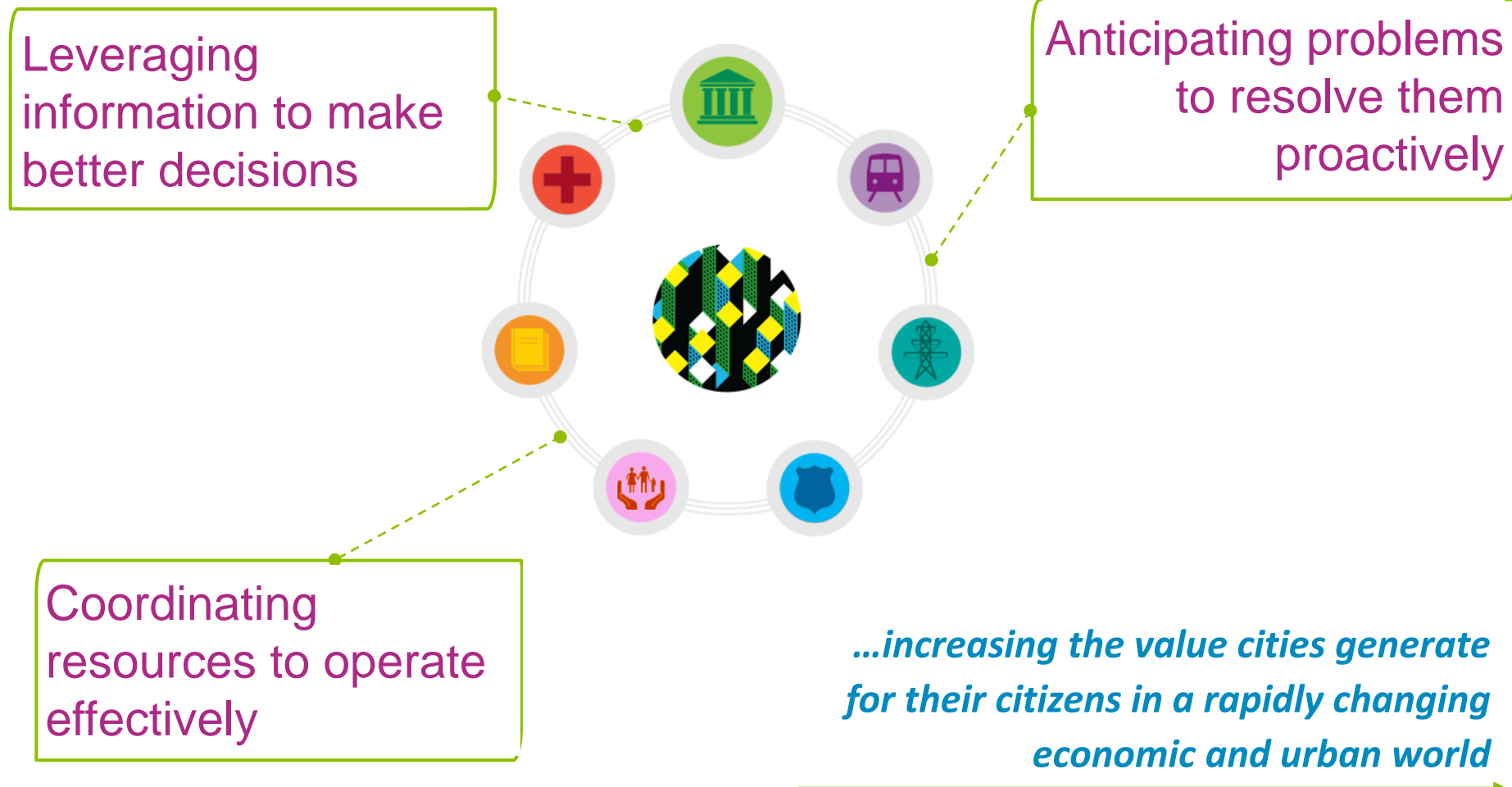


# Smarter Cities– Public Safety

Improving the economic health, welfare and safety of society



Smarter cities are cities that use technology to provide safer, more attractive urban environments with sustainable economic growth



## A planet of Smarter Cities

In 2007, for the first time in history, the majority of the world's population – 3.3 billion people – lived in cities.

By 2050, city dwellers are expected to make up to 70% of earth's total population, or 6.4 billion people.



IBM Corporation



# Governments face challenges – and opportunities -- in every functional area.

## Increasing outcome effectiveness

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**26% to 58%**

Percent of government spending allocated to social protection

## Decreasing environmental impact

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**6x**

The increase in water usage since the 1900's, more than twice the rate of population growth

## Reducing fraud and error

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**£ 3.1 billion**

Estimates of fraud and error across all benefits during 2009/10 in Great Britain

## Conserving energy, increasing productivity

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**4.8 billion hours**

Additional hours that traffic congestion forced Americans to spend on the roadways, a loss of 3.9 billion gallons of fuel worth \$115 billion

## Protecting life and recovering from natural disasters

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**227 million**

Average number of people who were affected by natural disasters each year in the period 2002-2009

## Reducing crime's true cost

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**\$943 per person**

The tangible social and economic cost of crime in Canada -- \$31.4 billion, or \$943 for each man, woman and child



# The information age creates a new series of challenges for Public Safety Agencies.

## Data overload

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Increase in the volume of information—much in unstructured formats

**21%**

Forecast growth path in global CCTV installations 2011–13

## New and emerging threats

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The community (law abiding and criminal) accesses and uses data in new ways—increasingly mobile and interconnected

**€312 Billion**

Global cost of cybercrime

## Increasing public expectations

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Today's economy and society are digitally interconnected—citizens expect public services to adapt

**57%**

The percentage of city expenditure that can be attributed to public safety

The losses attributed to poor public safety are considerable.

**€625 Billion**

The insured losses that would result from a future large terrorist attack in New York City disclosed by the American Academy of Actuaries

**€80 Billion**

Annual amount of healthcare fraud in US in 2009, each incident costing, on average, \$19,000

**€24 Billion**

In Canada the tangible social and economic cost of crime in or equivalent to \$943 for each man, woman and child in the country

**€240 Billion**

The estimated cost of 18,000 plus homicides recorded in 2007 in the US

**€2.7 Billion**

Is the cost of New Zealand Government spending on police, corrections and justice in the past 14 years



Many governments are asking themselves tough questions about their public safety programs.

**Are response times keeping pace with citizen expectations?**

Does **information** on criminals move seamlessly through the system?

**How quickly does emergency management respond?**

**Do officers on the street get the information they need quickly?**

**How safe do citizens feel?**

What impact will new demand have on public safety resources?

**Are budgets keeping pace with increased demand?**

What citizen satisfaction patterns are emerging?

**How have changing patterns impacted limited resources?**

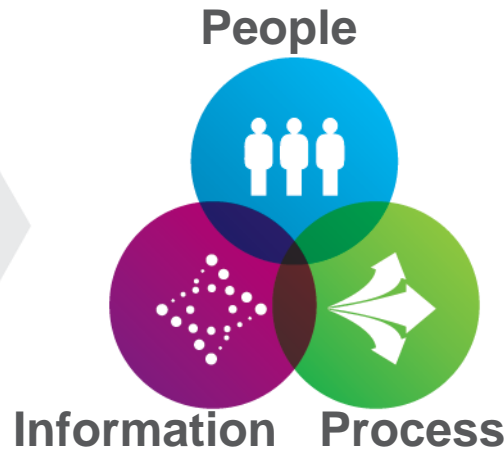
**Has faster access to services helped citizens?**

**Have fire safety initiatives been effective?**

# Public safety agency leaders are changing their approach to mitigate today's threats.

## Yesterday's approach

- Back-office analysis
- Specialized analysts
- Jurisdiction-driven processes
- Post-incident investigative management



## Smarter public safety approach

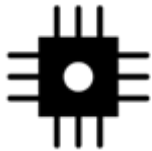
- Analysis at the core of all operations
- Expanded community of users
- Working across information boundaries
- Intelligence-driven threat management
- Real-time and predictive analytics

**Greater collaboration and coordination between people, information and processes**



Essentially, Smarter Public Safety is all about being instrumented, interconnected, and intelligent...

### INSTRUMENTED



Advanced observation and information collection and sharing techniques are used to create a complete picture of a situation to all involved organisations.

### INTERCONNECTED



and assets are shared across agencies to enable advanced collaboration. All systems are connected to facilitate holistic threat management.

### INTELLIGENT



All available information is analyzed and used to proactively mitigate threats from crime and emergencies through co-ordinated planning and response.

... getting the right information to the right service providers and the public on time in order to respond to emergencies, to both fight and prevent crime, and to address man-made threats or natural disasters.

Smarter Public Safety has made a tremendous impact on government clients through more than 2000 engagements.

**Chinese**  
Earthquake Relief Agency improves quake monitoring and disaster mitigation.

Predictive analytics helped slash **Richmond's** crime rate by **40%** in one year

Data analytics helped cut crime **35%** in **New York City**

In **Delft**, enhanced flood prediction and protection systems for coastal areas and river deltas are being developed

American city reduces staff requirements for monitoring surveillance feeds by **95%**

**Gauteng in South Africa** increases emergency responder productivity by **25%**

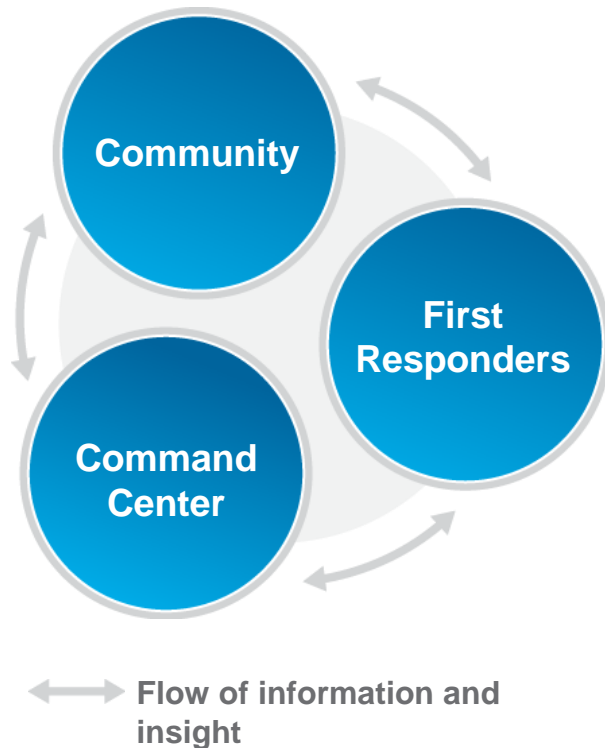
New management system reduced emergency response time in **Madrid** by **25%**

**American state** saves USD 150,000 and decreases audit effort by 80% via better asset management.

The **UK Ministry of Justice** uses predictive analytics on more than **4 million** prisoner assessments

Smarter public safety and security uses information and technology to deliver improved outcomes with leaner, more focused operations.

## Smarter Public Safety and Security



### Instrumented

- Fast, automated collation of information from varied sources to increase situational awareness
- Merging of structured and unstructured data from multiple sources to create a single view of Person, Object, Location, Event (POLE)

### Interconnected

- Efficient information sharing to deliver a real time Common Operating Picture (COP) to drive more effective decision making
- Effective collaboration across services, agencies, private sector suppliers and the community

### Intelligent

- Analysis and mining of information to identify trends, hotspots and specify preventative actions
- More comprehensive, timely information to improve planning, scheduling and tactical decision making

# What does a smarter public safety agency look like?



# How do you build an efficient, effective and smarter public safety capability?

## Business outcomes

- Establish access to relevant data
- Coordinate, and integrated trusted information systems
- Enhance situational awareness
- Enable proactive planning and intelligence based decision making
- Establish unified threat assessment and response capability

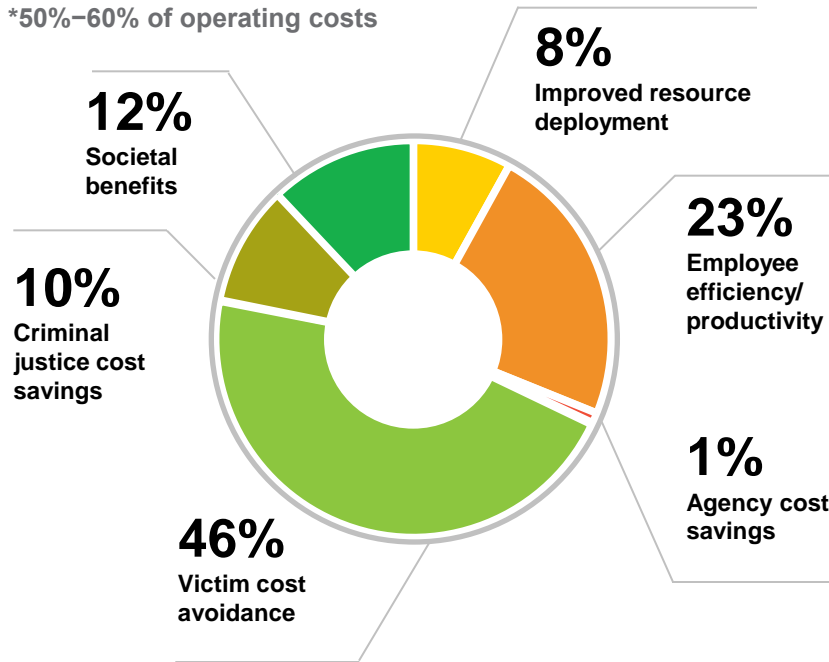
## Transformational stages



# The path to Smarter Public Safety and Security gradually builds a wide range of benefits to the government and to the community

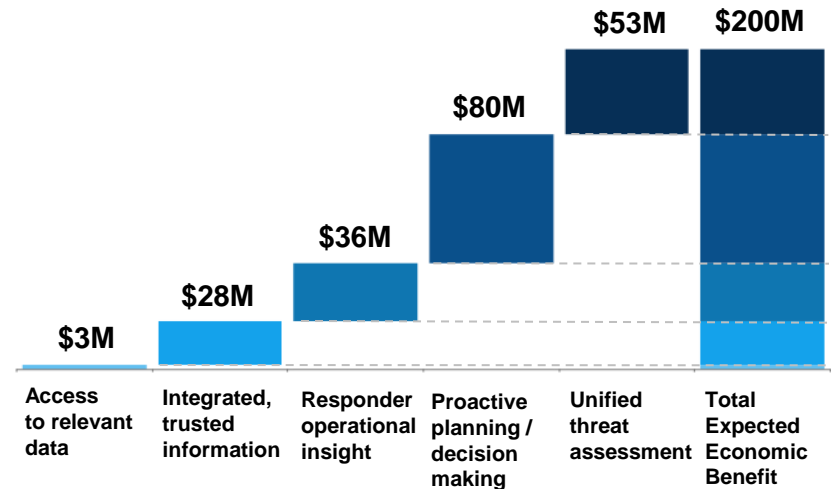
Our research suggests that for a typical city there is €150M to €185M\* per annum of potential value waiting to be seized

\*50%–60% of operating costs



## Annual economic benefits by competency

Illustrative public safety ecosystem\* (\$350M op costs, 4250 employees)



14 \*Source: IBM Center For Applied Insights. November 2011. The potential benefits above are modeled using publically and privately available data. These potential benefits reflect a relative result based on a specific set of data and assumptions. Therefore, potential benefits will vary by organization and are not guaranteed.



# What is necessary?

Learn

Plan

Execute

Govern

Learn

Plan

Execute

Govern

Learn

**Collaborate, Innovate, Adapt**