

IBM Business Connect

Business Without Limits.

July 23 | Vineyard Hotel and Spa, Cape Town

IBM Delivering Smarter Cities

Ahmed Simjee

ahmeds@za.ibm.com



<https://www.facebook.com/IBMSouthAfrica/events>



#IBMBC2013



Smarter Government: a response to global demand



ACCELERATING GLOBALIZATION

Countries and societies are becoming more economically interdependent across social, political and cultural boundaries, as illustrated by current economic conditions.



CHANGING DEMOGRAPHICS

Median ages are rising in the developed countries of Italy, Germany and Japan, but dropping in developing ones such as India.



EVOLVING SOCIETAL RELATIONSHIPS

Today, governments are expected to deliver results and value through secure, private services that are available anywhere at any time.



RISING ENVIRONMENTAL CONCERNS

Societies and governments are becoming more attuned to what the earth can provide and what it can tolerate.



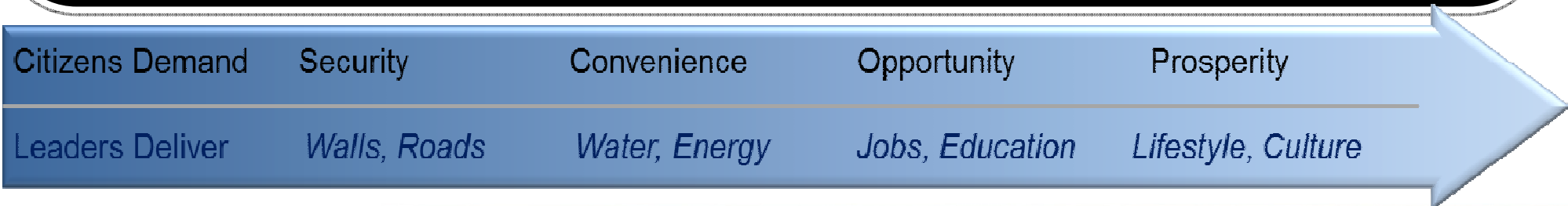
EXPANDING IMPACT OF TECHNOLOGY

The adoption of the Internet is remaking the landscapes of business, healthcare and government.



GROWING THREATS TO SOCIAL STABILITY AND ORDER

From terrorism to armed conflict to pandemics to natural disasters, the character of threats is changing.



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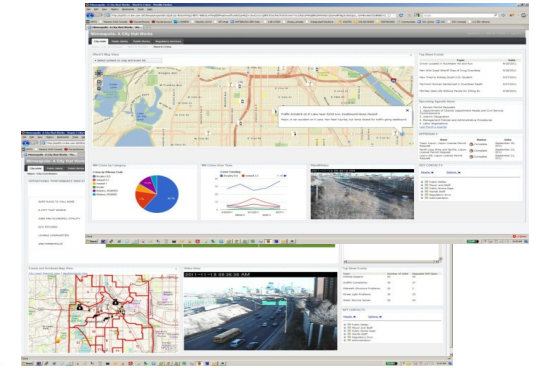
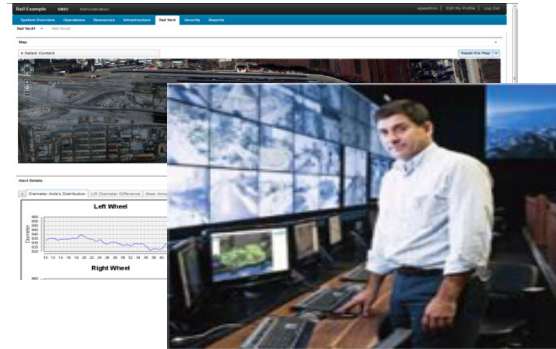
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Agenda



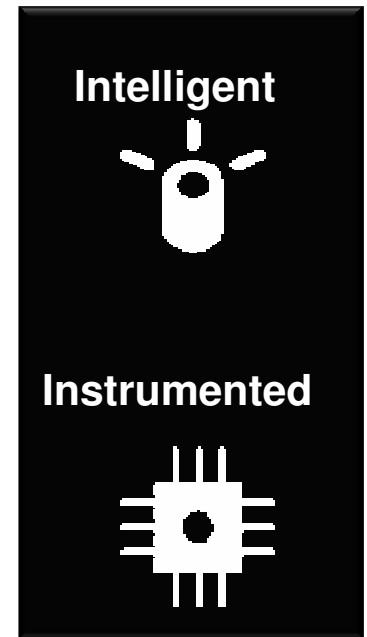
What is a Smarter City?



What does it look like Public Safety and Security, Water, Transport, City Planning and Operations, Smarter Citizen Services

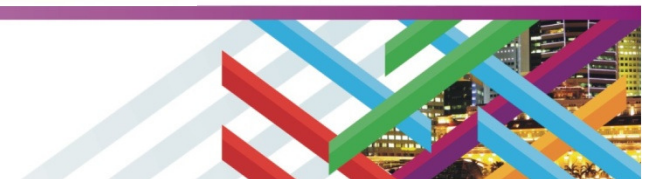


Where do I start and how do I get there?



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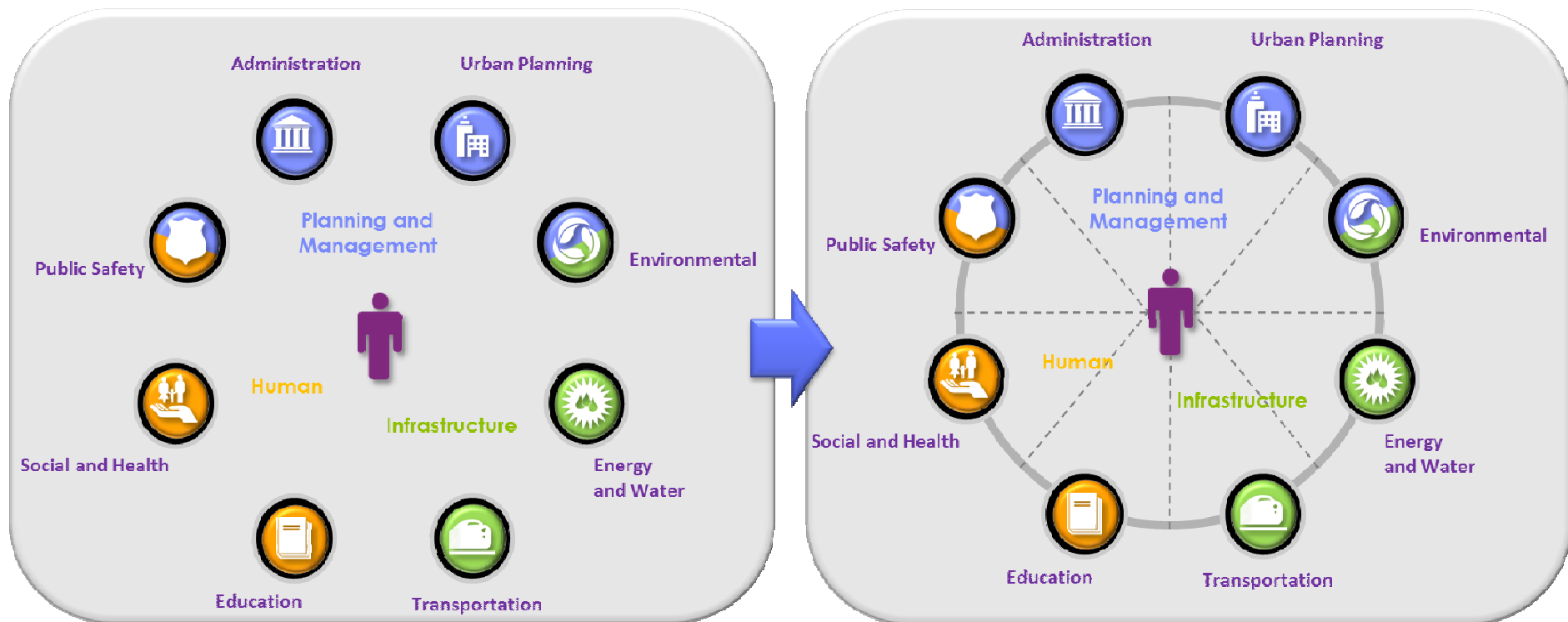


Smarter Government



..... one that *integrates technology* into a strategic approach to sustainability, citizen well-being, and economic development but also stressing the importance of integration and interaction across multiple domains.

Pike Research



21st Century Government: Integrated across Multiple Domains

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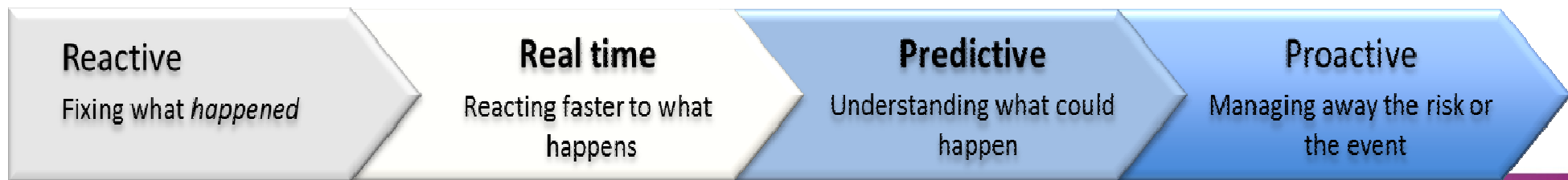


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Pike Research

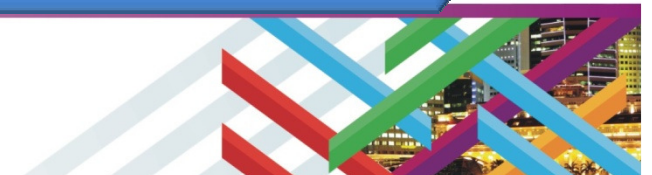


has moved from... Reactive to Predictive to Proactive: Applying advanced analytics and industry expertise at all levels of the organization to more precisely predict - and continuously act on - risks and *opportunities*.

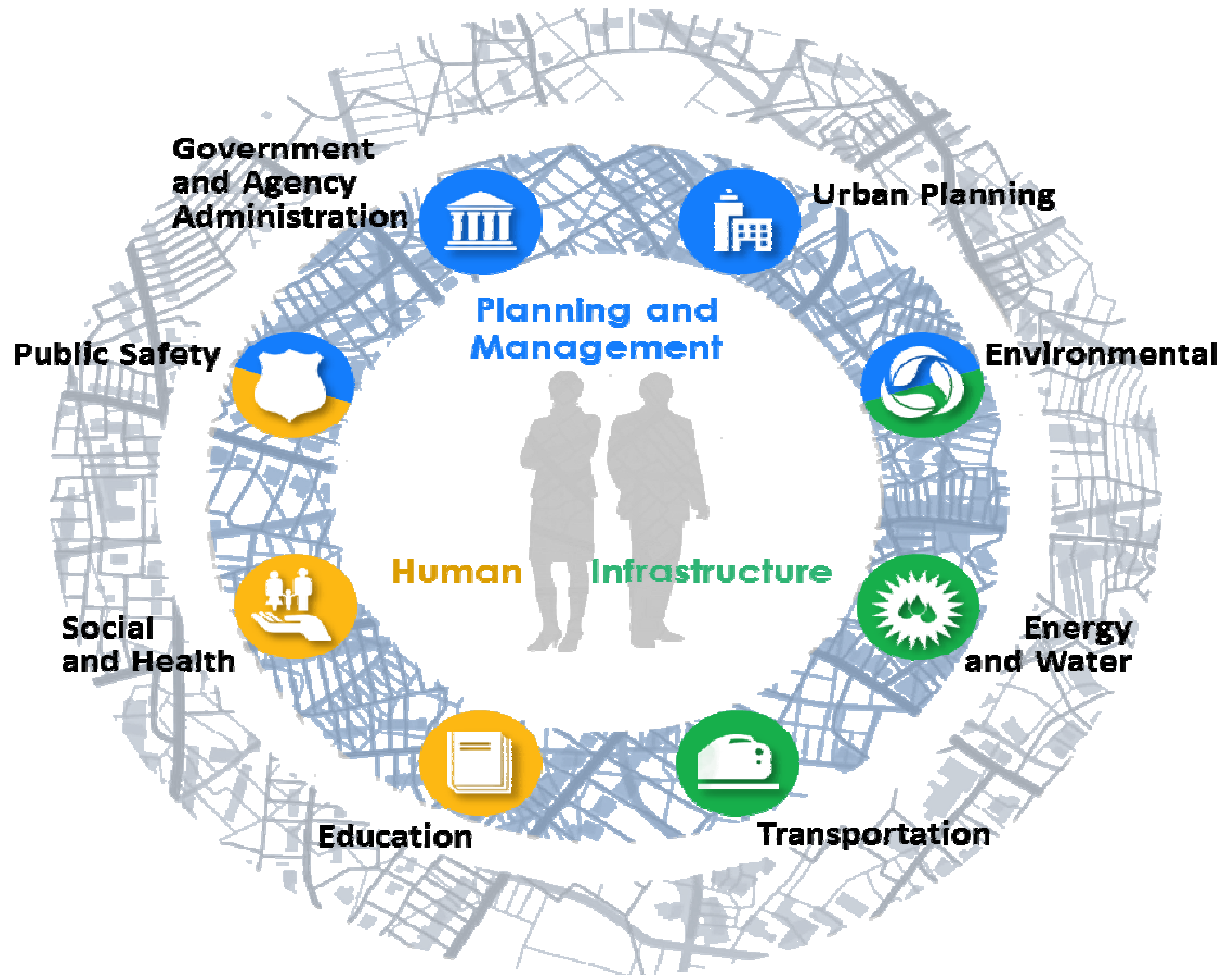


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Smarter: leveraging the information advantage



Leveraging

information to make better decisions

Engaging People

to co-define (even co-produce) “what’s important”

Coordinating

resources and processes to operate effectively

Anticipating

problems to resolve them proactively and manage risk

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Intelligent Transport

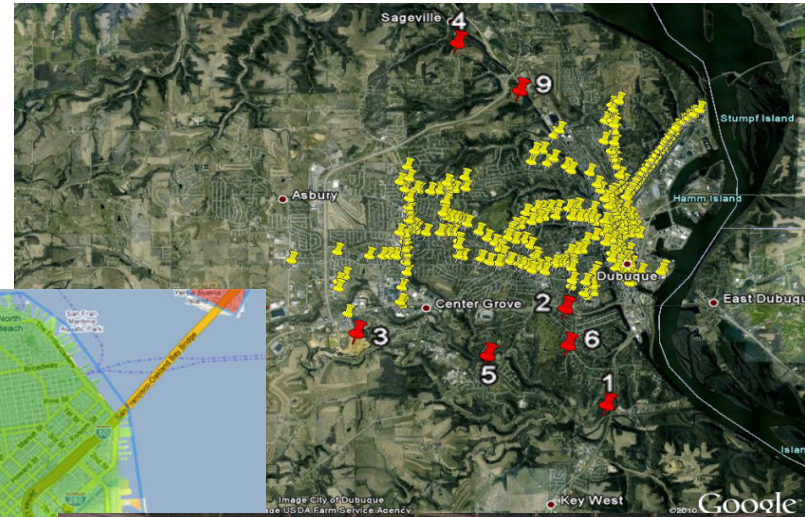


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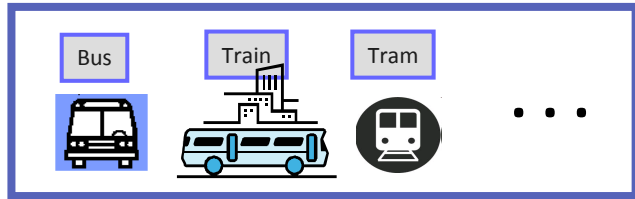
Example: Leveraging Information: Intelligent Transport



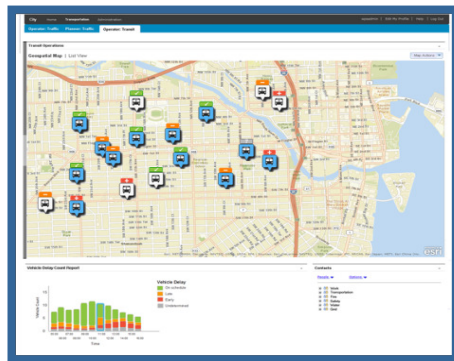
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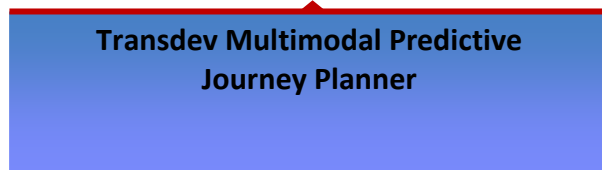
Smarter Transit Operations



Current vehicle locations are captured using one or more vendor options that use GPS/GPRS technologies



IBM Intelligent Transportation (IIT) collects location & time table data, analyzes it and real-time visibility and vehicle arrival prediction inferences



journey planner consumes traffic and transit prediction from IIT and generates commuter journey plans

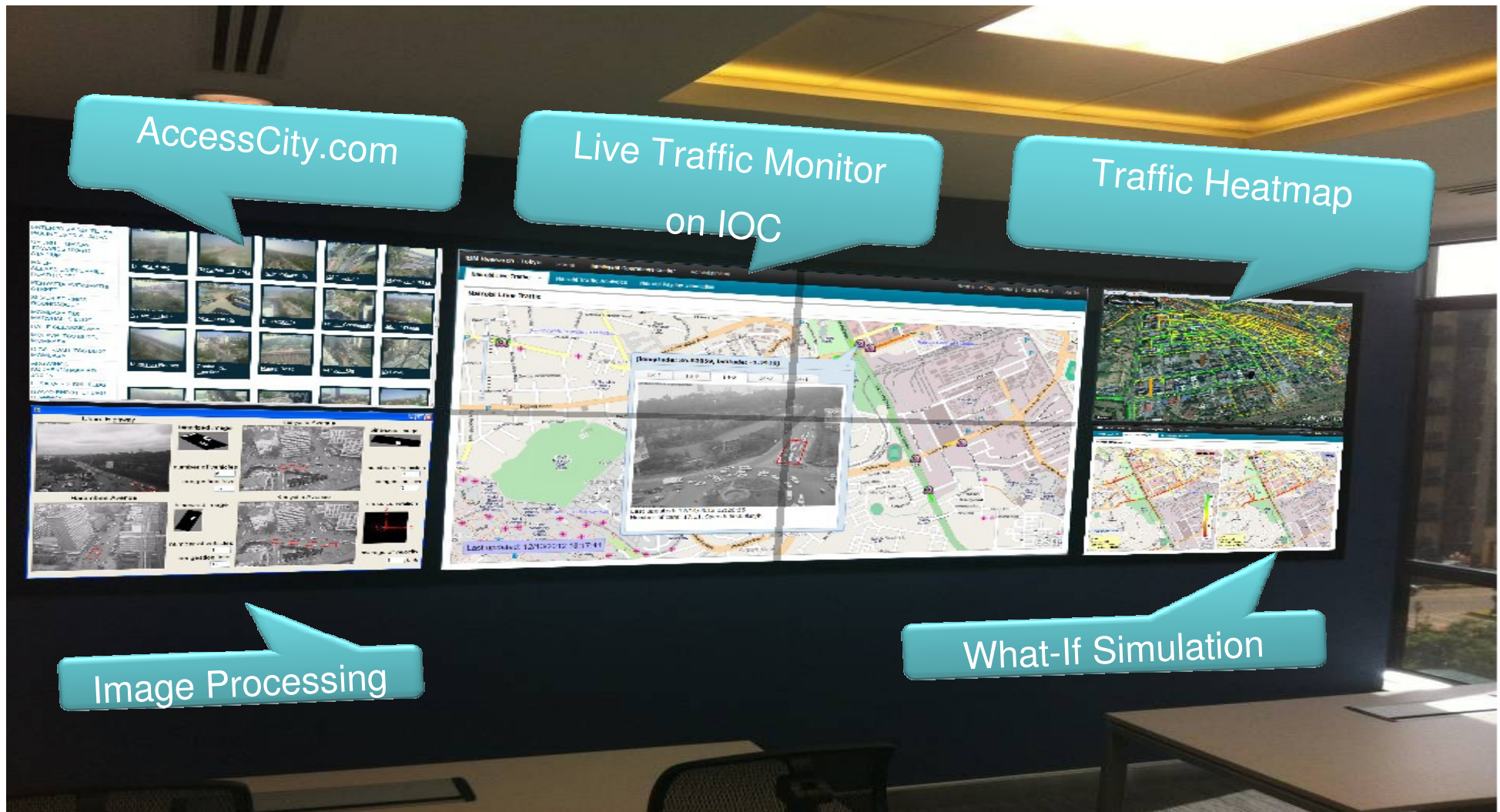


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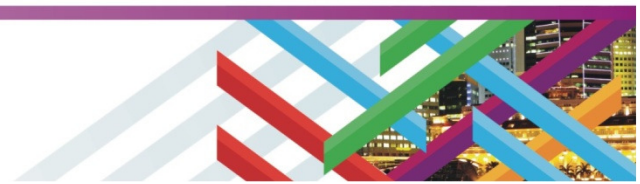


Example - Traffic Control Centre



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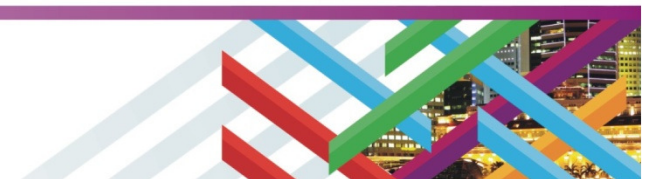


Intelligent Transportation – Heat Maps (from Telco Sources)



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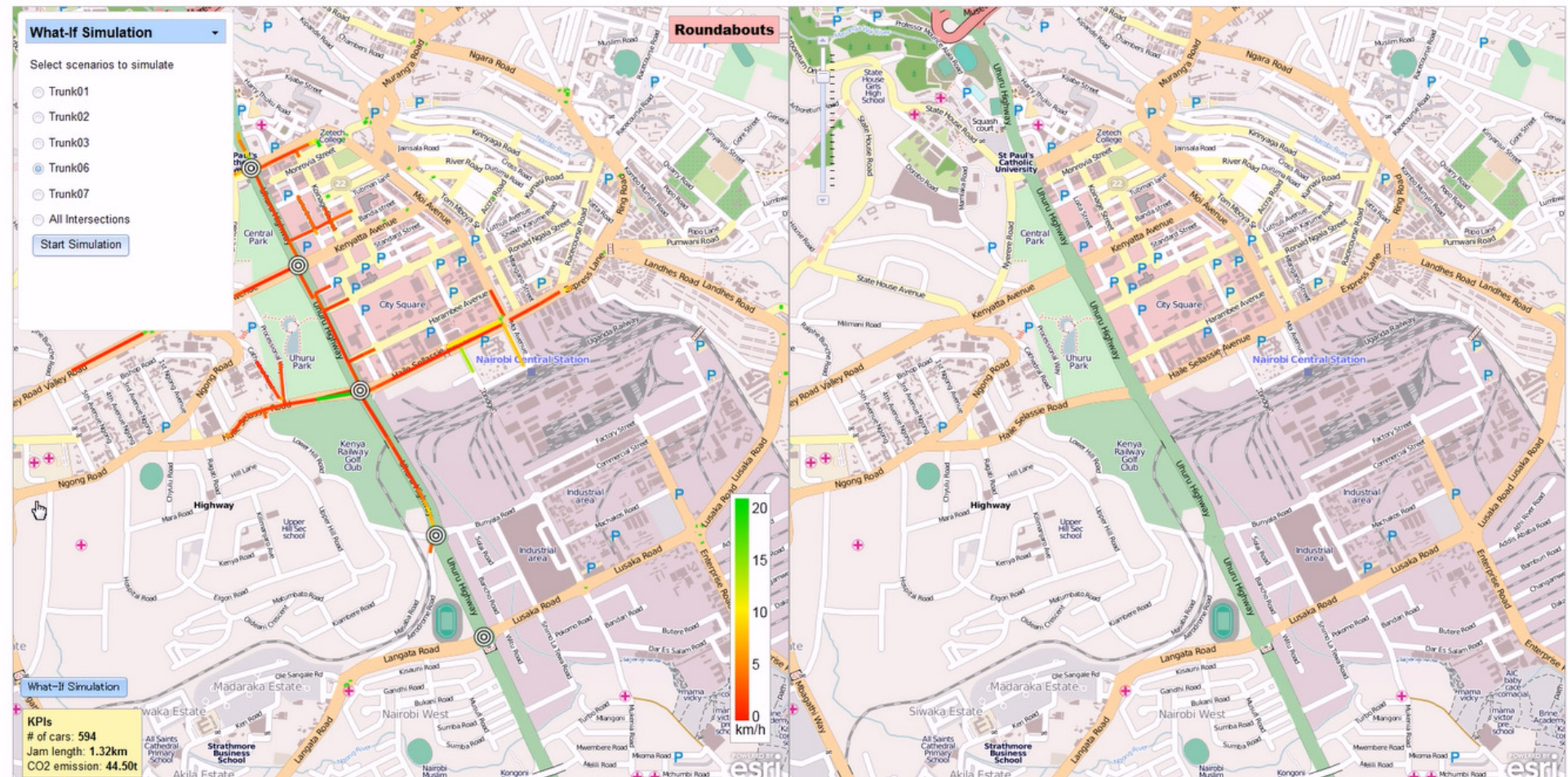


Intelligent Transportation – What if scenarios



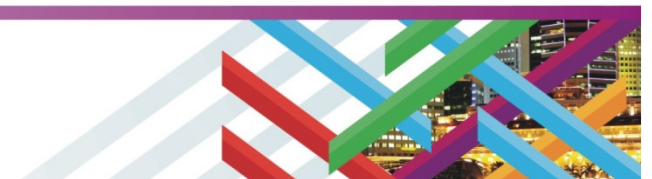
Nairobi Live Traffic | Nairobi Traffic Analytics | Nairobi Payday Simulation

Nairobi Traffic Analytics



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Smarter Water

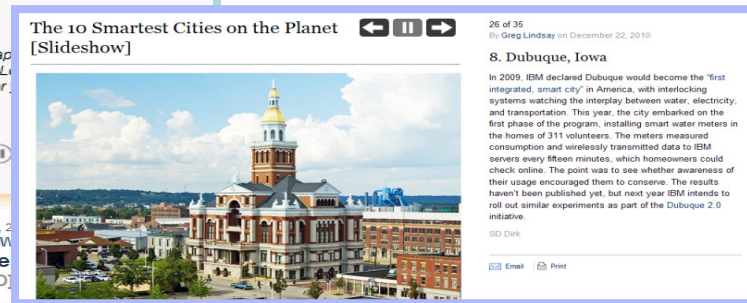


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Engaging People: Dubuque Smarter City Living Laboratory



June 18th, 2010
PBS NEWS HOUR
Profile [VIDEO]

Blueprint America — with PBS NewsHour — looks at an old factory town in the Midwest that's using stimulus dollars to not just put people back to work but to also make the city work again.



Producers Cameron Hickey and Tom McNamara, editor David Kreger and special correspondent Miles O'Brien for *Blueprint America*

JIM LEHRER: Next: another of our Blueprint America reports on infrastructure. Tonight: A factory town bets on a green future. Our story was produced with WNET New York. The reporter is special correspondent Miles O'Brien.

YouTube <http://www.youtube.com/watch?v=mBSVITkiBw>

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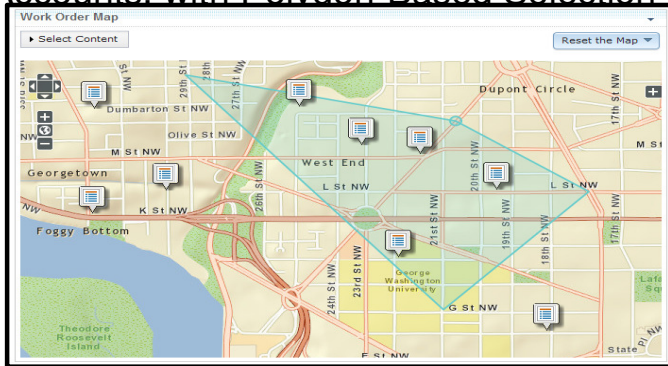
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Intelligent Operations for Water – Managing this scarce resource



Geospatial Insight on Work Orders & Accounts, with Polygon-Based Selection



Work Order	Asset type	Work type	Problem	Priority
<input type="checkbox"/> 09-41696	Catch basins	Investigation - Non-emergency	Clog	1
<input type="checkbox"/> 09-45179	Catch basins	Maintenance - Emergency	Catch basin - Loose	1
<input type="checkbox"/> 09-45182	Catch basins	Maintenance - Emergency	Broken	1

Synchronized Map, List, and Report Views

Analytics for Optimized Scheduling

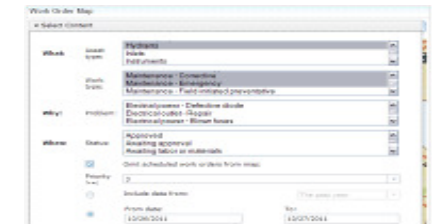
Specify the candidate work orders for scheduling

- All work orders
Generate an optimized schedule from any unscheduled work
- Selected work orders first, then other work orders
Treat unscheduled work items that are checked as required
Fill any gaps with other unscheduled work orders to produce
- Selected only
Generate a schedule using only the selected work orders

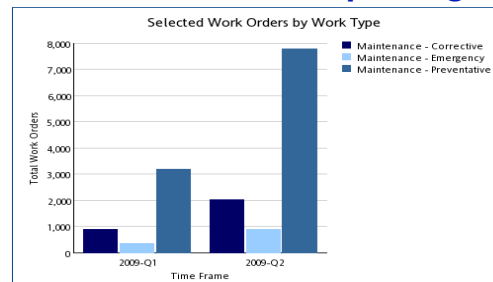
Crew Schedules



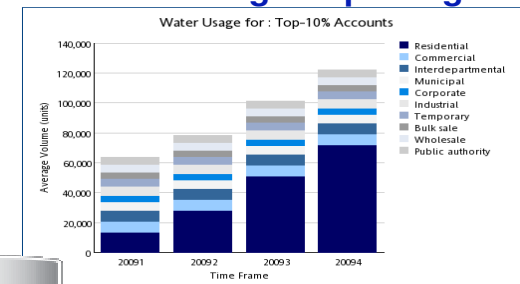
Spotting Trends in Your Data



Work Order Reporting



Water Usage Reporting



Data Loading Tools

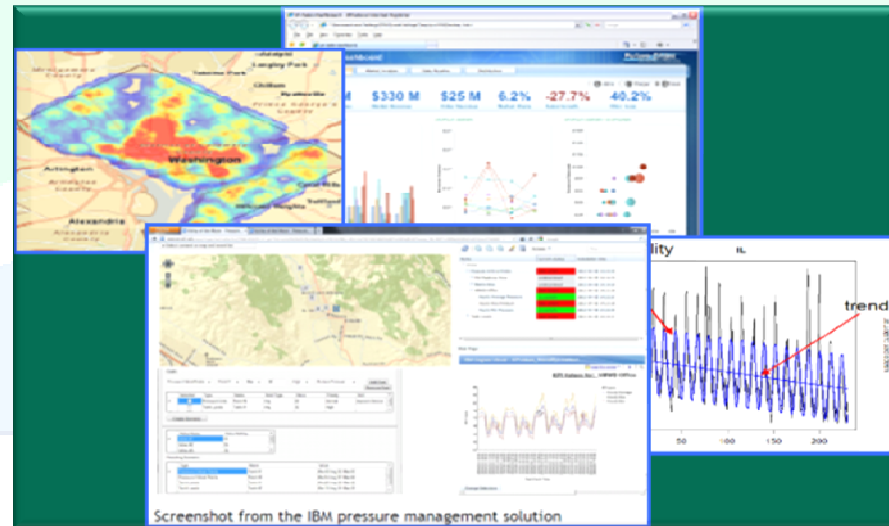
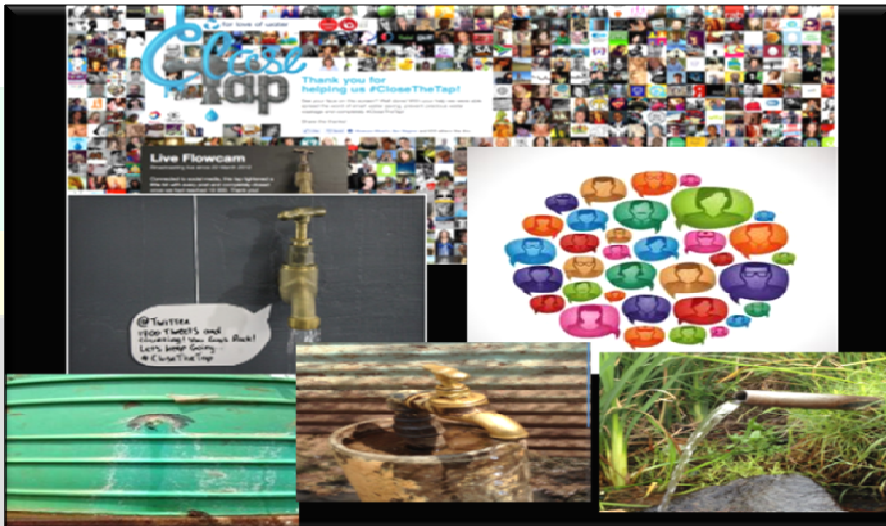


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Water Watchers



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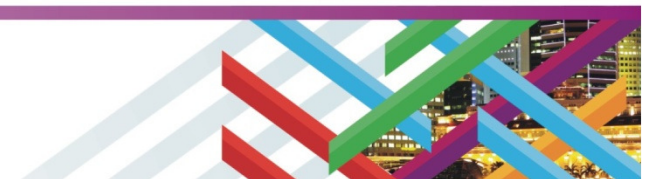


Smarter Citizen Services



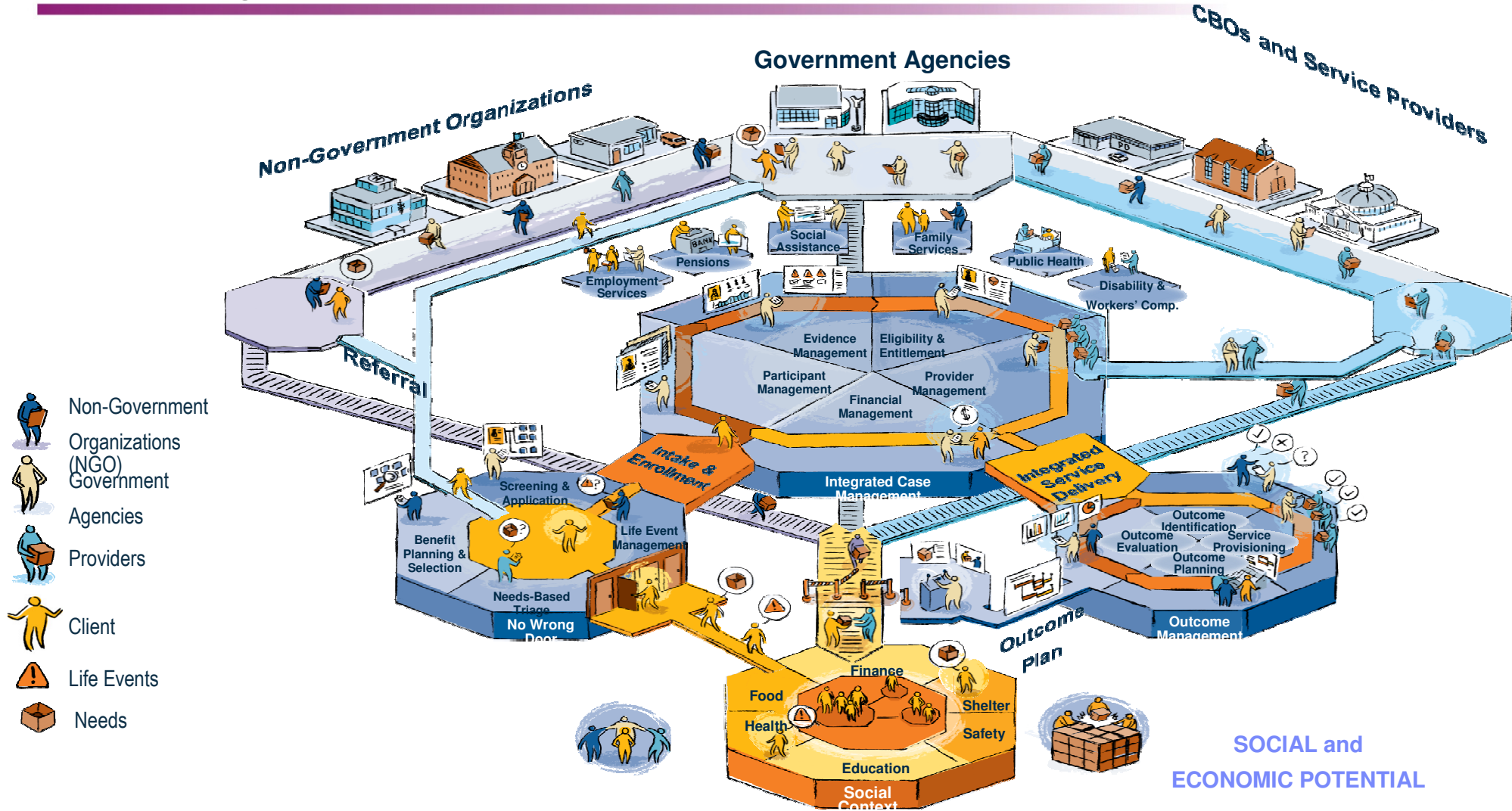
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Needs to Outcomes: Smarter Citizen Services

Maximizing the social & economic return on investment



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IBM Cùram Social Program Management

A Smarter Social Program Management approach:

Improve service delivery:

Break down silos and coordinate resources and services across agencies and departments

Increase effectiveness:

Cross program service delivery to meet the unique needs of each citizen and improve outcomes

Be prepared for the future:

Dynamic, configurable platform enables organizations to adopt new social programs and service delivery models.

Use Cases

- Public Health Insurance e.g. US Health Care Reform
- Family Services
 - Child Welfare
 - Child Support Enforcement
 - Youth Services
 - Adult Care Services
- Social Assistance
 - Food & Nutrition Support
 - Income Assistance
 - Medical Assistance
- Disabilities/Workers Comp
- Employment
- Pensions

Integrated eligibility and benefit determination across 60 social programs



Steve Cuthbert, Assistant Director, Department of Workforce Services, State of Utah

"Client interactions are critical to the success and long-term outcomes of families and children. "



IBM Cúram Social Program Management

Use Cases

IBM Cúram Outcome Management

A Smarter approach to managing outcomes:

Manage the full client lifecycle:

Assess needs, establish goals, plan for attainment, and track progress using evidence-based models.

Focus on results:

Organizations can adopt a client-centric approach to service delivery and focus results rather than focusing on the services available

Gain new insight:

A comprehensive view of client information enables new insights into client developments and progress

Use Cases

- Parole Management
- Child Welfare
- Disability & Workers Compensation
- Social & Health Care Coordination



WorkCoverSA is a provider of disability insurance for 50,000 employers in South Australia. WorkCoverSA



"The WorkCover team is excited about the potential of the Cúram solution to help the organization achieve a high standard of service and deliver on the promise of 'the best possible recovery and faster return to work,' while achieving new levels of efficiency and transparency."

Yvonne Deally, Chief Information Officer, WorkCoverSA



IBM Cúram Social Program Management

A Smarter Social Program Management Use Cases

Improve
Benefit
serv

Increase
Cross
unio
out

Be prep
Dyn
orga
and

Integrat
benefit
across

insurance
employe
Australia


IBM Cúram Universal Access

A Smarter approach to finding the right social program:

Target programs to meet citizen's needs:
Identify all relevant programs and services based on citizen's context

Streamline application process:
Simplify the process for constituents and ensure consistency across programs with a single application for all benefits and services


Manage life events:
As life events change, maintain accuracy across all government programs improving citizen satisfaction and reducing fraud



Use cases

- Departmental or cross-organization
- Social Services
- Youth Services
- Elder Services

Provide a single point of access for 35 federal, state and local government programs across 8 agencies



"This innovative website is going to push us forward in our mission to improve self-sufficiency and help more hard working families rise out of poverty for good."

Michael Bloomberg, Mayor, New York City



Smarter Public Safety & Security



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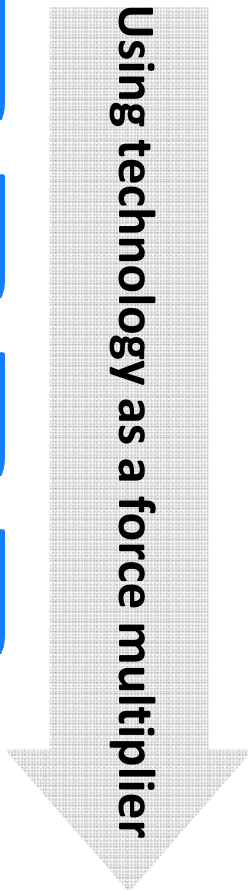
Why Smarter Public Safety and Security?



“technology can be the 2nd or 3rd person in the car.”

Former NYPD police chief Bill Bratton

Constraints	Fewer frontline staff and lower budgets are driving departments to seek out innovative methods of reducing operational gaps
Best Practice	Use ‘digitization’ of policing operating procedures to drive delivery of best practice – leapfrog the learning curve
Disjointed legacy systems	Disjointed legacy systems are becoming an expensive weakness in the policing system due to the system sophistication requirements
Need for analytics	A recognition of the growing requirement to employ advanced analytics and threat detection to improve operations efficiency



Proactively Manage Crime Fighting

(because we Can!)



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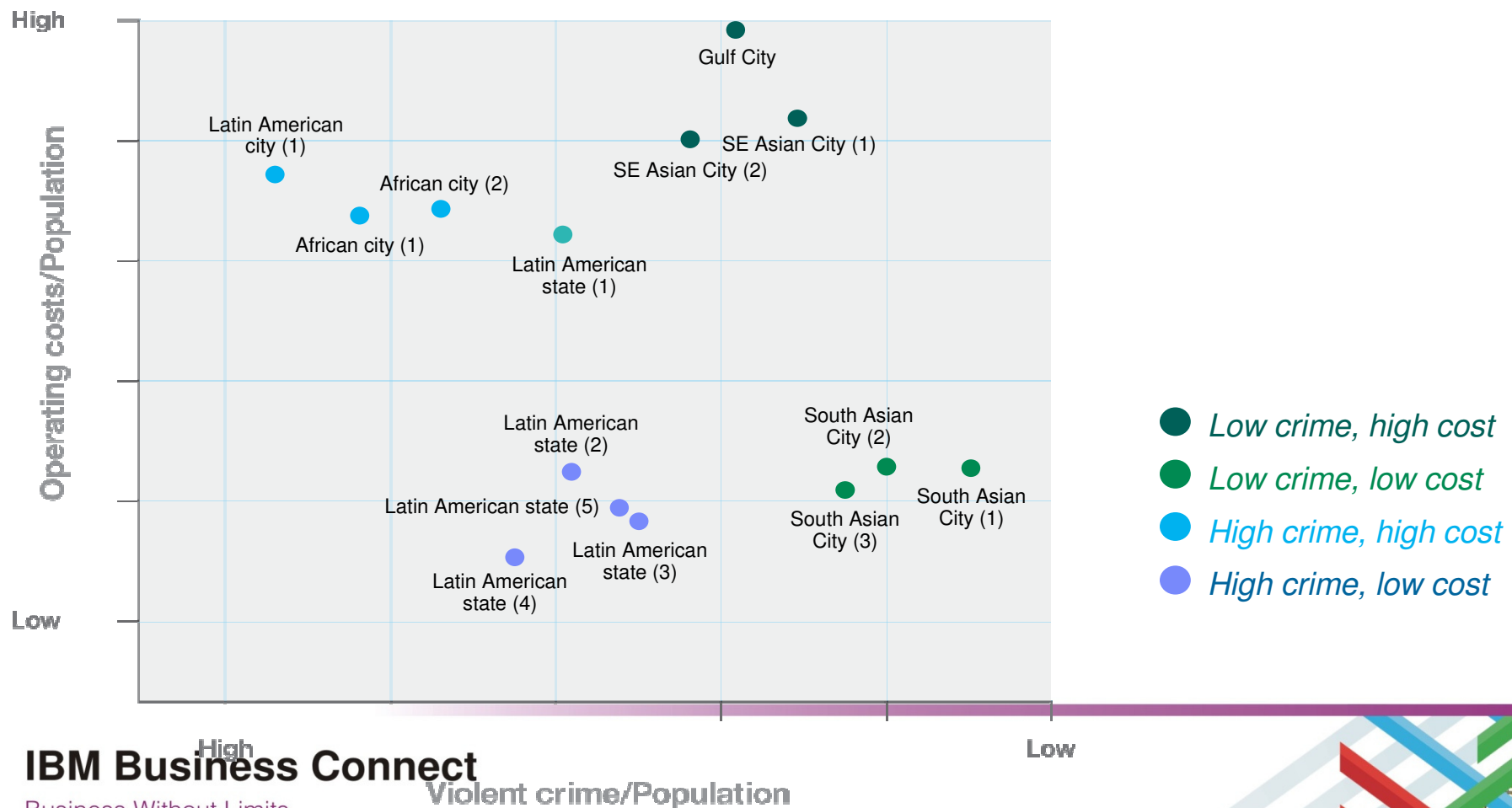
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The police agencies vary greatly in their levels of development and the environments they face – falling into 4 groupings



Distribution of rapidly developing economies' police agencies



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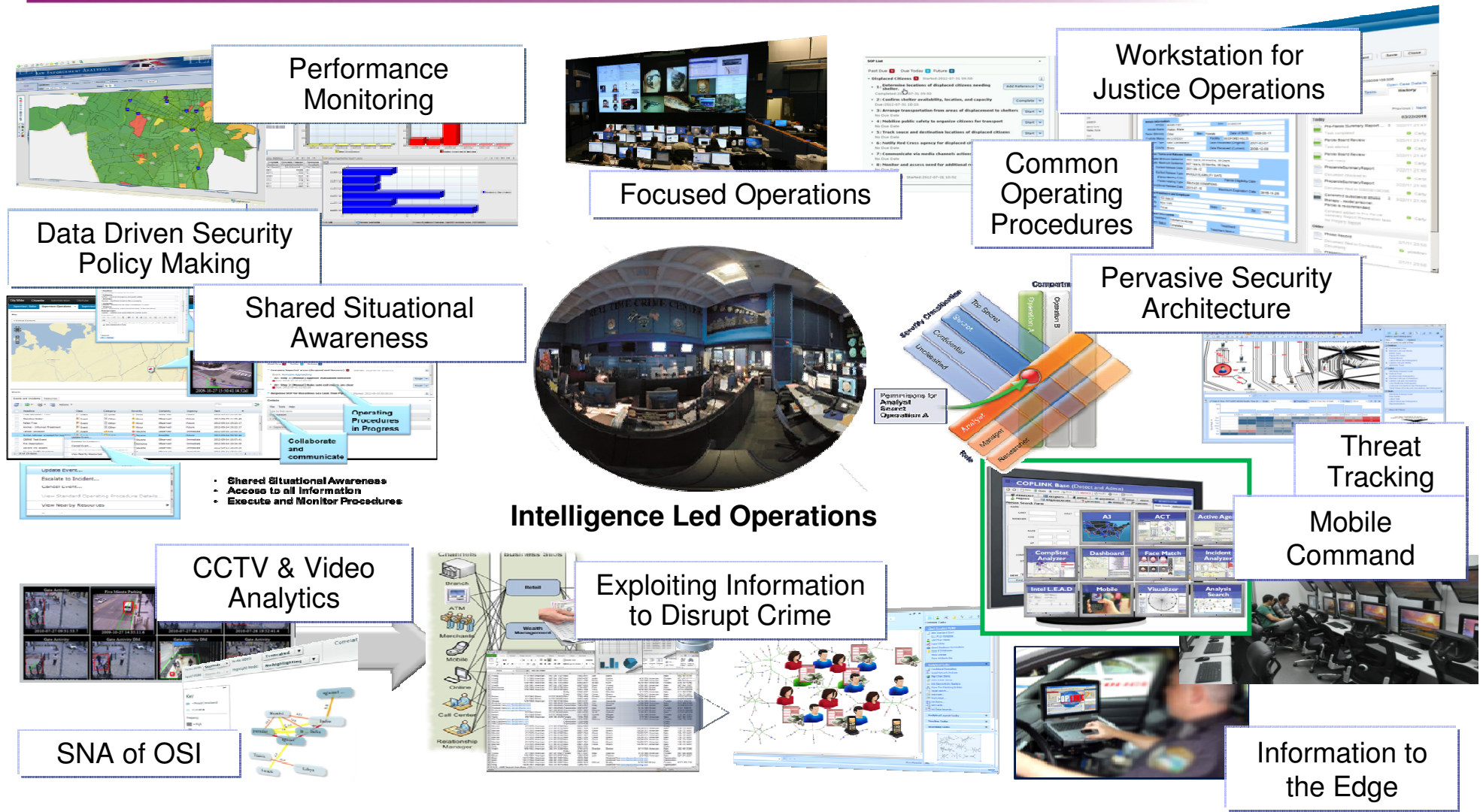
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Violent crime/Population

Low



Delivering Intelligence Led Operations: a single product



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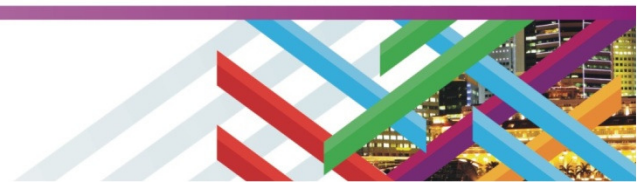


Intelligent Law Enforcement: a single View of operations







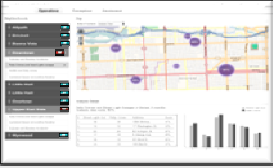
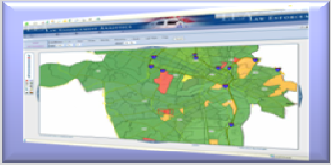
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An Integrated tool for managing the delivery of Public Safety



Many and Varied Sources	 Tactical Leads	 Intelligence led Operations	 Smarter Public Safety
	 Tactical and Operational	 Intelligence Led Operations	 Safety and Security Analysis
		Command Staff	City, National Operations

Performance Monitoring through cascaded KPIs:

delivering operational excellence

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Intelligent Law Enforcement: Managing the delivery of Public Safety

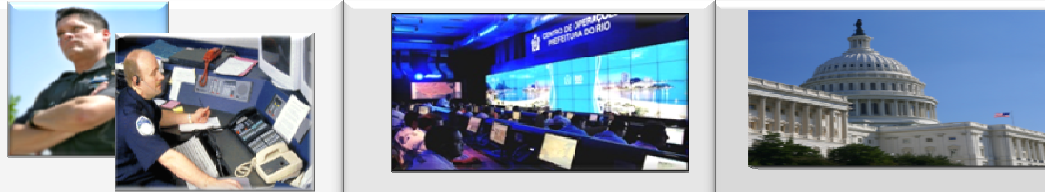


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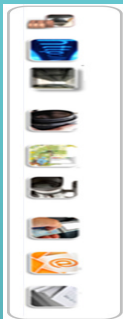
Analytics: Extracting the Value from Information



Patrol Officers Intelligence



Interpol Data Feeds
Legacy Systems
The Web
Open Source
Intercept
Scene of Crime and Incident Reports



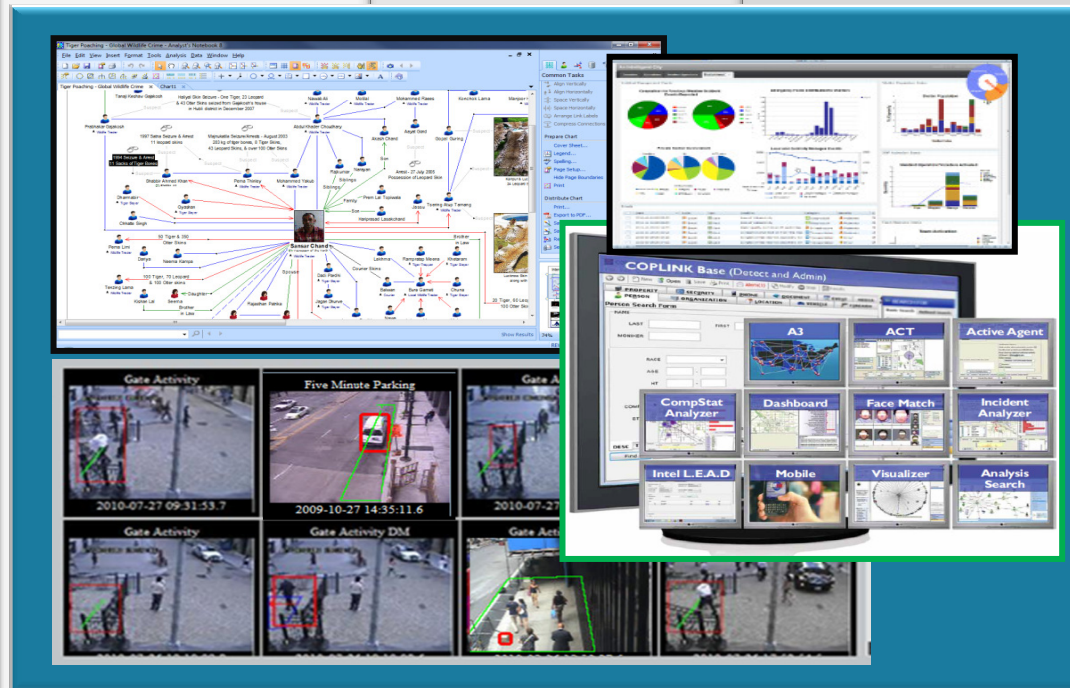
Community Policing



CCTV Surveillance



Many and Varied Sources



Powered by Analytics for every sort of data eg

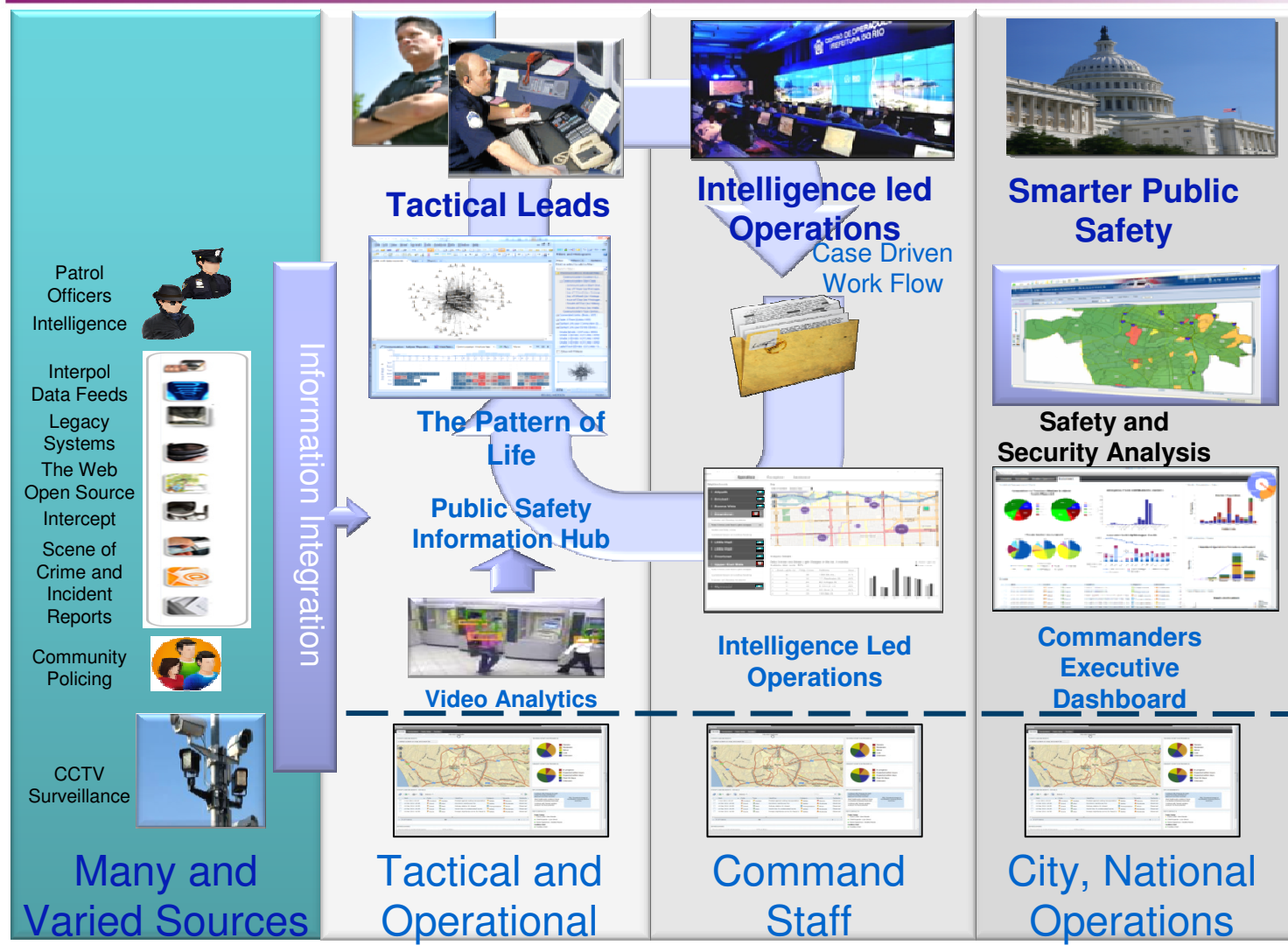
- CCTV analysis
- Bloggs Tweets and wikis
- Evidence and policing intelligence

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Intelligent Law Enforcement: Exploiting Information End-to-End



A single IBM Product:
 Modularized for Ease of Implementation:
integrated and deliverable

Performance Monitoring through cascaded KPIs:
delivering operational excellence

Underpinned by analysis tools designed for intelligence discovery:
informed decision making – intelligence led operations

A single view of operations: Shared situational awareness throughout the organization

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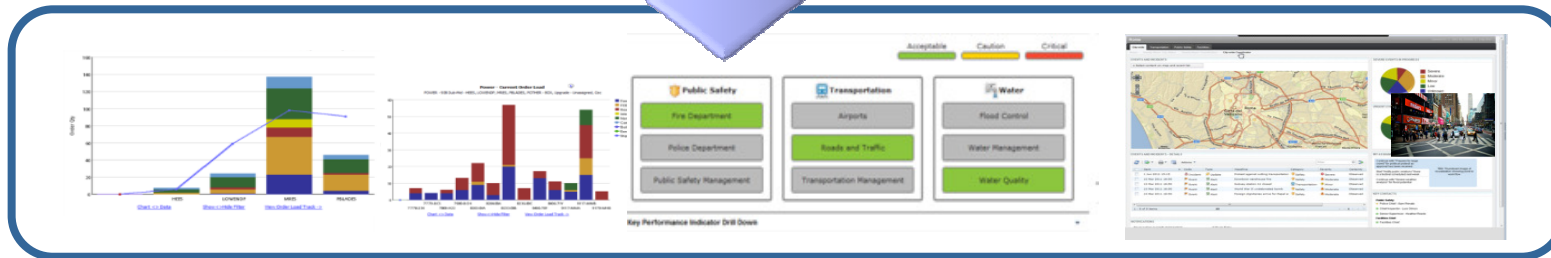
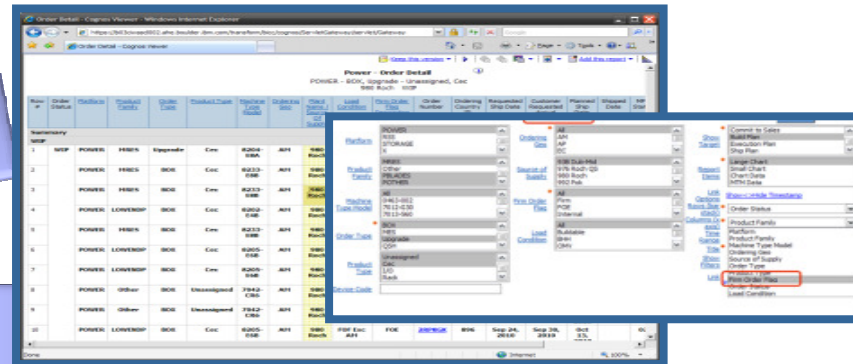
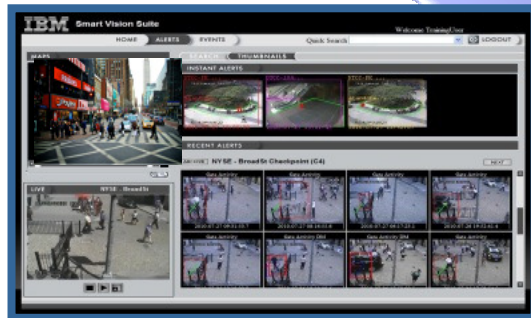


Why IBM Video Analytics



Define areas in a field of view to monitor and for which specific events, alerts (loitering, object removed, deposited and analytics for attribute capture. Store Metadata for later search (find all Blue cars in this period)

The video analytics engine will be configured to monitor these attributes



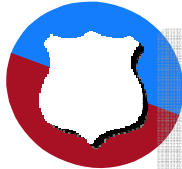
Trends, KPIs, Alerts, Reports, Event Correlation, trigger SOPs

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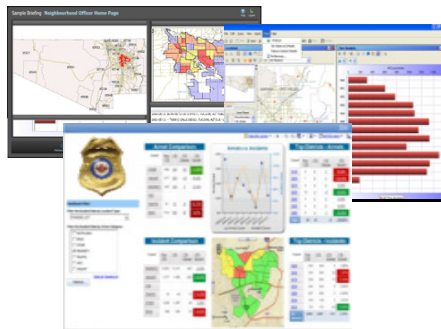


A Single Product: Intelligent Law Enforcement



Smarter Law Enforcement

Apply advanced technologies and analytics to provide a force multiplier, reducing system and operations costs and enhancing the citizen experience.



COMMAND & OPERATIONS

- Common Operational Picture
- Crime Trend Analysis & Decision Support
- Predictive Analytics
- Operational Performance



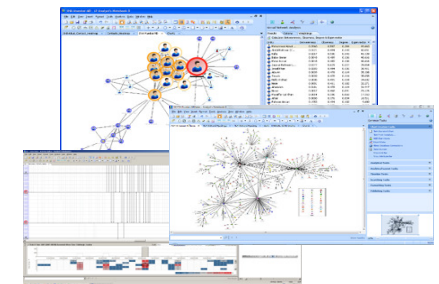
CROSS ORGANIZATIONAL SYNERGIES

- Emergency Management
- Social Programs
- Urban Planning
- Mayor's Dashboard



TACTICAL LEAD GENERATION

Solve crimes quicker by putting the right information in the hands of detectives and patrol officers when and where they need it



INTELLIGENCE ANALYSIS

Who, What, When, Where. Analyze entities, networks and events, timelines

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IBM: developed as a result of a compelling catalogue of public safety success



Cities of all sizes can benefit from implementing analytics solutions.



Relay critical data instantly to officers at the scene; what once took days now takes minutes

NYPD

provides mobile access to more than **120 million** criminal complaints, arrests and 911 records

Rio de Janeiro

Reduced time to understand emergencies and coordinate rescue efforts from **days to hours.**



Enables detailed analysis of current and historic crime data to understand root causes and support the creation of crime preventing campaigns

Tucson Police Dept

Reduces drug-related crime in community restoration project by **60%** in 18 months

United Kingdom Ministry of Justice

analyzes **4 million** records from within **140** prisons



Share key information on criminals among agency staff to help anticipate future problems and plan intervention programs

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Anticipating Problems: Rio de Janeiro



- Initial focus - prevent deaths from annual flooding
- Expanded to manage all emergency response situations
- Analyzes weather, energy, building, transportation, & water data in real-time
- Nationwide adoption in advance of Olympics and World Cup



Increasing efficiency in resource deployment, expanding early warnings to 48 hours, and coordinating all agencies in response

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Smarter Cities: A System of Systems



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City Planning and Operations: A single view of the city



What: A single view of all events and activities and the analytics to enable planners to manage conflicts, correlate and execute. For example: get a single view of all permits to work from each of the current systems involved

The screenshot displays the CoOp interface with the following components:

- Navigation:** CoOp, Assess the situation, Plan your actions, Track your actions, Attribute configuration, User feedback collection, Resource management.
- Map:** A map of Minneapolis with various event markers. A legend table is shown below the map:

Symbol	Name	Count	Visible
Red star	DID Events	1	<input checked="" type="checkbox"/>
Blue circle	Camera Location	27	<input checked="" type="checkbox"/>
Red star	Street Use Permit	0	<input type="checkbox"/>
Red star	Business Block Event	0	<input type="checkbox"/>
Red star	City Parking Ramps	9	<input checked="" type="checkbox"/>
Red star	Residential Block Event	0	<input type="checkbox"/>
Yellow triangle	ROWAY Obstruction Permit	15	<input checked="" type="checkbox"/>
- Calendar:** A Gantt-style calendar for 2012. It shows event durations across months (Jan, Feb, Mar, Apr, May, Jun, Dec). A search bar and filters for 'VIEW by Location' and 'TIME ZONE US Central' are present. A list of locations is on the left:
 - 318 First Ave N
 - 35 South 7th Street
 - 414 Nicollet Mall
 - 4350 Baker Road
 - 7625 Boone Avenue
 - 90 9th St S
- Query Panel:** A sidebar with 'Query' and 'Add Your Event' tabs. It includes a 'Saved Queries' list, a 'Where' section with location filters (Existing Regions, Enter Address), and a 'Nearby' section with options for Buffer Range Within, Driving Range Within, Within (selected), and Nearest Events/Objects.

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Planning and City Asset Life Cycle Maintenance



What: *Optimizing capital and Operating Expenditure to meet the City Mayors Key Performance Indicators. For example: "Our IDP commits us to reducing cost And reducing Traffic Jams: how can we?"*



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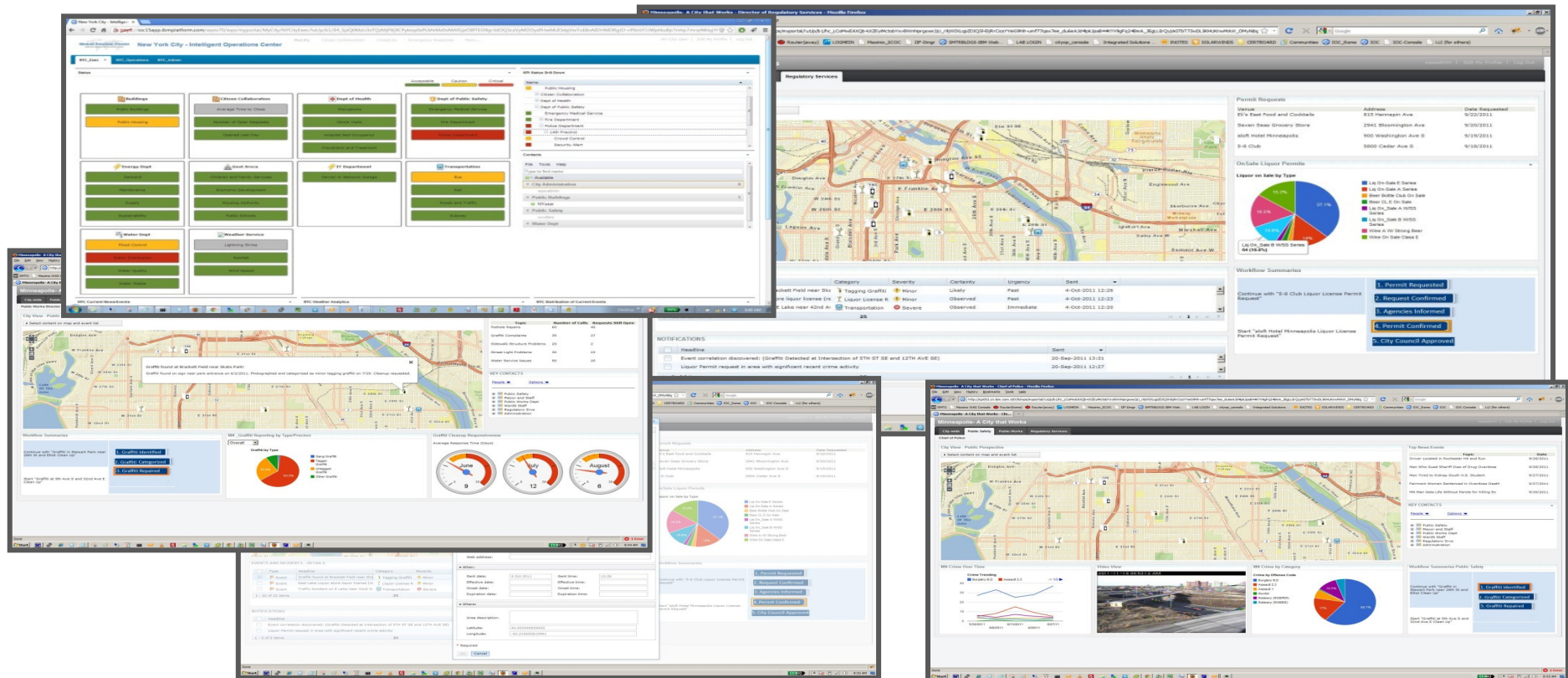
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City Planning and Operations: Driving Delivery to meet SLAs

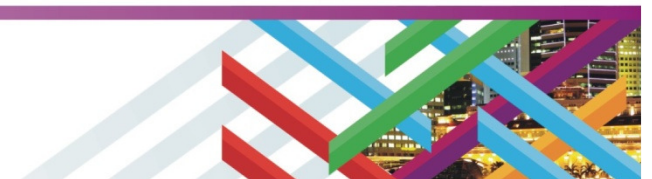


What: Provide the information all staff in the city use to manage to City KPIs and deliver the commitments in the City IDP. For example: Why are we always failing our Traffic Management KPIs? I need to prepare for this community meeting, what do we know?



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City Planning and Operations: Permit Optimization



What: *Permits to work are issued by many systems in the city and Government Organizations: De-conflicting and Optimizing them is time consuming and is inefficient for Government and Business. For example: "If the water guys do this 3 weeks later we save money and meet the traffic KPI"*

Permit Optimization

- Support permit approval process with detailed analysis of city facts
 - Visually analyze permits relative to city, planned events, etc
- Track status of permits under consideration , Annotate permits for review

St Patricks Day Parade 2012 Owner: [dropdown] March 17 2012 at 0800 to March 17 2012 at 1600

proposal to hold a parade during the morning of St. Patricks Day, - March 17 - involving a convoy of floats through the town center for 3-4 hours. Traffic flow would be stopped through the following streets for the duration and 2 hours before and after the parade:

- Main Street
- Talbot Street

Approve... Reject...

109 Cafe
25 Robbery Incident
25 CrashDB
2 Roaming Animals

Cluster #9
Score: 11
Radius: 337 yards
Cafe: 17 (100%)
Total: 17

Search for permits matching required criteria

Select permit as context for further evaluation and analysis

Bookmark and annotate key facts in the context of this permit

Filter support for attributes of imported data sets

Support for complex spatial queries

Take actions "in-place" for selected permit

Enable and disable layers instantly, and browse layer statistics and reports

Evaluate permits in the context of analytical routines

Visual representation of proposed permit

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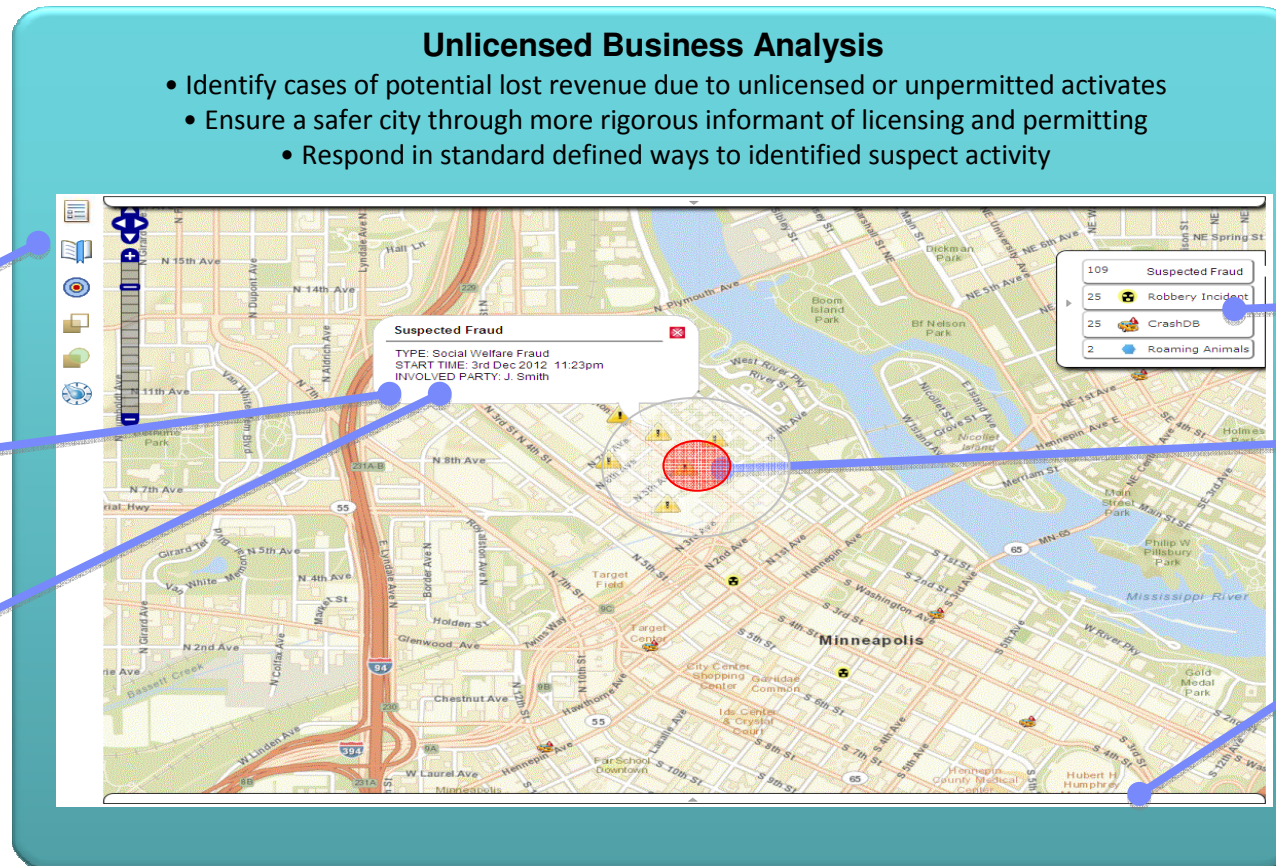


City Planning and Operations: City Revenue and Governance



What: Lost Advertising Revenue, Unlicensed Businesses, Unpaid Encroachments, Missing License Fees and incorrect charging represent Lost City Revenue and a Missed opportunity to invest in the City

For example: “Why is it that this area has so many city advertising billboards unpaid”



Annotate and bookmark suspect activity

Suspect data identified and integrated into Analysis Workbench

Respond to suspect cases through Stand Operating Procedures (SOPs)

Evaluate suspect activity in the context of all forms of city data

Correlation and “Hotspot” analysis of suspect data

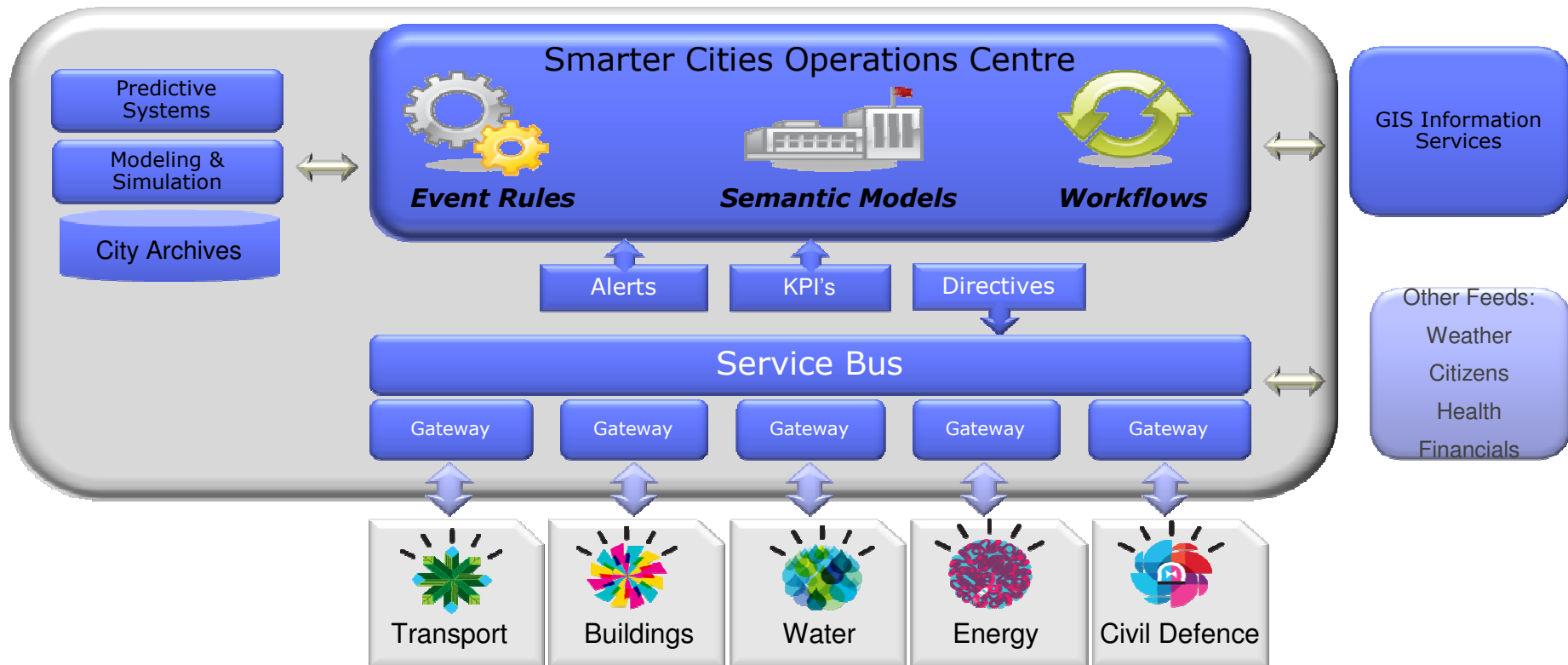
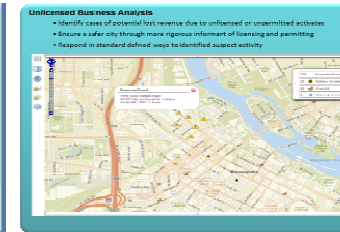
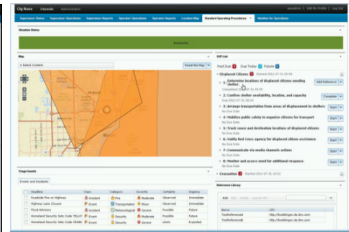
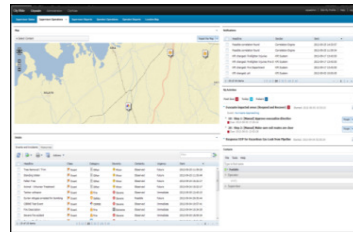
In-place reporting and Analysis of suspect activities

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Intelligent Operations: One platform for City Operations



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So What does a Smarter City Look like?



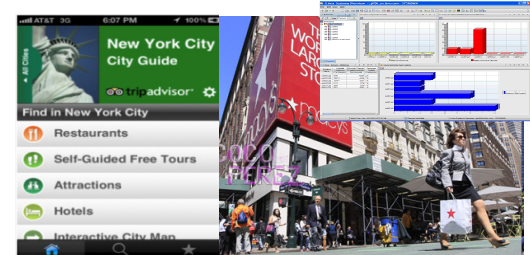
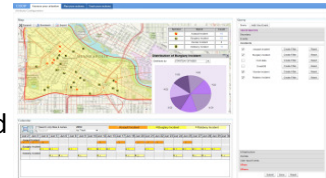
Leveraging
information to make better decisions

Engaging People
to co-define (even co-produce) "whats important"

Coordinating
resources and processes to operate effectively

Anticipating
problems to resolve them proactively and manage risk

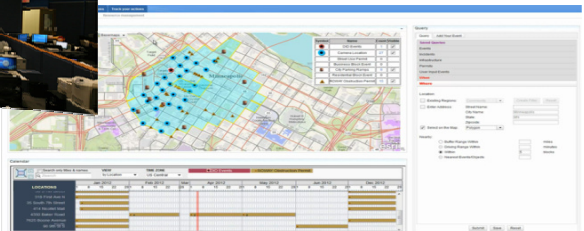
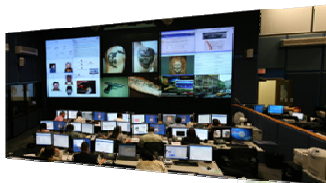
City Services Resources & Operations
Manage resources more effectively by understanding the complete situation. Coordinate across city departments and private sector to optimize efforts.



Economic Integration
Interact with local businesses to improve business opportunity and citizen services availability and convenience. Drive local commerce and City Revenue



COMMAND & OPERATIONS
Common Operational Picture
Crime Trend Analysis & Decision Support
Predictive Analytics
Operational Performance

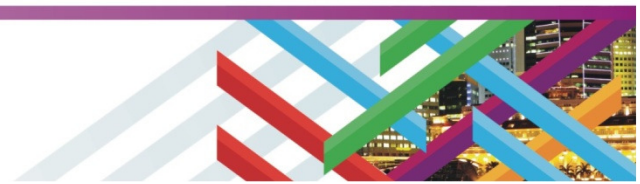


City Planning and Operations
Planning Resources and Activities
Measuring City performance against KPIs

Transportation & Water
Traffic Management and Transit Operations
Predictive Insights and Responsive Operations to City, Business and Citizen operations, activities and environment



Citizen Involvement
Participation in community programs and awareness of opportunities
Create interactive experiences and deliver information where its needed





THANK YOU



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