, for example maintaining multiple IT systems that store the same information. Best practice is for jurisdictions (e.g. counties and cities) to share assets and facilities: crime labs, emergency response centers and training facilities.

“Every time we take a report, victims are tracked, witnesses are tracked. If somebody’s given a traffic ticket there’s a record of that in the computer. So it starts to create a web of all these different links that you get with people and it’s a tremendous tool. But you have to be able to understand the information and how to use it.”

—Police Office Brian Percich

6. Circuit Attorney

A. Discovery/observations

The Circuit Attorney (CA) as the chief prosecutor for state-level criminal cases is an elected position in the City of St. Louis. The CA office's mission is to pursue justice with the highest standards of ethical behavior and professionalism on behalf all citizens. It represents the people of St. Louis against those who stand accused of breaking Missouri State law. Jennifer Joyce is the current Circuit Attorney.

The CA Office (CAO) is one of the largest law firms in the St. Louis area: 60 attorneys, 30 investigators, 10 victim-services case managers and a 20-member support staff. Per year, the CAO handles approximately 4,000 felonies (serious crimes punishable by more than a year in prison) and 8,000 misdemeanors (less serious crimes) and has a 98% overall conviction rate. Its multiple legal divisions have expertise in the law ranging from homicide, sex crimes and child abuse to fraud, tax, and mental health. Finally, the CAO's Victim Service Unit assists over 4,000 victims annually.

Within the office, the CAO has the following organizations and areas of criminal law: Child Support, Community Affairs Bureau, Drug Court, Felony Trial Unit, Misdemeanors Unit, Victim Support, Warrant Office, and White Collar Crime.

Common frustrations and issues as seen by the CAO include inaccurate, delayed or incomplete communications and information exchange, a major bottleneck in the flow of information between the CAO and the Police Department, the lack of a common data structure and uniformity of standards and the reluctance of witnesses and victims to testify.

Currently, the CAO office uses these main metrics: case issue rate; conviction rate; and attorney turnover rate.

B. Areas for improvement

1. Data quality

There is a lack of accurate, real-time, comprehensive information exchange between the parties in the system. There is a perception that the SLMPD does not share sufficient data with prosecutors at the point of charging, preventing the sharing of all the information known to the police with the rest of the system. In turn, prosecutors do not have an electronic or data system available to convey information provided by the police department to the judges at the necessary time and when allowed by law. For example, the system lacks an information exchange from the police department that would permit the Court to accurately answer the question: "Is this one of the top-priority, repeat offenders who we need to get off the street?" No technology tools are in place for such data exchange. The data system and information architecture is fragmented. The system used by the SLMPD differs substantially from that of both the Circuit Attorney and the Courts. The data systems relied upon by the Police Department through the REJIS system do not always provide accurate assessments of individuals' criminal histories.

2. Efficiency gaps

The biggest opportunity for improvement in the inter-entity information exchange is between prosecutors and the police department. The agencies communicate almost exclusively through paperwork. Technological incompatibility combined with miscommunications produce efficiency gaps and redundancies in the work of both agencies. There is a measurement or goal mismatch between the SLMPD and CAO. Officers focus on arresting offenders and prosecutors focus on courtroom outcomes. This lack of shared goals results in miscommunication and work load inefficiencies. When charging individuals, prosecutors create an entirely separate set of data for their internal use. That information is in a format not readily available either to the courts or the system partners – each of whom rely upon their own separate, independent data sets and technology. Each stage of the system (community to police to prosecutors to courts) has separate stand-alone data sets and technology infrastructures. These data systems do not communicate effectively, efficiently or consistently to the detriment of coordinated efforts.

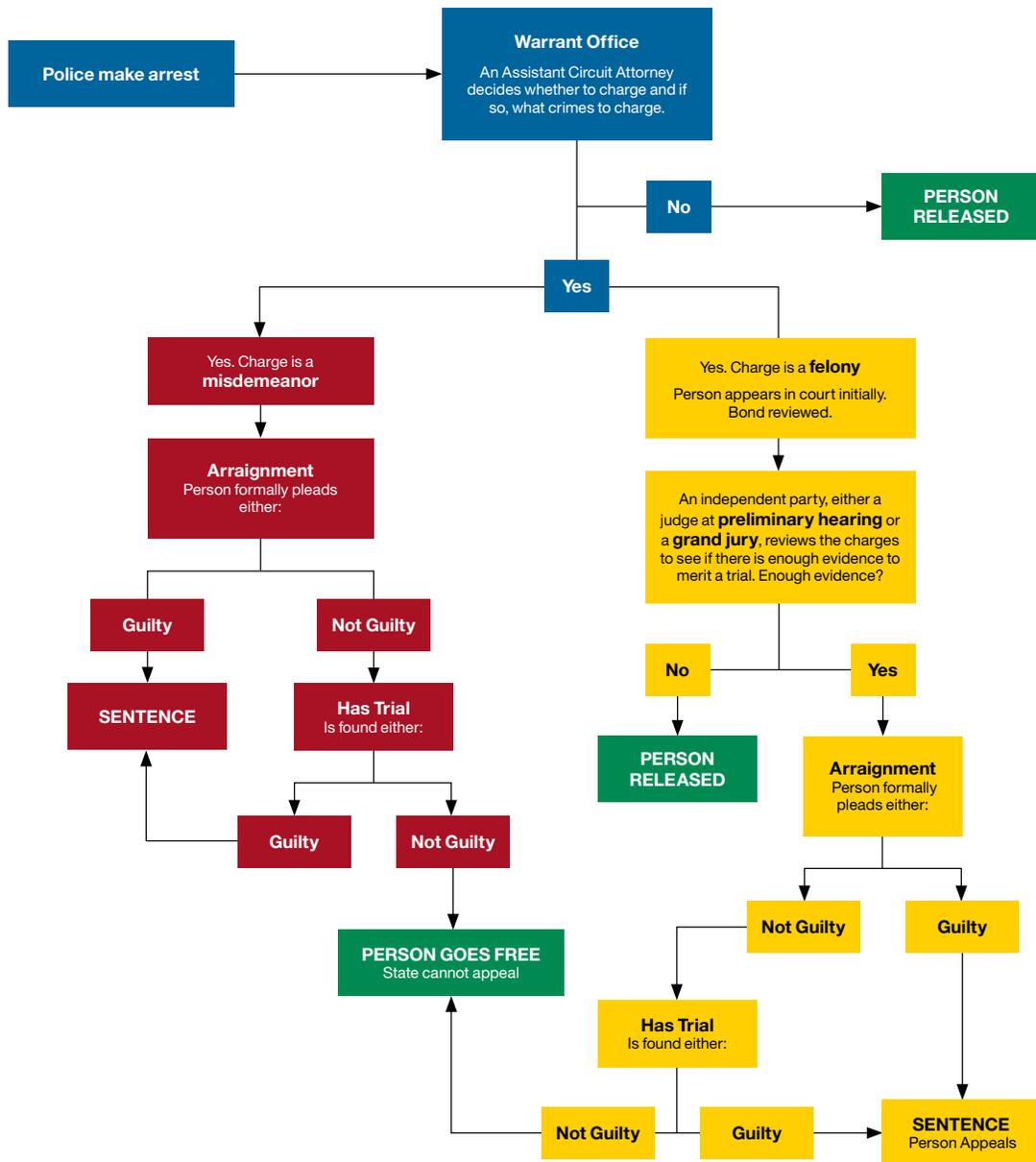


Figure 1.8
Circuit Attorney view of the process flow

3. Metrics and performance

The public safety extended team needs to establish inter-entity common communication metrics and standards and, where legally and ethically permissible, joint visibility. All involved need to want and be willing to work together for long-term culture change.

4. Accountability

Both the SLMPD and the Circuit Attorney need to establish ongoing, shared benchmarks for inter-agency ownership of criminal justice outcomes. The conviction rate within the State criminal justice system is a measurement of the quality of police work provided. The SLMPD needs to understand and share conviction standards to ensure the accurate accountability of criminals. The Circuit Attorney must include crime rate and responsiveness to crime situations in its performance measures. The judiciary requires a set of tools that allows them to evaluate the impact of a particular crime and their effectiveness.

5. Common language

The absence of inter-agency standards and a common communication structure has been amplified by a lack of standard language around the system's top-priority offenders. This often creates tensions and misunderstandings as to where to allocate scarce resources. The CAO, as with the whole extended team, must work with other stakeholders to reach common language for outcomes.

6. Lack of community's willingness to testify

There needs to be a commitment from the extended team to identify, engage, encourage and support witnesses and victims to testify when needed.

C. Recommendations

- Establish an offender coversheet: with a list of common criteria for the extended team that identifies the top-priority offenders and supports strategic intelligence collaboration. For example, the definition of goals, measurement and inter-agency communication around the "top 20% of offenders".
- Establish inter-entity common goals and missions: a communication framework and system using information-sharing technology, for inter-agency collaboration based on intelligent data. There needs to be a common measurement or goal among all entities.
- Improve inter-department data flow, especially between CA and PD: reduce inefficiencies in the system by virtually "consolidating" functions through collaborations and leadership. Starting from the information flow and collaboration between PD and CA, focus on common goals and metrics.
- Closed loop tracking between agencies of information-based charging and case management outcomes: share the outcome and progress of cases with other justice entities like the Police Department, completing the feedback loop to gain better intelligence collaboration in future cases.
- Police Department education and training: prosecutors should work with SLMPD to ensure adequate arrest and charging procedures, helping to ensure that top-priority offenders are charged appropriately.
- Automate manual process and re-entry between the Circuit Attorney and SLMPD.
- Improve community, witness, and victim feedback: agencies should consider the use of social media and other technologies to engage community groups, the public, witnesses and victims in solving crimes. Use a variety of communication channels to reach key segments of the population who are distrustful of the criminal justice system.

7. Courts

A. Discovery/observations

The City of St. Louis has the highest volume of criminal trials in the state. These are less likely to send defendants to state prisons, and when they do, they have an average sentence time double the state average. The City Circuit has 18 trial divisions using a central docketing system and currently has 1,900 open felony cases.

Judges currently request a Sentencing Advisory Report (SAR) for about 5% of the cases they try as an average, with some requesting SARs much more frequently than others.

All judges we spoke to want to have a better and broader understanding of their defendants across the whole process: from when bond is set through to sentencing and probation.

There is a consensus that the reduction in mental health funding in the city is already starting to have an impact on the number of cases displaying these issues. Many stakeholders feel that data on this will come through in the next year.

Drug addiction issues are generally driving the number of burglaries in the city. There are an increasing number of younger defendants with triple offenses and younger defendants for homicide cases. Safety and security at the community level is a key measurement the judges look at when understanding defendants' backgrounds. Many places in the city are considered to be dangerous places to grow up, with general instability, lack of a community network and real tension between the community and the Police Department. Other areas are affected indirectly by crime, driving population loss with safety perceived as an issue.

The court system has made significant improvements in moving cases through and getting more information on defendants. However, improvements in court process have not noticeably filtered through to crime figures. Some feel that this might be because they are only having an effect on the margin or alternatively, there might be a time delay and the effects will lag behind.

There has been a significant increase in spending at the state level on housing for the criminal population. Even adjusting for inflation there was a six-fold increase from 1982 to 2009 (\$100 million to over \$600 million). Political views have converged around the appropriate use of alternative sentencing – whether citing the financial costs of incarceration, or the human cost and failure to rehabilitate. All seem to agree that spending needs to be optimized in order to achieve the best outcome. To do this requires more detailed and tailored information than is currently readily available.

Judges in the courts try to monitor the outcomes of probation manually although we rely on anecdotal evidence for this. They get to see failures of probation, not its successes. This leads to a gap – the lack of positive feedback on the affects of their actions from other parts of the system, such as parole data on effectiveness and life skills. They also feel that they do not know all the programs and options available for probation.

The University of Missouri, St. Louis has a well-respected Criminology department that none of the parties in the extended team are currently fully leveraging.

B. Areas for improvement

1. Data quality

- There are currently only vague connections between cases, offenders and defendants. Their identities are not clearly linked with their identities in other agencies (for instance social services). Aliases are local to each agency and family connections are not always obvious.
- Judges do not get a consistent view of the information they need to determine who the worst offenders are. This information needs to be available when bond is set as well as when considering sentencing options.
- There is a lack of reporting and information available on the operations of the courts, for instance the number of outstanding warrants and the identities of offenders confined in the jail at any one time.
- There is a specific issue with the court docket print-out: it does not include a status to say whether the defendant is in custody.

2. Efficiency gaps

- Inefficient handoffs from paper-intensive processes lose information – for instance, once a warrant is issued, a copy is faxed to pre-trial release in the justice center and the police department.
- Some cross-agency open loops lead to missing notifications for other agencies – when a Capias warrant is issued by the court, it is paper-based and notifications to the police department and circuit attorney can be missed.
- Scheduling errors delay justice – if there is a joint felon and misdemeanor case the sheriff's office does not get a combined docket. This leads to inefficient court scheduling between different divisions. Defendants can also get a failure-to-appear warrant when confined or at another division for a hearing.
- Clerical re-entry of data costs time, risks in-custody and builds up backlogs – for example there are two ways to enter information into JIS, manually or via a PA transfer of the REJIS standard info from the Circuit Attorney's office which is often then re-entered manually.
- Crime lab results slow the whole process and add additional steps. Defendants have to be released before results are available.
- The Bond commission is not linked to the Circuit Attorney; this is a key trust relationship that appears to be somewhat broken.

3. Metrics and performance

- Lack of operational metrics that measure the efficient execution of justice in the circuit courts.
- Lack of financial metrics that support the financial operations of the court based on the agreed expected outcomes.

4. Common language

- Lack of genuinely agreed UCR measurements makes it hard to align and share data between the courts, Circuit Attorney and Police Department.

C. Recommendations

Reduce paper in processes

It is possible to have a system that would not only replace off-site storage of paper case files but could also be used to manage the storage of paper coming into the courts. This needs scanners and software to electronically image the scanned documents and apply a watermark. Missouri has ruled that the electronic image can be considered as an original, thus removing the need to store the original hard copy. The software would also include the Electronic Document Management (EDM) aspects required to handle retention, off-site copies etc. This approach would also reduce the time taken to find stored files, lessen the likelihood of files going missing and the need for cases to be dismissed.

Video arraignment

Based on the feedback from the video arraignment pilot in the municipal courts, this approach should be extended to include the whole circuit court in order to:

- Reduce sheriff hours in transporting prisoners between the jails and the courts.
- Reduce transportation costs.
- Reduce the risk of unnecessarily moving prisoners around.

We believe the initial setup costs for moving to this system would be minimal and therefore the return on investment would be quick.

Combined court docket procedure

The potential for the JIS system to support a combined docket should be investigated in order to save costs when defendants are mistakenly double-booked to appear in multiple courts or are inefficiently scheduled for multiple charges. This would not only speed up the execution of the criminal justice process, but it would also save court and administration costs and reduce the need for police officer overtime. The combined docket should also include the defendant's current incarceration status.

Offender categorization

Apply the model used in the state Drug Courts to assess defendants and cases more formally since offenders are actually from a number of different populations:

- Categorize them according to need and risk.
- Depending on their need/risk profile, apply a differential sentencing model.
- Then use evidence-based systems to track performance against both the categorization and the effects of sentencing.

Using this approach, evidence-based differential sentencing allows the court to focus on the cheapest solution(s) that will actually work and drives down the recidivism rate.

Sentencing options

The judges could be provided with a broader range of sentencing options and their cost relative to other sentencing choices. For instance, electronic monitoring of low risk offenders would be a fraction of the cost of incarceration and in some cases the costs could be borne by the offender. This monitoring could also be tuned to restrict a various movements which could be relaxed as the offender makes progress through their other rehabilitation activities.

Sentencing outcomes

In order to help judges understand the outcomes of their sentencing and rehabilitation efforts, a link to the broader system could be created to share information and feedback. This would allow judges to confirm that their decisions are having the desired effect. It would make sense to replicate the best practices being developed through a federal grant for drug courts at state level, an evidence-based way to track the outcomes of these decisions.

Predictive analytics can be used to determine the success or failure of sentences based on past information of similar cases.

“If you don’t have all the information from the intelligence that’s gathered about an individual, you’re not going to make the best decision. And there’s nothing worse than finding out something after the fact that would have changed your decision.”

— Judge Ohmer

8. Probation and parole

A. Discovery/observations

The probation and parole functions are combined in the City of St. Louis. Within the St. Louis metropolitan area, there are 10 probation and parole offices with roughly 182 officers and clerical staff, a ratio of about seven probation officers to every one clerk. There are currently about 17,850 probation/parolees in the city's system. Only 2% of prisoners released within the state finish their entire sentences, leading to a growth in the city's probation/parole caseload by approximately 75 cases monthly. The city also operates a housing facility that provides 500 beds for offenders that are unable to find housing or that need to be more closely supervised. Case workers are typically assigned between 35-250 cases depending on the level of supervision needed by their clients.

On average, clients are seen 1 to 3 times monthly, based on their individual supervision needs. Clients are mandated to attend programs as a condition of their release on probation or parole. For instance, a single client may have to use drug rehabilitation, employment and mental health services, and need to finish work on a GED. These requirements, along with information from their time in prison, are passed from the Corrections Department to parole officers through the OP II system. Warrants are issued for clients who fail to report to the parole office or for those not adhering to their prescribed schedule of services. Probation/parole officers act as the authority to check that clients are attending their mandated social service organizations. Offenders' progress is tracked via case notes that are input into case files manually during interviews with clients.

B. Areas for improvement

1. Data quality

The probation/parole office uses multiple systems and databases, with REJIS, JIS, and OPII being the primary means to receive and disseminate information about their clients. Due to the umbrella of services used by clients, disparate sources of information are retained within the many social service organizations that each client uses. Each of these organizations keeps a separate file for that individual, with no ability to collect all the information. The probation and parole division reviews management reports focusing on the following areas: caseload, staffing, probation returns, parole returns, employment and substance abuse rates. This information is provided at statewide, regional and district levels but not at the individual level.

2. Efficiency gaps

The biggest efficiency gap occurs with the manual entry systems used by various social service organizations that interact with probation/parole. There is also a large amount of duplication among agencies as each keeps its own individual records.

3. Metrics and performance

Multiple metrics are being used within the probation/parole system; however, there is little evidence of a scoring matrix that can compile all the factors relevant to a client for objective comparisons. This would be useful in assigning and ranking clients more completely than the high/med/no needs-based assessments currently being used. Clients are mandated to receive services from various other social service organizations within the City's control, but most of these use disparate data sources and attendance is a key factor in measuring progress of a client.

4. Accountability

Probation/parole officers are expected to assist an offender to work towards achieving specific plans and goals, however a lack of individualized metrics within the organization, means there is little they are held accountable for individually. Case workers are expected to see clients periodically, based on a prescribed schedule with no concrete measure by which to adjust a client's schedule based on their progress. Visits happen less frequently according to the case worker's assessment.

5. Common language

Probation/parole receives information from multiple organizations with each having a different vantage point. This causes issues with language that means probation/parole do not have a cohesive view of the client.

C. Recommendations

- Develop all encompassing goals for the probation/parole organization in order to create a sense of accountability within the community of service providers. Link these goals to the public safety mission.
- Develop a report framework mechanism that provides analysis based on each client's needs and likelihood of success not failure (re-offending) and a means to rank each client's progress numerically within probation/parole.
- Add an objective set of criteria that allows case workers to be compared individually based on their effectiveness. Use these criteria in conjunction with qualitative requirements to rank and compare probation/parole workers and drive accountability.
- Implement technology that combines data (a unified view of the client) from all sources within the probation/parole system to allow real-time access to client information. This should also be able to distill client information to a single identity within the various systems, ensuring completeness and accuracy of case file information.
- Expand the use of community and non-profit resources and programs from the extended team in supplying rehabilitation services.

9. Cost considerations

We are aware that many of the solutions that we have recommended will cost money. St. Louis, like many other cities around the world, is not in a position to make large financial outlays to improve some of its operations. The time limits of this engagement have not allowed us to present complete business cases for all our recommendations. However, we have outlined conservatively and in some detail a few of the cost implications (see Appendix) of those decisions the city could undertake. These would help fund their own implementation, along with the implementation of other projects. This “invest to save” model will be unlikely to fund all of the necessary investments needed by the City in a timely manner, so we would like to present some other opportunities of which St. Louis can take advantage, to continue to make itself a Smarter City. Similar to the entire public safety extended team, funding for projects must be considered as a pool, as opposed to the current siloed approach. The picture below illustrates how St. Louis can implement a phased approach to projects and use the associated savings to reinvest in other projects.

Federal grants

There are numerous federal grants: the Urban Areas Security Initiative, Metropolitan Medical Response System and Transit Security Grant Program grants among others, which focus on public safety. The trend of many public safety grants seems to be moving towards combining tactical police work with strategic research from criminologists and various other research entities, similar to the medical research model. Due to the presence of a leading criminology research department within the City, St. Louis is extremely well positioned to take advantage of these types of funding opportunities.

Cost recovery partnerships

Building shared risk/reward propositions with suppliers is another way to fund assets needed to make changes necessary within St. Louis. The California Franchise Tax Board pursues non-filers using a successful model, whereby the private sector has constructed a solution to better identify non-filers and receives remuneration whenever the Tax Board recover revenue attributable to the system. North Carolina is running a similar funding approach to recover revenue lost to Medicaid fraud.

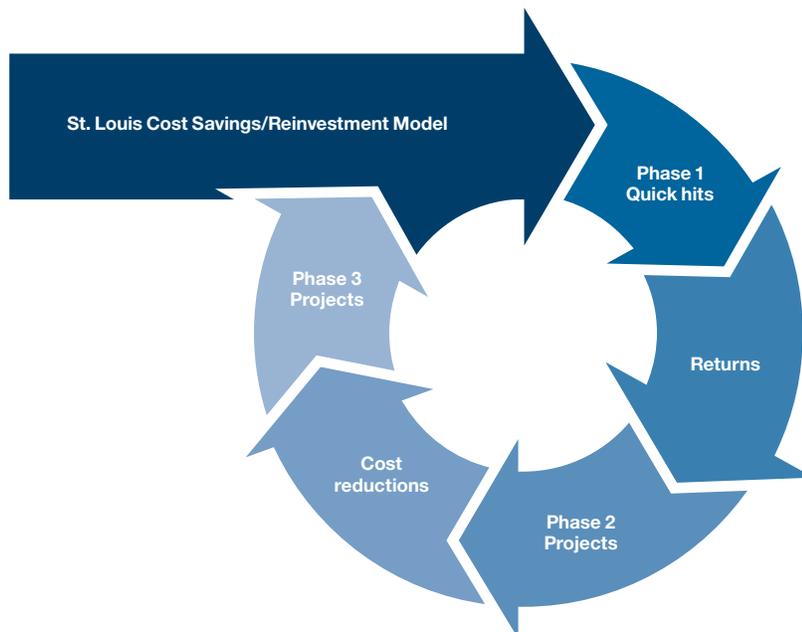


Figure 1.9
Phased approach to project implementation

Business process outsourcing

There are many processes unnecessary to the health and welfare of St. Louis' business operations. For example, storing paper in the city clerk's office costs the City more than \$200,000 per year. Similar savings could be realized in many places within the City of St. Louis. Transferring many of these various processes to a private sector third party would greatly improve the city's efficiency and reduce the costs of many city government practices. By automating, digitizing, or outsourcing within various organizations, St. Louis can make significant cost savings.

Joint operations

St. Louis can achieve significant savings by conducting joint operations with other local entities. The most obvious candidate for this type of partnership is St. Louis County. Similar to the model that the county and city used to fund and operate their police helicopters, these types of operations would increase readiness, decrease costs, and better utilize resources for the betterment of both organizations. Other joint operations examples that would very much reduce costs for both organizations would be the amalgamation of different police academies and crime labs.

Joining city and regional crime labs would have many other benefits besides pure finance. Due to the high rate of use of St. Louis' crime lab, its technicians are very skilled in a wide range of operations and can share their expertise with the staff of other regional crime labs. Moreover, due to the backlog of cases – drug cases in particular – St. Louis allows many criminals back into the streets before issuing a warrant for their arrest. This process is extremely inefficient. It is costly in man hours and administration and tarnishes the overall perception of the justice system. With the service levels of a joint lab focusing on priority cases, warrants can be issued within the 24 hour time frame allotted by the legal system, saving time, money and lives.

Private sector philanthropy

St. Louis has an impressive web of highly capable philanthropic organizations that help sustain City activities. In addition to significant voluntary sector involvement in the delivery of social services, non-governmental organizations support other information investments. This is clearly an area in which the City will continue to benefit. In particular, businesses that have a vested interest in helping St. Louis fund projects to make the city safer and ultimately more business-friendly can contribute funds, jobs and internships, addressing many areas simultaneously within the city.

10. Long-term recommendations

As outlined in the overall recommendations, public safety is connected to virtually every city issue and all these systems must be aligned if we are to prevent rather than react to crime. In addition to the actionable recommendations requested by the Mayor, the IBM team identified other areas for investigation by the City of St. Louis within a longer time frame, ranging from education to economic development, to address some of the root causes of crime.

A. Preventing youth crime and recidivism through education

Introduction

Low levels of literacy correlate to the crime rate in many cities including St. Louis. Youth with low literacy skills are not only more likely to be involved in the juvenile justice system, but also have a higher likelihood of negative outcomes post incarceration (http://www.neglected-delinquent.org/nd/docs/literacy_brief_20100120.pdf). The Department of Justice states: “The link between academic failure and delinquency, violence and crime is welded to reading failure.” Over 70% of inmates in America’s prisons cannot read above a fourth grade level.

Public education can be a key indicator for public safety: the earlier we engage a high risk child, then the greater the likelihood of changing bad and encouraging good behavior. “High risk child” here is defined as those K-12 school age youths who may be identified with a tendency to drop out of the education system. Those reading well below their grade level are more likely to lag behind in terms of their academic achievement.

In this report, we focus on public K-12 education and its role in reducing juvenile recidivism, although research also shows a strong correlation between post-secondary education and the recidivism rate.

- 85% of youth in the juvenile court system are functionally illiterate.
- More than 60% of all prison inmates are functionally illiterate.
- Juvenile violent crime occurs most during the critical after-school hours of 3-6PM.

In addition, research (<http://www.ihep.org/assets/files/publications/g-l/LearningReduceRecidivism.pdf>) has compared state-level education data with crime rates and incarceration rates and found those states that focused the most on education tend to have lower violent crime rates and lower incarceration rates. While there is no silver bullet that will guarantee reductions in criminal activity or crime rates, the research suggests that increased investments in quality education have a positive public safety benefit.

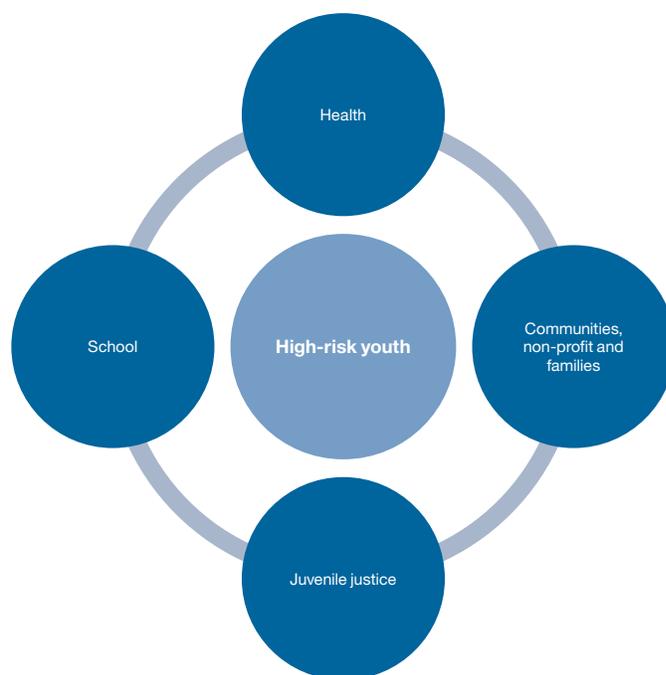


Figure 2.1
High risk youth environment

Research also shows adult individuals incarcerated in U.S. prisons and jails report significantly lower levels of educational attainment than those in the general population. There is a relationship between high school graduation rates and crime rates and a relationship between educational achievement and the likelihood of incarceration. The impact of policies related to education and public safety are concentrated among a disadvantaged pool: people of color; those less likely to have access to quality educational opportunities; those more likely to leave educational systems earlier and more likely to be imprisoned.

The Department of Justice has published research data on prisoner recidivism. Their analysis tool allows users to calculate recidivism rates for people freed from state prisons based on a sample of released prisoners from 1994 and followed for a three-year period. This tool can be used to analyze a population sampled for a specific demographic, criminal history and sentence attribute statistics. A clear higher rate of recidivism is shown in the younger prisoners. (<http://bjs.ojp.usdoj.gov/index.cfm?ty=datool&surl=/recidivism/index.cfm#>)

Prisoner recidivism output report

Selection criteria for this analysis			
Age at release	All ages	Prior arrests	Any arrest history
Race	All races	Sentencing offense	Any offense
Sex	Both sexes	Imprisonment history	Any imprisonment history
Ethnicity	All ethnicities	Time served	Any time served

Recidivism rates of prisoners with selected characteristics released in 1994 from prisons in 15 states				
Cumulative percentage of released prisoners who were:	Time after release			
	6 months	1 year	2 years	3 years
Rearrested	29.9%	44.2%	59.3%	67.5%
Re-adjudicated	13.5%	26.8%	43.5%	54.1%
Re-convicted	10.8%	21.9%	37.2%	47.3%
Re-incarcerated	8.7%	17.7%	30.4%	39.2%
Re-imprisoned	5.2%	10.9%	19.6%	26.3%

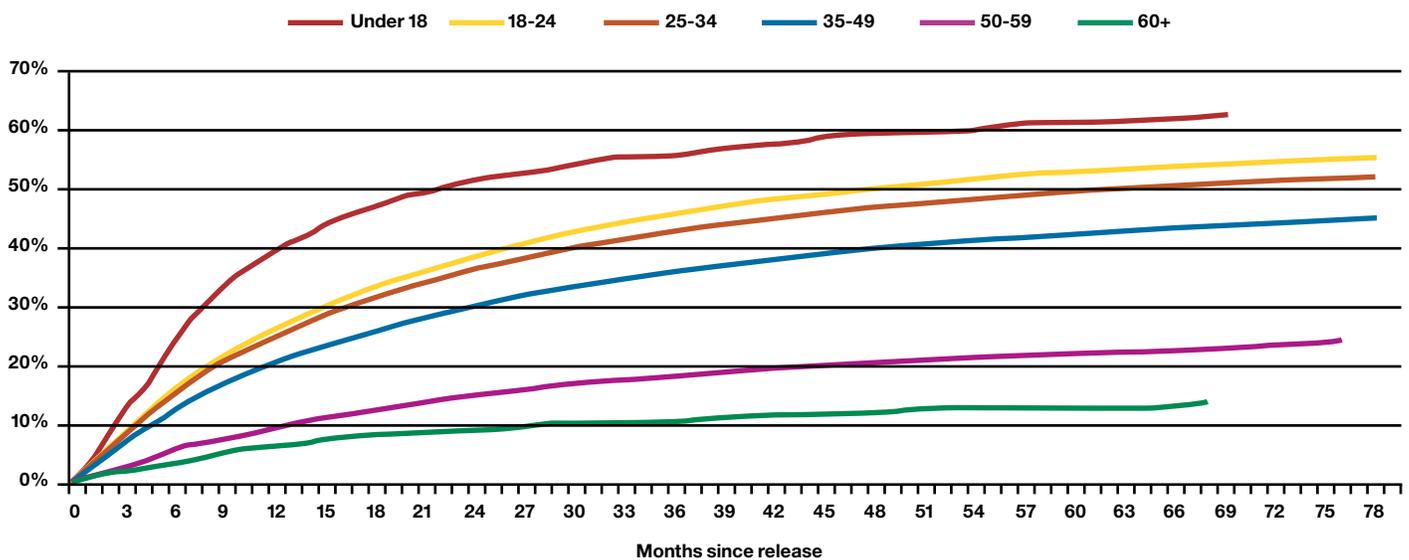
Selection criteria for this analysis

Age at release	<21	Prior arrests	Any arrest history
Race	All races	Sentencing offense	Any offense
Sex	Both sexes	Imprisonment history	Any imprisonment history
Ethnicity	All ethnicities	Time served	Any time served

Recidivism rates of prisoners with selected characteristics released in 1994 from prisons in 15 states

Cumulative percentage of released prisoners who were:	Time after release			
	6 months	1 year	2 years	3 years
Rearrested	38.7%	54.0%	69.2%	79.9%
Re-adjudicated	17.6%	35.4%	53.7%	66.8%
Re-convicted	12.6%	26.6%	43.9%	57.7%
Re-incarcerated	10.7%	23.2%	38.6%	50.8%
Re-imprisoned	6.9%	16.0%	28.3%	35.3%

Recidivism rates by age at release



<http://www.dc.state.fl.us/pub/recidivism/2001/factors.html#Ccage>

Recidivism rates by education grade level tested					
Months since release	Last tested level				TOTAL
	1-3.9	4-8.9	9-11.9	12+	
6	16.9%	15.4%	12.0%	10.4%	14.1%
12	27.1%	25.0%	20.1%	17.7%	23.1%
18	33.9%	31.4%	25.9%	22.3%	29.3%
24	39.1%	36.3%	30.2%	25.8%	33.8%
36	46.2%	43.0%	36.2%	31.0%	40.2%
48	50.9%	47.2%	40.0%	34.3%	44.3%
60	53.6%	49.8%	42.6%	36.4%	46.8%
72	55.3%	51.8%	43.9%	37.5%	48.6%

Research also confirms that grade level (literacy) is a factor correlated to recidivism.

Inmates have a 16% chance of returning to prison if they receive literacy help, compared to 70% for those who receive no help. This equates to taxpayer costs of \$25,000 per year per inmate and nearly double that amount for juvenile offenders. (http://www.justicepolicy.org/images/upload/07-08_REP_EducationAndPublicSafety_PS-AC.pdf)

Discovery/observations

St. Louis Public School (SLPS) District is a large urban district, which has had problems with its students including poverty, violence, dropouts and low test scores.

On March 23, 2007, the Missouri State Board of Education chose to strip the St. Louis Public Schools of their accreditation and to take over their management. The vote came despite mixed public opinion. The board's decision created a three-person board, called the "Special Advisory Board (SAB)", whose members are nominated by the Governor (subject to Missouri Senate confirmation), the Mayor of St. Louis (no confirmation required) and the President of the St. Louis Board of Aldermen (no confirmation required).

Dr. Kelvin Adams assumed the role of Superintendent of the St. Louis Public Schools in Nov, 2008. Dr Adams' foremost priority has been to get SLPS re-accreditation and he wants to achieve this by the end of 2012. In the longer term, he is striving to increase system-wide academic achievement to attract the City's school age children back to the public schools. The school system is losing kids to other neighboring systems and/or to other states as middle-class parents pull kids out of the public schools due to their perceived lack of quality.

The students' environment is pivotal to their academic achievement, hence the major issue facing public education – the lack of housing and jobs for parents. There is an existing culture within the public school system whereby decisions are based on feelings rather than hard data. Another problem facing the SLPS is the inability to attract quality talent (human capital) into the public education system.

One way to combat crime is to reduce juvenile recidivism; this is also tied to the juvenile justice system, which shares the same ultimate goal. The Hon. Jimmie Edwards, St. Louis City's Juvenile Court Judge, cited three primary factors as the root causes of juvenile crime:

- "Lack of adult supervision"
- "Too much of idle time"
- "Economic hardship"

The Alliance for Excellent Education reported in 2006 that a 5% increase in male high school graduation rates would produce an annual savings of almost \$5 billion in crime-related expenses. Coupled with the annual earnings of those who graduated, the U.S. would receive \$7.7 billion in benefits. For Missouri, this translates to annual direct savings of \$96M and total benefits to the state of about \$147M. (http://www.justicepolicy.org/images/upload/07-08_REP_EducationAndPublicSafety_PS-AC.pdf)

Areas for improvement

- Data quality: there is a need for real-time data at the superintendent's fingertips – decisions are currently made based on feelings, in part due to the fact that there is no single overview of the data.
- Efficiency gaps: Due to the extensive involvement of non-profit organizations in the public education system, there is a lot of disjointed information about school students. The ability to present a unified view of students would be helpful to track student performance.
- Metrics and performance: there is a call for clear metrics to identify high-risk individuals and measure the improvement of literacy as well as recidivism for those already in the juvenile justice system. For example, a process that may identify the youth group with a high dropout risk: 1. no after school activities; 2. on reduced lunch schedule; 3. failing grades(>2 grades below). The SLPS plans to recreate its teacher evaluation by tying students' achievements to the evaluation tool. From the public safety perspective, it should consider establishing metrics to identify high-risk students early and engage these individuals proactively, ensuring literacy improvement as a primary factor.

- Accountability: Lack of system wide accountability for youth recidivism rates. We tend to shy from identifying "high-risk" populations until they are in the juvenile court system. To effectively combat crime, there needs to be a better way to prevent youth crime.
- Common language: no common infrastructure or linkage currently exists between youth recidivism and public safety.

Recommendations

Accountability: Appoint a "Youth Literacy Czar" as a member under the Chief Performance Officer (CPO), who is able to pull all resources and get key stakeholders to the table. He/she should be capable of pulling money from all resources and garnering human capacity to address public safety – to win power by gathering people for the greater partnership. His/her charter will be to reduce illiteracy and do this in collaboration with the juvenile justice system.

Performance metrics: a parameter in the metrics for youth recidivism may be literacy improvement, graduation rate for high risk youth in public schools and in the juvenile system and literacy-improving programs focusing on after-school time and extra curriculum.

An example of this is the juvenile innovative education model led by Judge Edwards's Innovation Concept Academy. It would be good to monitor the results of the academy and learn from it. To address the root causes, much more must be done for these children at the systematic level.

Integrated Youth Management Hub: We recommend that the City implement an Integrated Youth Management Hub. The metrics should be linked to the overall public safety measurement system/process, to address youth services with a focus on literacy improvement programs and youth recidivism. This hub should serve as an integration point and enable a case or school worker to determine eligibility for targeted public safety youth services and to initiate service delivery.

National Network for Safe Communities
<http://www.nnscommunities.org/>

B. Neighborhood/Ward Community Grant Investment Framework

Economic opportunity is a key part to combating crime in St. Louis. There is a sense of hopelessness among many residents. Over and over again, we were told that if only there were job opportunities available to those on the outer edges of the economic spectrum, crime could be prevented. There are many neighborhoods within St. Louis where economic opportunities have disappeared. Economic development investment in those hardest hit neighborhoods will restore hope for those residents. Too much time on the hands of these citizens has been cited as a key contribution to crime. Giving these individuals employment and entrepreneurial opportunities will go a long way to turning them away from the alternative of criminal behavior.

One of the ways to do this is through an economic development model that targets the hardest hit neighborhoods. We have been told of community development grants evenly split among the city's 28 wards and used at the discretion of their Aldermen. However this is done without clear guidelines on how and where those funds should be invested.

“The connection to community safety and our partnership with the police and several youth organizations and other organizations comes down to the fact that not only do we want to see our families succeed educationally and in employment, but also we want them to be safe and we want them to feel safe. And so that’s how we see our role in public safety.”

—Kate Casas, Senior Project Manager, Urban Strategies

We believe that community development grants given to City Alderman and others must be targeted to the most badly affected communities. This means some wards, where the economic opportunities exist and unemployment is low, will not receive as much in community development grants as other wards. This makes sense. If the City singles out those neighborhoods economically hardest hit, it will improve overall. This framework is designed to take politics out of the investment of community development grants. The goal is to use this framework to invest based on need versus privilege.

To do this, a formula should be created that can measure the economic health of a neighborhood and look at demographic measures in each district. The Neighborhood/Ward Community Grant Investment Framework must be the vehicle to drive these decisions. This is a decision-making framework designed to measure the overall health of all of the 28 wards in St. Louis. It takes existing demographic information and “scores” it based on a rules-based scoring system whose parameters are set by the city leadership.

Sample datasets for the Neighborhood/Ward Community Grant Investment Framework

The framework is built in three parts: a Neighborhood/Ward Economic Health Scorecard, a Neighborhood Economic Health Community Grant Investment Model and a Neighborhood Economic Health Impact Model. These components make up the overall framework and are described on the next page.



Figure 2.2
Sample datasets for the Neighborhood/Ward Community Grant Investment Framework

Neighborhood Economic Health Scorecard

The Neighborhood Health Scorecard will measure the health of neighborhoods and wards throughout the city. It is based on a series of demographic metrics. Each metric can be impacted by community development grant investments. The scorecard visually portrays the overall health of each neighborhood/ward by color-coding each neighborhood based on the health calculations and contains drill-down capabilities to the neighborhood level through geo-spatial information. Much of this information is tracked today in Geo St. Louis.

Capabilities

- Scorecard values are driven by the information collected from each neighborhood.
- Geo-spatial neighborhood maps, driven by information collected from each neighborhood.
- Drill down capabilities at the neighborhood level.
- Query, reporting and analysis enable decision makers to easily understand, analyze and share the information they need, to improve decision making for neighborhood economic development.

Neighborhood Economic Health Community Grant Investment Model

The Neighborhood Economic Health Community Grant Investment Model is an operational and financial planning and evaluation solution. It is designed to help prioritize the investment of community grants in infrastructure and programs. The goal is to improve the neighborhood's economic opportunity by targeting investments. The framework is based on the neighborhood metrics and other city information to determine what investments will yield the best long-term economic impact for residents.

Capabilities

- Prioritizes community grant investments to maximize neighborhood health goals and spur economic growth.
- Financial and operational planning model that is driven by information collected from each neighborhood plus other city data, external data.
- “What if” simulation is used to understand the impact of community development grants and assess the attractiveness of various courses of action.

Neighborhood Economic Health Impact Model

The Neighborhood Economic Health Impact Model is a predictive model that can estimate potential Neighborhood Economic Health trends over the long term. This part of the framework is based on looking at community grant investments through demographic metrics and applying additional information on the impact of similar investments made in other cities or in St. Louis. The Impact Model can show what is likely to happen and how economic health can be affected by a variety of community grant investments.

Capabilities

- Predictive model driven by information collected from each neighborhood plus other city data, and external data.
- Modeling of trends by neighborhood that gives a long-term economic view of the investments.
- Predictive information feeds the city's community grants development strategy as well as the city's economic development strategy.

Each component can stand alone or be integrated into a complete framework. We are recommending a full information technology audit. Once completed, we will see which hardware and software capabilities exist in St. Louis and can be used for this framework.

C. Economic development

We believe that economic development – i.e. jobs etc. is key in reducing the overall plight of the city. Crime and lack of jobs are tightly linked. The following organizations need to take the lead in bringing jobs and business to STL:

- St. Louis Development Corporation (SLDC)
- Industrial Development Authority (IDA)
- St. Louis Local Development Company (LDC)
- Land Clearance for Redevelopment Authority (LCRA)
- Land Reutilization Authority (LRA)
- Planned Industrial Expansion Authority (PIEA)
- Tax Increment Financing Commission (TIF)
- St. Louis Port Authority

The St. Louis area has a great opportunity to exploit vacant buildings in the downtown sector to encourage new firms to establish a presence. It is populated with empty lots and boarded up buildings that need to be occupied, not only for the sake of public safety and an increased tax base, but their aesthetic value. The goal is to attract companies whose members engage in work to “create meaningful new forms”. In the leading centers of this new class geography, the creative class makes up more than 35% of the workforce. This is already the case in the Greater Washington D.C. region, the Raleigh-Durham area, Boston, and Austin – all areas undergoing tremendous economic growth. A number of smaller regions have some of the highest creative-class concentrations in the nation – notably college towns like East Lansing, Mich. and Madison, Wisc. The focus needs to be on high-tech sectors, financial services, the legal and healthcare professions and business management.

The Fast Company List of Top 10 Firms over the last year includes eight firms which are IT and Social Media companies. Companies like Facebook utilize huge server farms which require much cheap storage space. St. Louis has a large number of abandoned buildings in downtown areas with great access to dark fiber (high speed gigabit bandwidth fiber optic infrastructure) which is needed to host the new explosion of social media sites. Most of the bandwidth requirement is for multimedia applications and files and high definition download and upload. This presents a perfect scenario for a sub-optimized broadband infrastructure that has long been abandoned in the heart of St. Louis.

There is a robust established green movement in St. Louis. StLouisgreen.com has a listing not only of participating companies and green techniques, but also of who is hiring and what types of employment.

The St. Louis RCGA is the economic development arm of the city. It is commissioned with recruiting and growing the portfolio of stable firms. There are universities feeding the area with talented graduates who need employment in a tight job economy. The goal should be to employ a high percentage here and not let them escape to other high-tech corridors, including Route 128 in Boston, Silicon Valley in California, Austin, Texas, the Seattle area, and Research Triangle Park in North Carolina.

Some of the potential segments that would find St. Louis attractive are biotech, fashion design and gaming, since these industry segments are already represented in the city.

Other areas of interest should be energy, finance and information technology as mentioned above with hosting server farms. The fastest growing segment of IT is cloud computing which is a hosted model for delivering data and services. This requires significant infrastructure at a low cost in order to deliver applications to users, just as Google, Amazon and major telecommunications companies in the world have become adept at hosting and billing users.

A recent book by Richard Florida, “The Rise of the Creative Class”, focuses on cities that have educational institutions as well as job growth. This job growth is focused on the ability to attract and retain high-tech jobs. The following is a list of the top ten and bottom ten cities – St. Louis should aspire to reach the top ten.

Large cities creativity rankings

Rankings of 49 metro areas reporting populations over 1 million in the 2000 Census.

Top ten cities

City	Creativity index	Percentage of creative workers	Creative rank	High-tech rank	Innovation rank	Diversity rank
1. San Francisco	1057	34.8	5	1	2	1
2. Austin	1028	36.4	4	11	3	16
3. San Diego	1015	32.1	15	12	7	3
3. Boston	1015	38.0	3	2	6	22
5. Seattle	1008	32.7	9	3	12	8
6. Chapel Hill	996	38.2	2	14	4	28
7. Houston	980	32.5	10	16	16	10
8. Washington, DC	964	38.4	1	5	30	12
9. New York	962	32.3	12	13	24	14
10. Dallas	960	30.2	23	6	17	9
10. Minneapolis	960	33.9	7	21	5	29

Bottom ten cities

City	Creativity index	Percentage of creative workers	Creative rank	High-tech rank	Innovation rank	Diversity rank
49. Memphis	530	24.8	47	48	42	41
48. Norfolk, VA	555	28.4	36	35	49	47
47. Las Vegas	561	18.5	49	42	47	5
46. Buffalo	609	28.9	33	40	27	49
45. Louisville	622	26.5	46	46	39	36
44. Grand Rapids	639	24.3	48	43	23	38
43. Oklahoma City	668	29.4	29	41	43	39
42. New Orleans	668	27.5	42	45	48	13
41. Greensboro	697	27.3	44	33	35	35
40. Providence	698	27.6	41	44	34	33

More and more businesses understand that a unique set of qualities are emerging to attract and retain creative class employees – everything from relaxed dress codes to flexible schedules and new work rules in the office. Most civic leaders however, have failed to understand that what is true for corporations is also true for cities and regions: places that succeed in attracting and retaining creative class people prosper; those that fail don't. Places are also valued for authenticity and uniqueness. Authenticity comes from several aspects of a community - historic buildings, established neighborhoods, a unique music scene or specific cultural attributes. St. Louis has a plethora of unique neighborhoods and it should be a magnet for young, talented adults.

Stuck in old paradigms of economic development, cities like Buffalo, New Orleans and Louisville struggled in the 1980s and 1990s to become the next "Silicon Somewhere" by building generic high-tech office parks or subsidizing professional sports teams. However, they lost members of the creative class and their economic dynamism to places like Austin, Boston, Washington, D.C. and Seattle – places more tolerant, diverse and open to creativity. Because of this migration of the creative class, a new social and economic geography is emerging in America, one that does not correspond to old categories like East Coast versus West Coast or Sunbelt versus Frostbelt. Rather, it is more similar to the class divisions that have separated Americans increasingly by income and neighborhood, but extended into the realm of city and region.

A key reason that St. Louis is attractive is that it has an incredible highway system that crosses the city. This should be leveraged for trade, both intrastate and interstate. In addition, the low cost of living index makes it attractive to the young and recently graduated. Specifically, St. Louis scores 90.4 on an index of 100 as a national average, and is actually a point below the Missouri average. This inexpensive housing, transportation and personal taxes make St. Louis competitive in affordability, and contributes to Missouri's ranking as the 8th most affordable state.

D. HOPE St. Louis

There were three consistent topics that came up in almost every interview:

- Lack of metrics to measure personnel and process performance
- Need for clear accountability
- Recidivism.

Metrics and accountability received major emphasis in Part A of this report. Recidivism was a much more difficult discussion when trying to identify solutions. It was also the topic that generated the most visible passion.

In our interviews both executives of City social service agencies and managers of community programs cited "lack of hope" as a major contributing factor of recidivism.

Individuals that believe they have no one to whom they can turn for help, that no one cares about them and who have no positive role models in their lives, have a high potential for finding themselves involved in crime, gangs or both, whether the person has already been arrested or is a person (especially a child) at risk.

The IBM team interviewed executives and employees of City agencies, judges, Ward leaders and many representatives of community service organizations. It is obvious that these people are working very hard to assist their constituents, about whom they care deeply. It is equally obvious that there is no one framework within which they are organized so that their respective efforts can be coordinated. The concept of working to establish this framework has emerged from the interviews and has been given the working title of: HOPE St. Louis. HOPE is an acronym for:

- Habilitation – provide people who have not had an opportunity to learn with the appropriate social skills and knowledge that will enable them to succeed.
- Opportunity – provide jobs at which they can learn responsible performance and work behaviors in a supportive environment.

- Prepare – provide assessments and appropriate remedial education that will enable the program participants to succeed in good paying jobs or to begin college.
- Education – provide access to training programs and college scholarship programs.

This recommendation challenges the City to establish a framework within which these service providers can organize to support their clients and each other. People who need help (of whatever kind) will have a place to find it.

HOPE St. Louis is a concept. In our interviews, the Smarter Cities St. Louis Team and the interviewees envisioned a partnership between the City and the community. Participant programs should supplement the services that the City can offer. Candidate programs should be willing to be first screened and then evaluated as well as share information. If accepted, programs would be continuously assessed to insure clients are well served and that they make progress. As clients accomplish important milestones, celebrate and encourage them to aspire to the next level. When they fall short, marshal the support to help them push themselves back on track.

HOPE St. Louis would support people referred by the courts, corrections, parole and probation and the City's Human Services, reinforcing the work of those organizations by sharing appropriate progress reports on their clients. Incorporating existing community programs such as the Neighborhood Accountability Boards and mentoring programs to assist in providing encouragement and positive role models would be an important component. These programs have existing relationships that are important to success. The number of ways HOPE St. Louis might be implemented is endless. The goal is to provide a framework in which the amazing number of both public and private resources and people passionate about helping members of their community in need, can organize so that the whole is greater than the sum of its parts and recidivism is thereby reduced.

E. Whole cost model

The concept of a “whole cost model”, for making decisions following the examination of all of the costs associated with an action or policy, would greatly help St. Louis. This concept could be used to make more effective fiscal decisions in light of the budgetary issues the City, like many other cities, faces. Many opportunities exist to make decisions based on this concept, for instance the decision to fund afterschool and pre-school programs. While public entities typically look to spend money on police or corrections to stop criminal behavior, spending on educational programs is ultimately cheaper and has other benefits outside of fiscal considerations for the City. A more educated populace lowers crime, increases property values and attracts businesses, all of which increase city revenues.

One major consideration within the city that has been mentioned repeatedly during our interviews is the dwindling mental health services being offered. Cuts to funds have left many of those with mental health issues no recourse to treatment, leading many of them to commit crime. Those who end up in the criminal justice system cost the city in both direct and indirect costs. They still require mental health treatment which is more expensive in prisons than outside, but they also cost the City in police, court and corrections costs. All of which add to dwarf the costs of preventative mental health treatments greatly.

11. Conclusion

Despite a unique institutional structure, the challenges facing the City of St. Louis are not unique. Other cities have implemented similar solutions. There are best practices within the extended team that can and should be replicated. St. Louis is well positioned to improve accountability and outcomes across the public safety extended team.

While we believe the themes and recommendations we have developed in the first section of this report are the right starting point for the city, on their own they will not tackle the root causes of crime. There is no short-term fix to the causes of crime – what is needed is long-term investment to be started now.

Given the reduction in revenue from various sources, the City of St. Louis must step up and apply to all the potential sources of federal investment. The City also needs to look for every opportunity to reduce spending in order to fund projects that will tackle the root causes of crime and recidivism. If the City can share risk and find willing commercial partners, it will also be able to reduce the up-front capital investment of some of these in order to start realizing savings.

This approach will allow it to focus on the core team and establish the right basis for measurement, accountability and information-sharing that can then be applied to the broader extended team. Establishing this accountability and transparency at the heart of the public safety team will help encourage the wider set of stakeholders and the community to participate and buy into the shared vision.

“The Smarter Cities Challenge has been a great experience for St. Louis and for me as mayor. So I would recommend very strongly that any city that is looking at trying to improve itself, should take a look at the Smarter Cities Challenge. Just looking at yourself, pulling people together to address a difficult issue has been beneficial by itself, and of course, after seeing the recommendations, I’m very pleased.”

—Mayor Francis G. Slay



12. Appendix

A. Key performance indicators (KPI)

Mayoral			
F1 – Efficient use of city funds	F2 – Effective use of city assets	E2 – Instill accountability and responsibility	E4 – Develop solid infrastructure model
Actual to budget/plan	Maintain and improve bond rating	Percentage of employee with performance tied to compensation	Facility condition index
FY YTD expense gain	Expand tax base	Legal measure	Population to infrastructure investment
Capital expenses	Percentage of tax collected of tax base	Fraud	Proactive/reactive expenses
Fraud reduction	Facility condition index	Complaint backlog	Percentage of assets past useful life
Legal	Repair vs. expansion	IT touches	Technology survey
Percentage of financial ratios vs. peer group	Preventive vs. reactive expense		Percentage change in technology investment
Risk controls			

Police			
F2 – Effective use of city assets	F3 – Comply with federal/state grant funding requirements	E1 – Leverage new technology	E2 – Provide leading edge police training
Number of hours of “downtime” of police vehicles	Increase revenue from federal programs	Investments in “green” assets and technologies	Number of course hours of advanced police training received
	Incur no financial or other penalties as a result of federal performance audits	Investments in new vehicle and communications equipments	Percentage of force receiving advanced police training over last 30 days
		Percentage of staff trained in new technologies	Convictions rate for cases placed in front of the courts
		Percentage of police cars equipped with new technology such as computers, wireless networking, cameras, night vision, and info searching tools	Investigations completed within 30 days

Police			
E3 – Create stakeholder culture	E4 – Retain and attract great employees	I1 – Enhance communication	I2 – Improve officer safety
Number of volunteers in citizen patrols	Percentage of key positions with succession planning	Number of public events	Number of preventable on-duty accidents per mile driven (rolling seven days)
Number of courtesy complaints in calls for service over last week	Percentage of employees in skills enhancement programs within six months	Number of TV, radio and other media events	Percentage of force fully trained (this month, last month)
Households participating in “Neighborhood Watch” programs	Percentage of managers performing		Percentage of force fully equipped (this week, last week)
	Percentage of on time reviews		
	Percentage of uniformed police force that call in sick for shift (daily)		
	Excellence/citation award nominations		
	Employee satisfaction		

Police			
Enforce the law	Improve responsiveness	Create a secure city	Increase public awareness
Number of citations for non-criminal code offences	Percentage of calls answered in 30 seconds	Citizen safety survey	Number of hours of non-policing work in building community relations last 30 days
Total number of police/community interactions	Percentage of calls responded to within city guidelines	Violent crime (this week, last week, last year)	Number of citizens reached by public awareness campaigns last 30 days
Number of police/community interactions that were not a result of 911 call	Average response time to non-emergency calls (rolling seven days)	Non-violent crime (this week, last week, last year)	Number of public relations contacts with media
	Number of use of force complaints (rolling seven days, 30 days)	Number of arrests	Number of hours of paid non-policing work in building community relations last 30 days (e.g. security at parade paid by third-party)
	Number of hours on-duty uniformed officers are performing “off-beat” administrative work	Conviction rate	

Circuit Attorney			
Enforce the law	Improve responsiveness	Decision making	Operational efficiency
Conviction rate	Issue rate	Number of cases with cover sheet	Number of MPD officers trained on Circuit Attorney policies
	Time between arrest and filing of charges		Time for crime lab reports to Attorneys
	Number of hours on-duty uniformed officers are in court		

Courts			
Types of offenses	Service efficiency	Decision making	Operational efficiency
Number of felonies	Time to disposition	Percentage of cases change in disposition	Financial penalties payment rate
Number of misdemeanors	Clearance rate	Number of dip in events where wrong person is released from the custody	Court staff efficiency level
	Percentage of pending cases	Percentage of dip in events where wrong person is released from the custody	Percentage reduction in time taken to do criminal history background check
	Percentage of trial date certainty	Percentage dip in recidivism rate	Average case processing time
	Percentage of fail to appear		

Corrections			
Offender programs	Offender behavior	Decision making	Operational efficiency
Percentage increase in successful GED completion	Number of violent incidents in institutions	Time to remove offenders from threatening situations while in incarceration	Corrections staff efficiency level
Percentage of identified drug population in drug treatment programs	Number of non-violent incidents in institutions	Time to isolate repeat offenders while in incarceration	Cost per inmate for food
Percentage change in population with high-risk health issues	Percentage change in repeat offenses while incarcerated		Cost per inmate for health care
	Number of incarcerated offenders who fail drug tests		Cost per inmate for inmate transportation

Probation			
Clients	Client programs	Decision making	Operational efficiency
Number of clients on probation	Number of clients employed	Percentage re-incarcerated	Number of probation officers
Number of clients on electronic monitoring	Percentage change in client employment	Percentage where probation is reduced	Number of cases per probation officer
Percentage of probation violations	Number of clients seeking social service and/or health services		Average time to respond to client contact
Rate of recidivism	Percentage in GED completion or college enrollment		Recidivism rate per probation officer
Percentage of fail to appear at scheduled meetings			

Parole			
Clients	Client programs	Decision making	Operational efficiency
Number of clients on parole	Number of clients employed	Percentage re-incarcerated	Number of parole officers
Percentage of parole violations	Percentage change in client employment	Percentage where parole is reduced	Number of cases per parole officer
Rate of recidivism	Number of clients seeking social service and/or health services		Average time to respond to client contact
Percentage of fail to appear at scheduled meetings	Percentage in GED completion or college enrollment		Recidivism rate per parole officer
Number of homeless clients			

K12

Efficient use of city funds	Effective use of city assets	Leverage new technology	Improve job related knowledge and skills for all employees
Actual to plan	Facility condition index	IT investment efficiency	Percentage of teachers attending seminars within last six months
FY YTD expense gain	Educational quality index	Percentage of staff with technology training in last six months	Percentage of staff with technology training in last six months
Spend per student	Classroom utilization rate	Classrooms with Internet access	Hours of diversity training taken over last 30 days
Percentage of financial ratios vs. peer group	Population to capacity	Computers per student	Percentage of staff taking a second language
Spend efficiency index	Fleet	Percentage of IT investment for new technology	
Bond rating	Percentage of assets past useful life		
Admin expense per student	Number substitute hours/plan		
Classroom expense per students			
Program cost per student			

K12

Create stakeholder culture	Retain and attract great employees	Build teacher quality	Make schools a positive destination
Percentage of parents involved in PTO	Absenteeism – student	Percentage of teachers attending seminars within last six months	Hours of diversity training taken over last 30 days
Number of parent volunteer hours	Employee satisfaction	Percentage of teachers tracking towards additional qualifications	Hours of non-core learning available
Stakeholder touches	Absenteeism – teacher	Percentage of core classes taught by high performing teachers	Hours of non-core learning taken
	Student tardiness	Percentage of teachers on target	Hours of community work
	Number of substitute hours/plan	Percentage of AP hours taught by substitute	After school participation
		Percentage of class hours taught by substitute	Percentage of students participating in field trips

K12

Broaden educational opportunities	Improve educational quality	Create productive citizens	Improve student confidence
Resource hours spent on detention	Classroom supplies spend to budget	Percentage of students with passing grades	Percentage of students tracking towards additional education
Safe school audit	Test scores	Number of unexcused absences	Dropout rate
Tardiness	Drop out rate	Teenage crime rates	Absenteeism rates
Unruly conduct	Unexcused absence	Parent teacher meetings in regards to educational performance	
Health incidents	Student absenteeism		
Pregnancy rates	Student population gain		
Teenage crime rates	Students identified as "in-need"		
	Students in need program spend		
	Staff and principal changes		

B. Additional resources

Online demo

IBM Business Analytics for Crime Prediction and Prevention

Learn how IBM is helping law enforcement agencies capture, predict and act on crime information.

White paper

Government Analytics

Learn how IBM Business Analytics are helping government agencies worldwide set goals, drive accountability and improve outcomes.

White paper

Making Critical Connections: Predictive Analytics in Government

Predictive analytics can help your agency make critical connections by combining advanced analytical techniques with decision-support capabilities.

Customer case study

Nucleus Research ROI Case Study – Memphis Police Dept

Memphis Police Department uses IBM SPSS predictive analytics software to improve its overall operations, enabling it to reduce crime considerably without a proportional increase in staff while expanding its territory.

White paper

Crime prediction and prevention

Analyze crime data and predict trends for better public safety with Cognos® and SPSS.

Analyst report

Intelligence-Led Policing Evolves

Read this Gartner report for a six step process outlining how law enforcement agencies can use analytics to better prevent crime and terrorism.

White paper

Strategic workforce management using predictive analytics

How government agencies can reduce costs, increase productivity and improve services.

Brief

Predictive Analytics in Human Capital Management

Although there are differences in services government agencies provide and the people they serve, a common concern is the need to make the best use of available resources.

White paper

IBM SPSS predictive analytics in fusion centers

Turning text and data into insight and insight into action.

Evaluation guide

Municipal Performance Scorecard Blueprint

Learn how linking processes, metrics, best practices and technology can help improve municipal government management from the town, city or county level down to agency, department and sub-department levels in this guide.

White paper

City of Albuquerque Success Story

As part of its eGovernment and public safety initiatives, the City turned to IBM Cognos Series 7.

Case study

Success in social services

Find out how three agencies are using analytics to save time and money, make more focused decisions and weave a tighter social safety net.

Demo

IBM Business Analytics for Smarter Cities

Learn how Cognos and SPSS are helping agencies be more transparent to taxpayers and provide better services and outcomes to citizens.

C. Customer Case Studies

- Alameda County Social Services Agency
- The Mecklenburg-Vorpommern State Police
- Miami-Dade County
- Clark County Family Services Department
- The School District of Palm Beach County
- Edmonton Police Service
- The City of Albuquerque
- San Francisco Public Utilities Commission
- The City of Coquitlam
- NYPD



St. Joseph
Kansas
City

Kansas
City

St. Louis

Springfield

ANSAS

Wichita

MISSOURI

STEUBEN

Lake of the Ozarks

Hutchinson

Pratt

Wintfield

Newton

El Dorado

McPherson

Salina

Manhattan

Junction City

Bands

Lawrence

Ottawa

Emporia

Chanute

Parsons

Independence

Carthage

Pittsburg

Nevada

Warrensburg

Sedalia

Jefferson City

Rolla

St. Charles

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East

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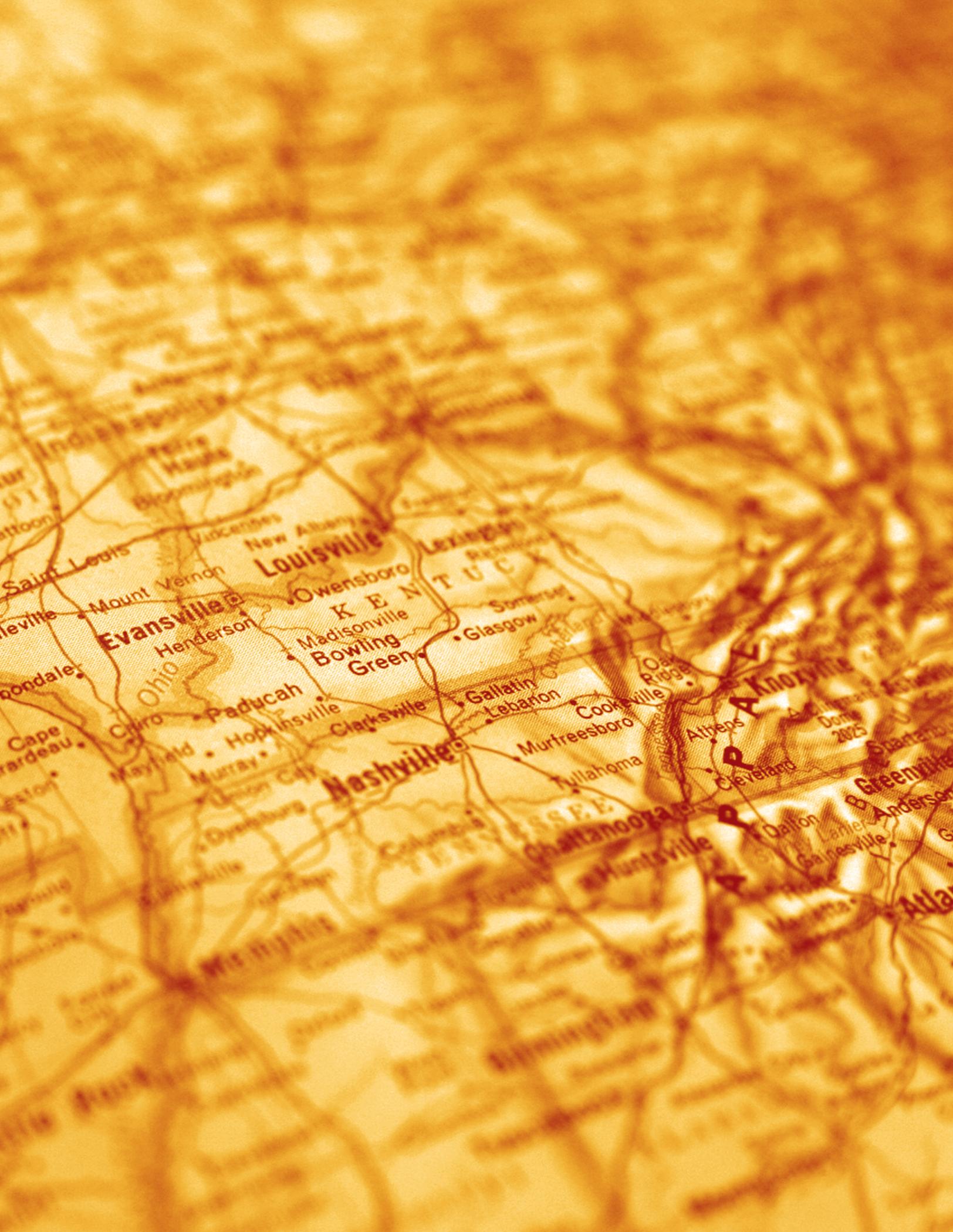
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