The strategic alliance between IBM and Infor creates joint solutions to:

- Improve citizen services

- Integrate processes and systems

- Increase the efficiency of resource management and allocation

- Maximize revenue and capital investment

- Improve regulatory compliance

Cities: a growing challenge

With more than half of the world's population already living in cities, and with the urban population projected to grow by more than one billion people between 2015 and 2030,[1] the race is on to improve our cities.

The future prosperity of nations is increasingly dependent on taming the complex systems-within-systems that are modern cities. The key goals include improving services while cutting costs, and enabling sustainable growth while reducing the overall environmental footprint.

At the heart of the IBM® Smarter Cities® movement is the desire to create citizen-centric infrastructures and services that support economic growth while improving every citizen's quality of life. Thanks to the strong strategic alliance between IBM and Infor, cities can now access an integrated set of solutions to accelerate the process of becoming smarter.

IBM Intelligent Operations Center for Smarter Cities
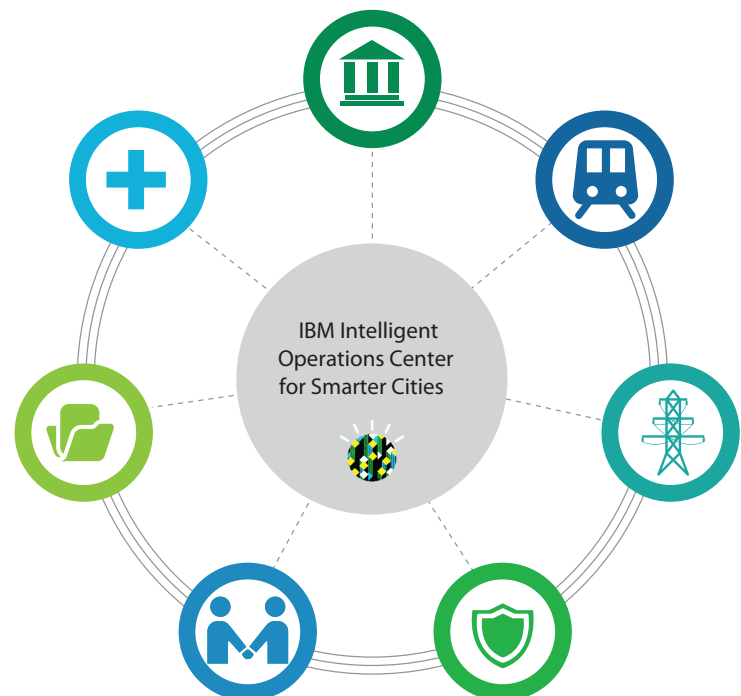
In combination, the IBM and Infor solutions can deliver dramatic improvements in every aspect of city life, from intelligent traffic management to smart buildings, from intelligent power grids to integrated public safety systems, and from smarter social services and health care to improved planning and maintenance.

This solution brief outlines the main IBM and Infor offerings in the smarter city space, providing real-world examples of how these solutions are already transforming cities the world over: improving citizen services, experiences and outcomes while lowering costs and increasing sustainability. It also includes a real-life case study on a large city in the United States, where an integrated permitting solution from IBM and Infor is improving citizen satisfaction and cutting internal administration.

Becoming smarter

The growing pace of urbanization is putting a considerable strain on existing cities. Even the relatively small number of truly 'planned' cities (the majority having grown organically) will increasingly struggle to match their infrastructure and management systems to the growing needs of their populations. As more people flood into cities for the economic opportunities they offer, the typical outcomes will include urban sprawl, traffic gridlock, increased pollution and growing social inequalities.

IBM and Infor believe that it doesn't need to be this way. Already, forward-thinking cities are taking the initiative to use data to make smarter decisions about how to run their services and plan their infrastructure. Recent advances in instrumentation, data management and analytics make it possible for cities to measure practically every event across every aspect of their physical and virtual footprint, then build sophisticated models that enable them to predict the impact of future events, determine the best course of action, and start managing their cities more intelligently using sophisticated public-sector-specific tools.

Smarter city administrations are gathering information - from administrative systems, from citizens, and from sensors embedded in both static and mobile assets - to build up a phenomenally detailed real-time picture of how their cities' core systems interact. By building complex, data-rich models that take into account the economy, education, public safety, healthcare, transportation infrastructure, public transit networks, utilities and government services, cities can uncover causal relationships between events, spot patterns and trends, and perform sophisticated 'what-if' analysis to predict the impact of future events.

The art of the possible

The smarter city of the future is a system of tightly integrated and efficient systems, built on real-time information and driven by sophisticated analytical tools. By packing the city with smart technologies for gathering, processing and deploying information, government administrations can serve citizens better and at lower per-capita cost.

Best of all, this vision is already becoming a reality. In Lancaster, CA, the police department is using a predictive analytics system to identify trends and prioritize resources accordingly. The result has been a 42-percent reduction in serious crime.[2]

In Rio de Janeiro, Brazil, a single control center integrates information and processes from 30 different agencies, providing a comprehensive view of the city's functional health, enabling improved reaction to emergency incidents.[3]

In Zhenjiang, China, city officials are centralizing the control of the bus network to enable real-time traffic updates and predictive routing, reducing traffic congestion.[4] In Montpellier, France, an urban laboratory will integrate information from local agencies, business and residents across the district to improve the efficiency of transportation, water management and emergency management.[5] And in a major city in the United States, a sophisticated permitting

solution is enhancing coordination and collaboration between city departments by integrating data from diverse sources and providing real-time analytics tools to generate key performance indicators (KPIs). For further information, please see the mini case study at the end of this solution brief.

Armed with the right data, there is practically no limit to what we can achieve in our cities: intelligent traffic management that slashes commuting time and pollution; improved planning for city maintenance, with coordination between different departments to minimize the impact on citizens; intelligent public safety services that prioritize the use of limited resources to maximize the overall effectiveness; smarter buildings that minimize energy use and maximize usable space; better urban planning that drives economic growth without creating environmental hot-spots; smart grid technology that keeps the city powered with economically and environmentally viable electricity; improved social services that respond rapidly and effectively to emerging issues.

IBM has made the smarter cities topic one of the cornerstones of its smarter planet initiative, in recognition of the growing importance of cities to the majority of the world's population.

Our involvement in hundreds of major urban regeneration projects around the globe contributes to our deep and current knowledge of the major challenges that cities face.

IBM and Infor

In an alliance that spans 30 years, IBM and Infor have together delivered business-focused solutions to 19,000 shared customers in 164 countries. This accounts for more than 25 percent of Infor solutions sold worldwide, meaning that a substantial proportion of Infor users today rely on a solid infrastructure of IBM hardware and middleware to support their applications. Joint testing and benchmarking ensure that the Infor solutions run on a broad range of IBM platforms, enabling businesses to select the most appropriate integrated solution for their specific needs. Equally, the Infor

and IBM professional services teams work closely together on business process alignment, project management and systems integration, to help shared customers achieve the best outcomes.

Drawing on our strategic alliance, IBM and Infor can help cities accelerate their transformation by providing services, software and infrastructure for everything from a small pilot project through to a full regeneration program. With the combination of IBM Intelligent Operations Center and Infor Public Sector solutions, cities can:

- Leverage information across all agencies and departments to power smarter decisions
- Anticipate challenges to minimize the impact of disruptions to city services and operations
- Coordinate cross-agency resources to respond to emerging issues rapidly and effectively
- Gauge citizen sentiment from blogs and social media streams, and facilitate interaction with local governments
- Create 311 services for citizens to report issues through mobile voice and SMS channels.

IBM solutions for smarter cities

IBM Intelligent Operations Center for Smarter Cities provides an intuitive executive dashboard designed to give city administrators and leaders fast insight into all aspects of the city. By integrating data from all agencies within the city and combining it with data sourced from citizens, Intelligent Operations Center offers a 360-degree view of all current activities, with powerful drill-down views into each underlying agency. For example, city administrators and leaders can use the technology to gain a general overview of the 'health' of the systems that make up their city, then zoom down to a specific emerging challenge, see what impact it is having on other services, and plan a coordinated response that may involve multiple agencies.

Intelligent Operations Center delivers the ability to:

- Transform raw data from sensors and databases into actionable insights
- Monitor activities and events across the city in real time
- Gather and use feedback from citizens
- Gain near-real-time KPIs on city services, personnel, programs and resources
- Manage incident-response across multiple city agencies and assets
- Facilitate real-time collaboration between city departments and agencies
- Streamline the management of shared resources and assets
- Provide tailored views and functionality for different types of users, from senior management to front-line operators.

With integrated data visualization – including the ability to superimpose live data on digital maps of the city – real-time collaboration, and deep analytics capabilities, Intelligent Operations Center for Smarter Cities helps cities optimize individual departments while facilitating seamless cross-department coordination.

High-level heat maps enable managers to pinpoint critical issues in a geospatial context, allowing them to respond rapidly and intelligently to emerging challenges.

Mobile access ensures that the front-line service delivery teams can see the appropriate information and understand the broader context of the work they are undertaking.

Infor solutions for smarter cities

Infor Public Sector solutions are designed to meet the needs of state and local governments, and municipal authorities. Leveraging more than 25 years of Infor expertise in the public sector, these solutions are deployed in more than 1,000 different organizations worldwide.

Infor Public Sector solutions provide a single platform for optimizing assets and service delivery across a broad range of government and city topics, from community development to permitting, from public transit to billing, and from utilities to city asset management.

With an understanding that the public sector must constantly balance growing citizen expectations with shrinking budgets, Infor aims to provide tools that enable cities to do more with less, finding creative ways to operate more efficiently and cost-effectively.

Experience gained from customer implementations worldwide feeds back into product development at Infor, ensuring that Infor Public Sector solutions remain closely aligned to changing requirements.

Using Infor solutions, cities can:

- Implement more efficient, effective, and consistent decision-making at the customer-interaction level, achieving "first-call resolution"
- Personalize and configure screens, processes, and dashboards to meet each agency's needs without custom programming
- Provide employees with the tools to perform their daily tasks, backed by rich knowledge bases
- Deploy true enterprise solutions that are modular and scalable across all departments, combining departmental independence with seamless inter-departmental communication.
- Use flexible configuration tools to create tailored business processes, workflows and escalation paths
- Enable citizens, businesses and contractors to communicate with city personnel via the web
- Keep customers and stakeholders informed about critical steps in all processes
- Take advantage of integrated GIS capabilities to leverage and enrich existing geo-spatial data.

Major US city: an IBM and Infor solution in action

For the many cities that are facing tight budgetary constraints today, tackling a major, cross-agency transformation project is an understandably daunting prospect. However, IBM and Infor solutions are designed to be modular, enabling cities to start with a small project that delivers rapid return on investment, then gradually build towards complete transformation through additional low-cost, low-risk projects.

For example, a major city in the United States has successfully optimized its permitting processes by deploying a combination of IBM and Infor technologies and services.

The city had three key goals:

- To improve permitting and licensing across the enterprise
- To accelerate permit requests concerning special events, public works and transportation
- To cut the time taken for residents and small businesses to get permits from up to five weeks to a few days.

Working with IBM Global Business Services, this major city in the United States built a sophisticated permitting solution based on IBM Intelligent Operations Center and Infor's Hansen CDR (Community Development and Regulation) and Citizen Relationship Management software. The solution improves coordination and collaboration between city departments by integrating data from diverse sources and providing real-time analytics tools to generate KPIs.

Since deploying the IBM and Infor permitting solution, the city has seen a number of important benefits. It can now more rapidly and efficiently detect and mitigate issues and conflicts in the permitting process, increasing the overall success rate. Equally, stronger and more effective coordination between agencies is helping to shorten permitting cycle times, driving up citizen satisfaction levels.

Using this targeted solution, the city is expecting to improve permitting and license revenue collection, and to increase overall revenues by removing existing barriers to permitting. Advanced geo-spatial analytics enable planners to map potential permitting conflicts and violations, for example by analyzing whether traffic capacity will support the expected requirements of special events, and by tracking correlations between noise disturbance levels and permitting work hours.

Take the first step

As cities step up their efforts to provide better and more efficient services to citizens at lower cost, technology will play a key role in their success. Administrations that take the lead in building smarter, citizen-centric infrastructure and services will also likely benefit from greater economic growth, as they will become more attractive destinations for an increasingly mobile population to live and work in.

Thanks to the strong strategic alliance between IBM and Infor, cities can now access an integrated set of solutions to accelerate the process of becoming smarter. Crucially, they can do so in a series of small, low-cost, low-risk steps – for example, starting with a proven solution for permitting, as one major city in the United States did.

For more information on how the strategic alliance between IBM and Infor can help your city improve citizen services, enhance business-process integration and improve resource allocation, please visit **ibm.com**/infor

To learn more about how IBM is helping decision-makers in cities around the world to gain deeper insights into civic operations, please visit **ibm.com**/ioc

1 Source data from http://esa.un.org/unup

2 Source: http://www-01.ibm.com/software/success/cssdb.nsf/CS/SANS-92FRHA?OpenDocument&Site=default&cty=en_us

3 Source: PUB03003USEN-00, IBM Smarter Cities Point of View, "Smarter, More Competitive Cities"

4 Source: http://www.youtube.com/watch?v=vicqBmAGl80

5 Source: http://www-03.ibm.com/press/us/en/pressrelease/40498.wss