

Analytics for a Smarter Government: Business Intelligence & the Future of Predictive Government

NIH – Project Management
Community Meeting –
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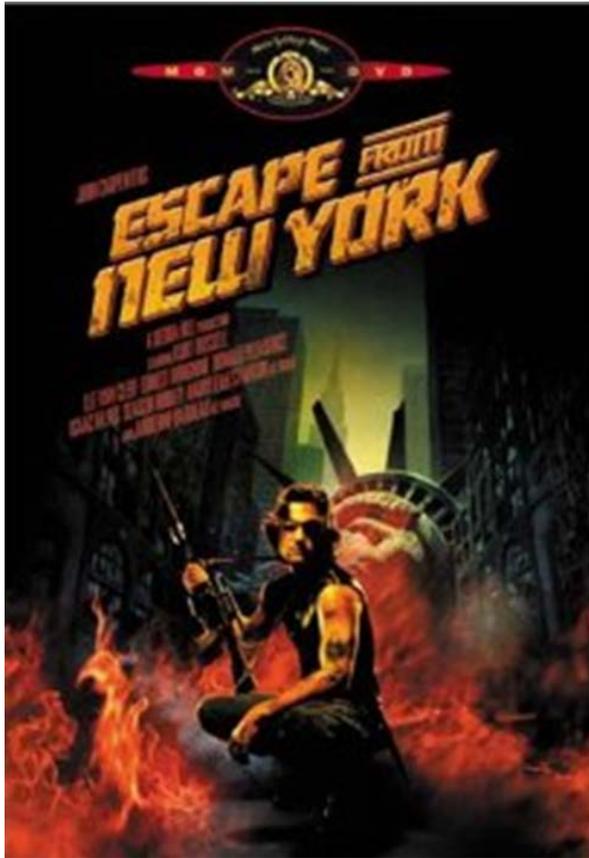


1970 and 80's NY Crime Wave



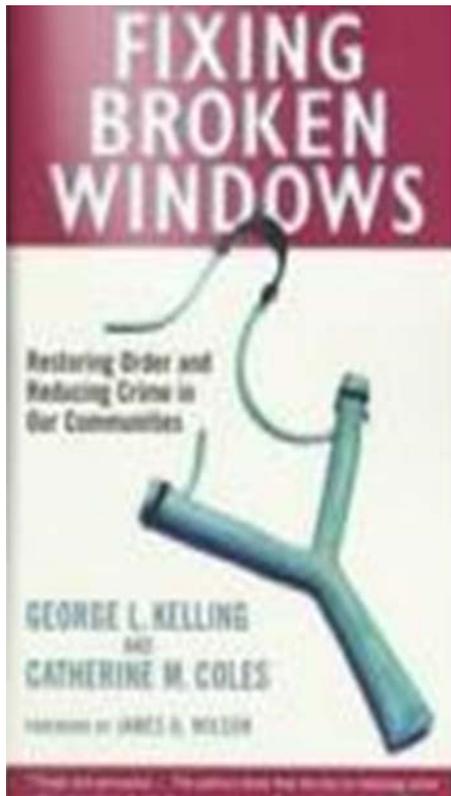
- Random Patrol Car Routes Failing
- Corruption and Corruption Control but less Quality Policing
- Crime Increases 7X between 1960-1990

1970s and 80's: The 3 Influences “De-Policing” NYC



1. “Crime Can’t Be Prevented by Police” - It’s a Social Issue
2. Reduced Police Numbers
3. Not Allowed to Make Low Level Drug or Quality of Life Arrests

The Response: A New Mayor and The Broken Window Theory



- A New Law and Order Mayor : Former Prosecutor
- Bratton: Had Cleaned up the New York Subways
- The Car Window Guys – Symbol of Change: No Crime too small

First Generation Technology:

- Paper based prior to Bratton
- Basic GIS System
- Basic Data Entry
- PC Driven
- Daily updates to crime information

The Management Philosophy:

- Precinct Level Accountability
 - Ended Matrix Structure
- Resources dynamically adjusted to counter changing threats
- Emphasis on improvements and strategies
- No “gotcha” mentality
- Real Time – Not Compliance Reporting
 - Feds was only asking for data 9 months later

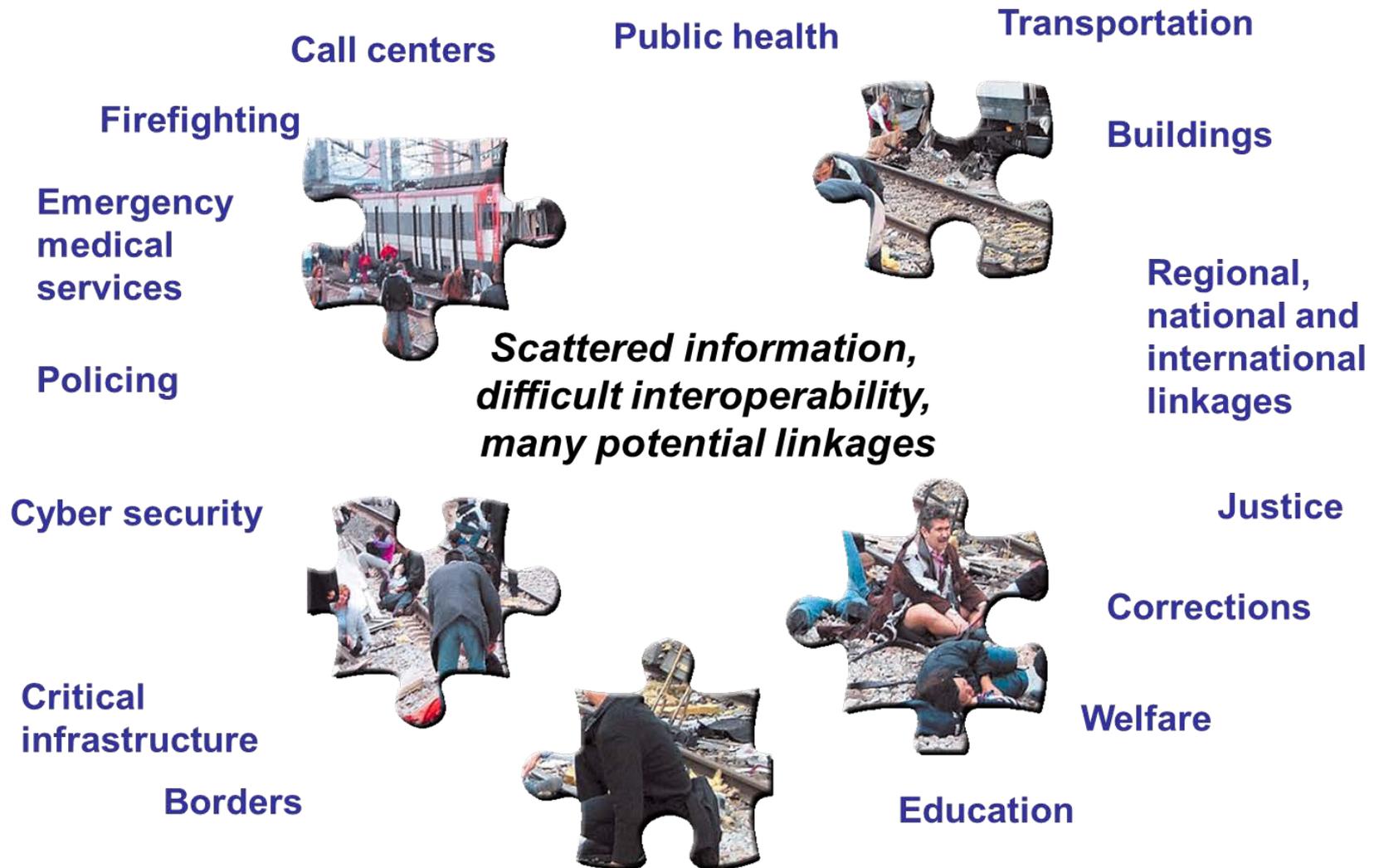
Bill Bratton Interview

- [Watch Bill Bratton Interview on YouTube](#)

The Spread of “stat” Management

- Baltimore
- Philadelphia
- DC
- LA
- New Orleans
- Most Major Cities by 2004

Next Phase: The public safety landscape is still complex and fragmented



A more holistic view of Comstat is emerging, enabled by new technology

Urban Crime

- Predictive policing strategies
- Crime information
- Dispatch
- Investigative support
- Arrest
- Mobile information

Emergency Response

- Emergency Response Center
- Computer Aided Dispatch
- In-car or on-person systems
- Planning and simulations

Counter Terrorism

- Cyber Security Solutions
- Fusion Centers
- Border Security Solutions
- Critical Infrastructure Security Solutions

Transportation Safety

- Traffic Management Systems
- Asset Management for Safety Maintenance
- Weather
- 511

Cross cutting solutions: data management, communication, identification

- Data Analytics
- Data Management
- Governance
- Shared Services

Cross cutting solutions: data management, communication, identification

- Collaboration
- Biometrics
- Digital video
- Geospatial information
- Interoperable communications

External pressures growing



**TRANSPARENCY &
ACCOUTABILITY**



**DELIVER EFFECTIVE
PUBLIC SAFETY**



**DECISION-QUALITY
INFORMATION**



**ONGOING BUDGET
PRESSURES**



**GLOBAL SECURITY
CHALLENGES**



**NEED FOR HIGH
PERFORMANCE**

Requiring answers to critical questions everyday...

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 receive 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 resources?

Has faster access to services helped citizens?

Have fire safety initiatives been effective?

Smarter decision-making, better outcomes and better performance through



**Mission
Performance**



**Operational
Performance**



**Financial
Performance**

- Holistic view of programs, budgets and results, today and in the future
- Managing and reducing risk
- Improving operational efficiency
- Increasing transparency and accountability

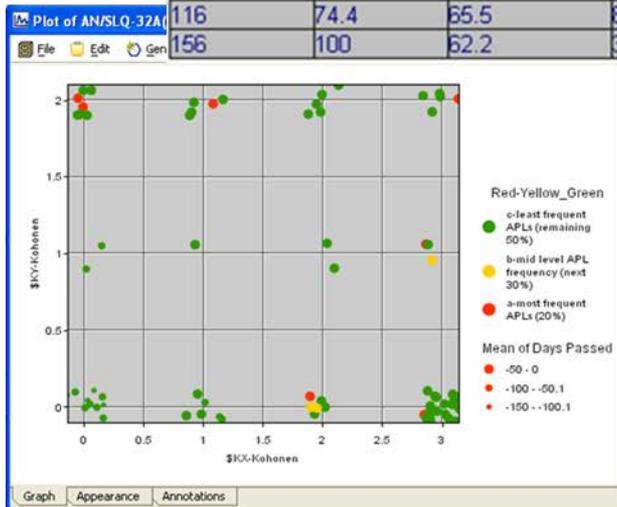
Early Predictive Success: Maintenance Management

Problem: most preventive maintenance schedules assume independent part failure

Solve: exploit maintenance records to discover the associated/sequential failure patterns



Instances	Support	Confidence	Consequent	Antecedent 1	Antecedent 2	Antecedent 3
80	35.1	92.1	001697	99213	551435	
231	35.3	69.1	8102270	99213	99214	
72	46.2	41.9	001697	99213		
11	76.1	81.8	0024343	99213		
116	74.4	65.5	881528	99213		
156	100	62.2	36415	99213		



Crane Narrative - Clementine 9.0

Table (3 fields, 84,351 records) #10

autonumber	icm	text
3340	4204	SUSPECT CHILL WATER CONTAMINATION OF REFRIGERANT IN # 4 AC UNIT. XXXX REQUEST FTISCLANT TECH REPAIR ASSIST SHIPS FORCE IN TROUBLE SHOOTIN
3341	4726	SUSPECT CHILL WATER CONTAMINATION OF REFRIGERANT IN # 4 AC UNIT. XXXX REQUEST FTISCLANT TECH REPAIR ASSIST SHIPS FORCE IN TROUBLE SHOOTIN
3342	5123	SUSPECT RUPTURED CHILLER TUBE BUNDLE ON #4 AC UNIT. XXXX REQUEST OUTSIDE ACTIVITY DISASSEMBLE, INSPECT, AND REPAIR OR REPLACE RUPTURE
3343	25847	NR 1 A/C CHILL WATER PUMP IS BEING
3344	26213	PUMP OVERHAULED BY SIMA XXXX MOTO
3345	49599	REFRIGERANT TO REFILL #4 A/C
3346	49599	REFRIGERANT TO REFILL #4 A/C
3347	83641	NR4 AC UNIT CHILLER HAS A RUPTURED
3348	84346	R-114 ON BOARD FOR REFILLING 4 A/C
3349	60182	NR4 AC UNIT CHILLER HAS A RUPTURED
3350	60250	NR4 AC UNIT CHILLER HAS A RUPTURED
3351	69415	NR4 AC UNIT CHILLER HAS A RUPTURED
3352	66570	NR4 AC UNIT CHILLER HAS A RUPTURED
3353	81927	NR4 AC UNIT CHILLER HAS A RUPTURED
3354	81928	NR4 AC UNIT CHILLER HAS A RUPTURED
3355	35693	NR4 AC UNIT CHILLER HAS A RUPTURED
3356	36513	NR4 AC UNIT CHILLER HAS A RUPTURED
3357	24403	NR4 AC UNIT CHILLER HAS A RUPTURED
3358	36533	NR4 AC UNIT CHILLER HAS A RUPTURED
3359	49293	NR4 AC UNIT CHILLER HAS A RUPTURED
3360	49860	NR4 AC UNIT CHILLER HAS A RUPTURED
3361	70469	NR4 AC UNIT CHILLER HAS A RUPTURED
3362	71092	NR4 AC UNIT CHILLER HAS A RUPTURED
3363	30387	NR4 AC UNIT CHILLER HAS A RUPTURED

Table (5 fields, 389,062 records)

Concept	Data Type	icm
..._sif	1 U	20001EAO13815
..._law_pms	1 U	20001EAO13815
..._complete_pms	1 O	20001EAO13815
..._troubleshooting_tr	1 U	20001EAO13830
..._ships_force	1 U	20001EAO13830
..._request_ftisclant_tech	1 U	20001EAO13830
..._rep	1 U	20001EAO13830
..._chill_water_contamination	1 U	20001EAO13830
..._ac_unit	1 U	20001EAO13830
..._ruptured_chiller_tube_bundle	2 U	20001EAO13831
..._ac_unit	1 U	20001EAO13831
..._pump_overhaul	1 U	20001EAO13832
..._mechanical_seal	2 U	20001EAO13832
..._chill_water_pump	1 U	20001EAO13832
..._seals	1 O	20001EAO13832
..._refrigerant	1 U	20001EAO13843
..._refill_chiller	1 U	20001EAO13843
..._job_cans	1 U	20001EAO13843
..._ruptured_tubes	1 U	20001EAO13844
..._removal	1 U	20001EAO13844

Predictive Behavioral Analytics

Problem: Can we implement crime-prevention programs to keep low-level offenders from 'graduating' to violent crime?

Solution: using arrest records find any evidence of escalating behavior

Table (4 fields, 12 records)

	ENTITY_ID	EVENT_DATE	EVENT_TIME	EVENT_DESC
8	661432	2008-03-06	21:05:00	summ_DISORDERLY CONDUCT
9	661432	2008-04-02	16:08:00	DANGEROUS DRUGS
10	661432	2008-04-05	20:40:00	DANGEROUS DRUGS
11	661432	2008-04-05	20:40:00	MOVING INFRACTIONS
12	661432	2009-06-23	00:27:00	ASSAULT 3 & RELATED OFFENSES

Burglary

Antecedent	Consequent	Instances	Support %	Confidence %
DANGEROUS DRUGS CRIMINAL TRESPASS summ_DISORDERLY CONDUCT	BURGLARY	23	3.016	100.0
summ_DISORDERLY CONDUCT DANGEROUS DRUGS	BURGLARY	31	4.068	100.0
DANGEROUS DRUGS DANGEROUS DRUGS summ_ALCOHOL_CONSUM	BURGLARY	27	3.675	96.429
CRIMINAL TRESPASS CRIMINAL TRESPASS summ_ALCOHOL_CONSUM	BURGLARY	26	3.543	96.296
summ_ALCOHOL_CONSUM DANGEROUS DRUGS	BURGLARY	26	3.675	92.857

consequent include any of

- antecedent include any of summ_ADMIN CODE summ_ALCOHOL_CONSUM summ_ALCOHOL_MINOR summ_ALCOHOL_OT
- confidence Above 0.0
- antecedent support Above 0.0

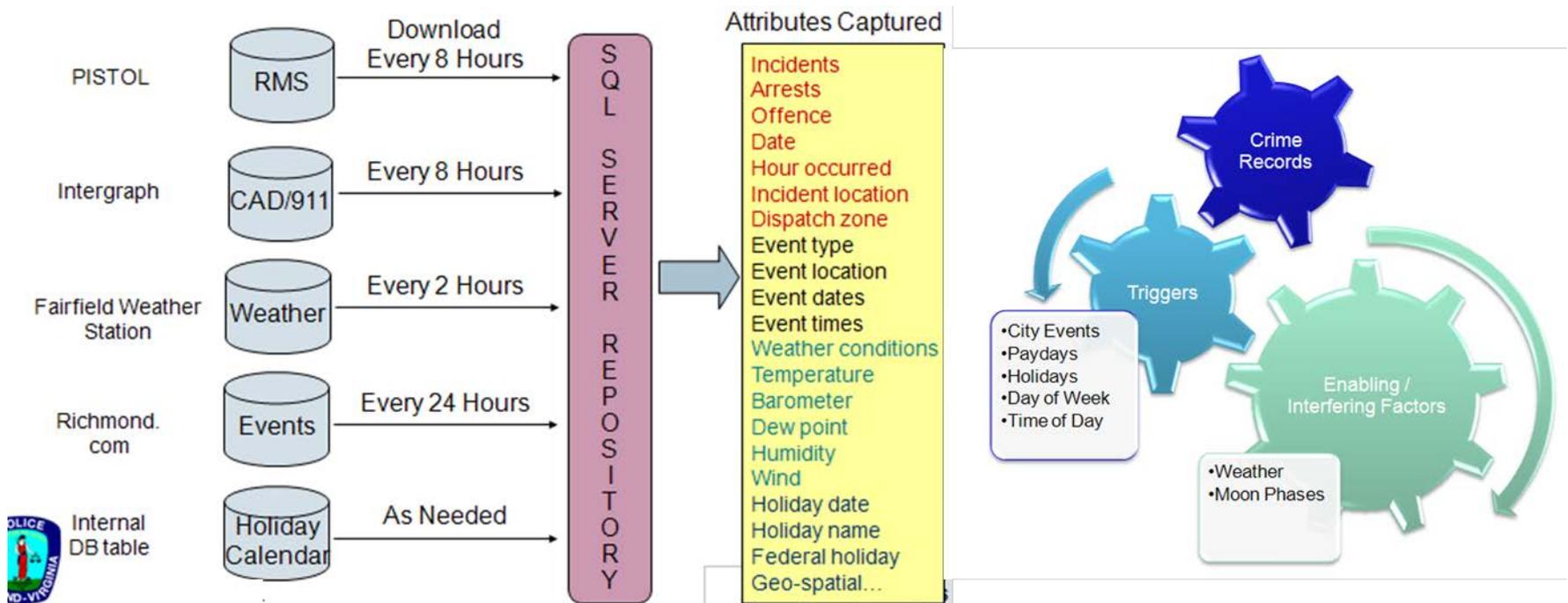


ENTITY_ID	Prediction 1	Confidence 1	Prediction 2	Confidence 2	Prediction 3	Confidence 3
661432	BURGLARY	1.000	DANGEROUS DRUGS	0.651	CRIMINAL TRESPASS	0.396

Competing Predictive Modeling for Greater Accuracy

Problem: Spiraling crime rates, limited officer resources -- better deployment decisions required

Solve: (In addition to incident data) weather, city events, holiday/payday cycles, etc – better picture of criminal incidents, more accurate prediction, more effective deployment



Moon Phases?



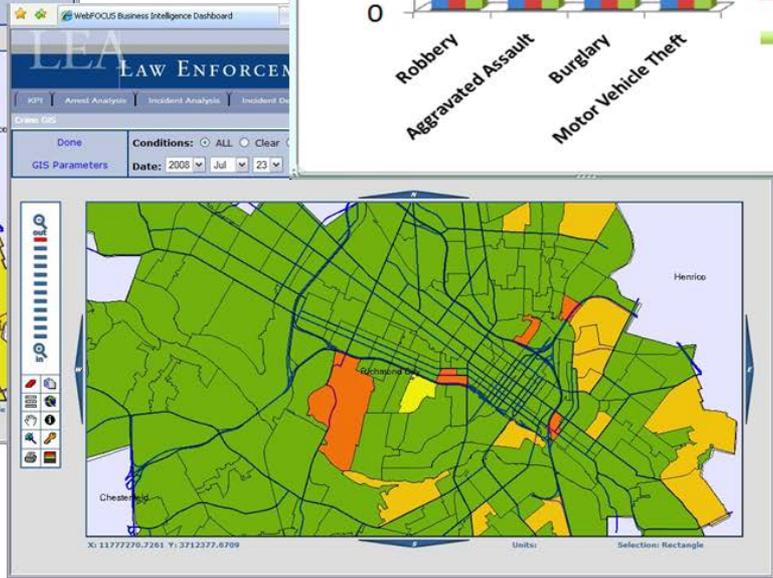
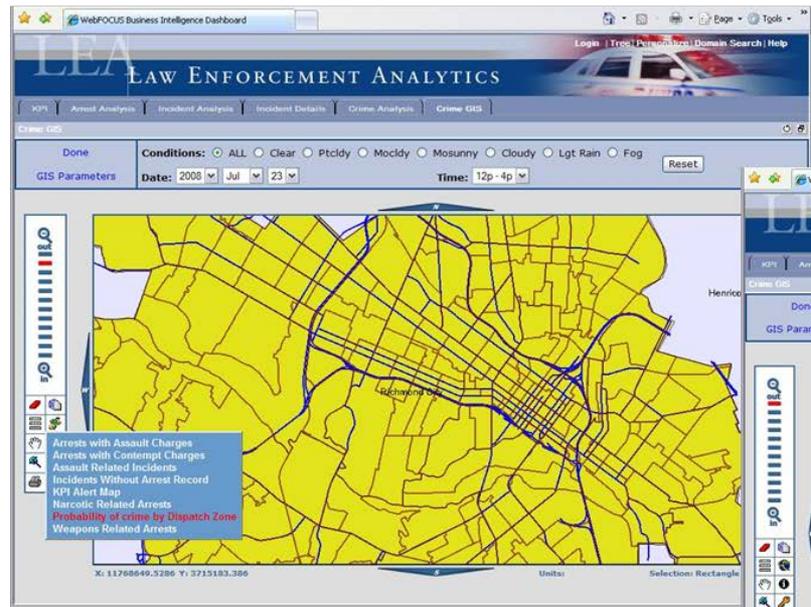
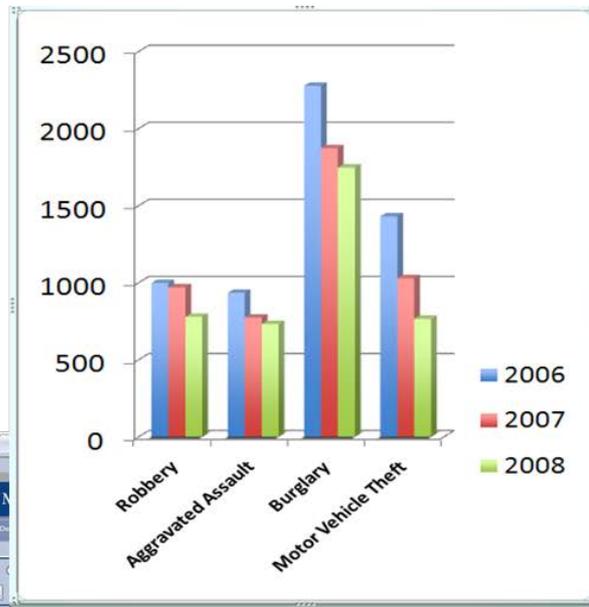
- Yes, Predictive Crime Models with years of data in Europe and the US have linked temperature, humidity and even moon phases to crime.

More Data, More Computer Power, More (Unexpected) Correlations

- Fewer and More Meaningful Measures are still better strategically.
- But, the explosion of available data and the decline in the price of computing power has allowed for better modeling and sometimes surprising relationships.

How Accurate is your Model?

*Implement. GIS 'hotspot' interface,
24/7 automatic model management
And real time evaluation of
resource deployment*



NYPD's real time crime center using analytics and GIS

Commander Dashboard - Predictive - Cognos Viewer - Windows Internet Explorer

http://cognosdemo/cognos8/cgi-bin/cognos.cgi?b_action=cognosViewer&ui.action=run&ui.object=%2fcontent%2fpackage&... Google

Commander Dashboard - Predictive - Cognos Viewer

Cognos Viewer - Commander Dashboard - Predictive

Commander Log Off About

Keep this version Add this report

Commander Dashboard

Real Time View (Past 24 hours)

Show/Hide Real Time Params Submit

Predicted Levels (Next 4 Hours)

Show/Hide Predictive Params Submit

Arrest Parameters

Select crime type:

- Property Crime
- Uncategorized (Pa
- Violent Crime

Select predictive period:

- Oct 16, 2009
- 8am - 12pm

Select weather condition:

- Sunny
- Partly Cloudy
- Cloudy
- Rain
- Heavy Rain
- Thunderstorm/He

Change staffing:

- +25%
- +10%
- +5%

Top Page up Page down Bottom

Internet 100%

Tactical Tweeting and Content Analytics (Key Word Blunt)

Refresh **Twitter Feed Display**

Feed *

Filter Now Reset

Search: blunt [Twordle](#)

kattwilliams Bout to light dis blunt
3 days ago · reply
70+ recent retweets

BreKardash RT @TravvHeartless: All you need for a good first date is Music , Blunt and some Call Of Duty ;)
15 seconds ago · reply

CDJohnson10 RT @HOODIELOC107: It's been times when I thought bout you marrying....then I hit the blunt again and snap bac to #Reality....
18 seconds ago · reply

AnFucknDukes @basicbitchsH8me wow, im sorry. That was way too blunt. LOL.
21 seconds ago · reply

Join the conversation

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Location
EAST ATLANTA, GA
KONYERS, GA

Web <http://www.facebook.com/BBNBO55/DSKB>

Bio all da kash I Blow on weed smoke dae say Boi its aye shame. #Abnormal TYPE OF GUY #BBN #ivanabitch @KylaPratt #TeamVirgo @GAFollowers

1,175 following 1,037 followers 57 listed

Tweets 6,897



TheyJockin_Rok GEECHIEBOI™ ☆☆☆☆☆

need some erbs

6 hours ago



TheyJockin_Rok GEECHIEBOI™ ☆☆☆☆☆

Koooolen on kirkland rd...

6 hours ago



TheyJockin_Rok GEECHIEBOI™ ☆☆☆☆☆

#youcanttrust the weed man lol

22 hours ago ☆ Favorite ↻ Retweet ↩ Reply

Tapping into Social for Actionable Intelligence (Counter Drugs & Narcotics)

Performance Institute's Local Partners and Clients Are Taking Comstat and BI to a New Level of Effectiveness:

1. Reaching Out to Academia and Sociologists
2. Pulling Data in from other jurisdictions to get models accurate early.
3. Using a variety of unstructured data in new ways

Predictive policing

Richmond had increased from 9th to 5th most dangerous city. Used *predictive analytics* for officer deployment and risk management. Violent crime decreased 30% in the first year.



Richmond, VA Police Department

Background and Challenge

- Richmond Police Department needed a solution that could identify crime trends and patterns quickly and inexpensively.
- No analyst or team of analysts could swiftly and accurately sift through all the data to uncover patterns that might indicate how to best deploy forces to prevent crime or determine whether or not a threat is real.

Solution

Data Modeler

- The RPD turned to data mining, a powerful and inexpensive tool that allows analysts to identify actionable patterns and make high quality decisions by fully exploiting huge data sets.

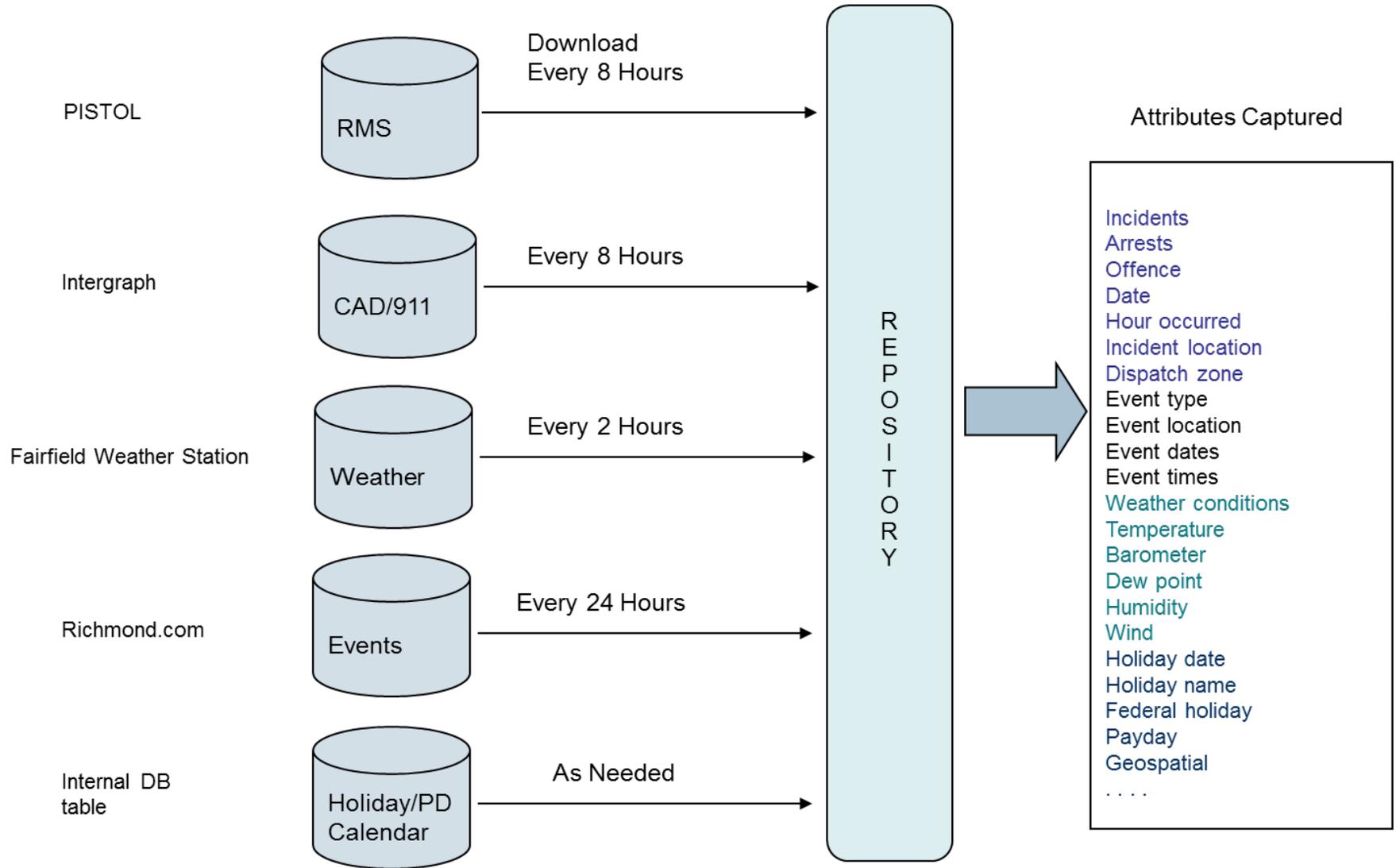
Benefits

- ✓ 30% decrease in homicides
- ✓ 15% decrease in other violent crime
- ✓ Faster, more targeted deployment of policing resources
- ✓ Identified minor crimes likely to escalate into violence
- ✓ Accelerated the criminal investigation process

"This is as **close to a crystal ball** as we are ever going to get."

*Colleen McCue, Program Manager
Richmond Police Department*

Data Tier: Moving To A Fusion Center



New York City Police Department

Background and Challenge

- The New York City Police Department has primary responsibility for law enforcement and investigation within its five boroughs. The NYPD has approximately 37,000 sworn officers.
- NYPD needed to more effectively exploit its data resources to strengthen its processes and fight crime.

Solution

Crime Information Warehouse with robust Business Analytics

- A real-time Crime Information Warehouse that makes NYPD more proactive and effective in fighting crime.

Benefits

- ✓ Support for more proactive policing tactics by the ability to see crime trends as they are happening
- ✓ More efficient use of NYPD resources, for more public safety per tax dollar
- ✓ Faster and higher rate of case-closing through more efficient gathering and analysis of crime-related data
- ✓ Improved officer safety through better risk-assessment capabilities

“The NYPD's innovative policing strategies depend on our ability to gather, share and act on information. Our people, partners and technology—have helped us **redefine how information can be used to fight crime.**”

James Onalfo, Chief Architect and CIO, NYPD



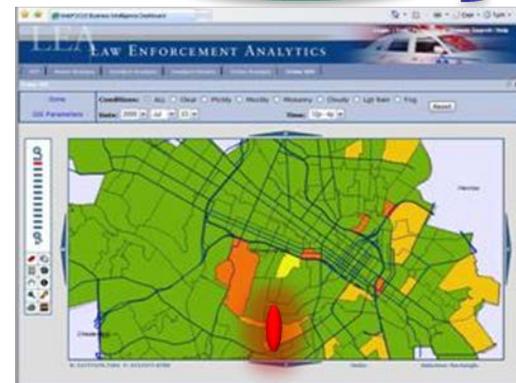
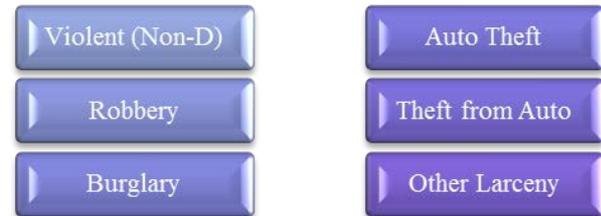
Better and timelier information

- Real time crime center – founded on a crime information warehouse - in NYPD joins and analyzes billions of records from multiple sources.
- “It used to take us days to find a number or an address. Now we send stuff to detectives who are literally standing in the blood”.



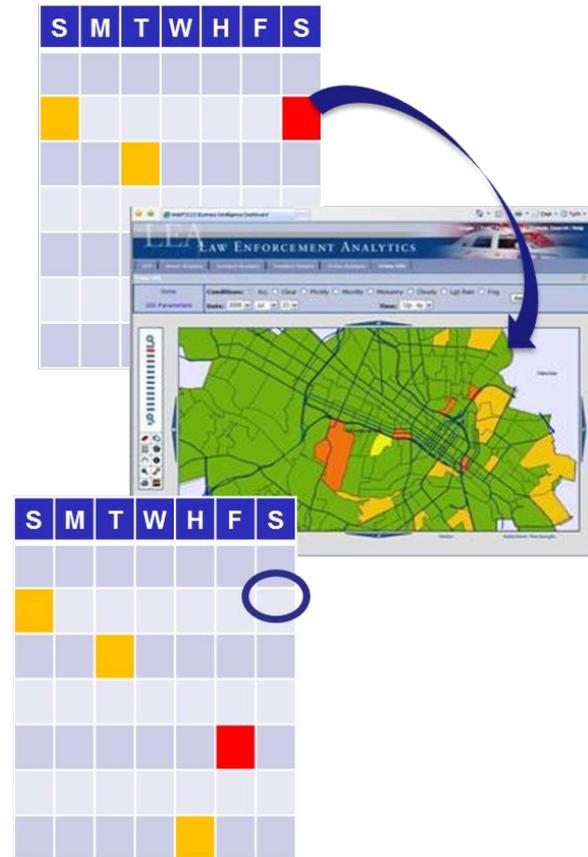
Predictive Analytics

- *Provide more granular predictors (6 crime types)*
- *Include GPS data from vehicles as a factor for models*
- *Enhanced notifications to officers when they enter >90% dispatch zones*



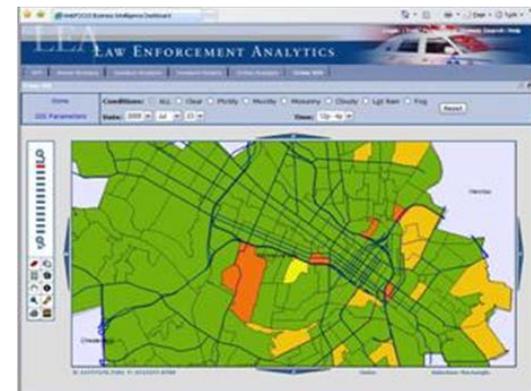
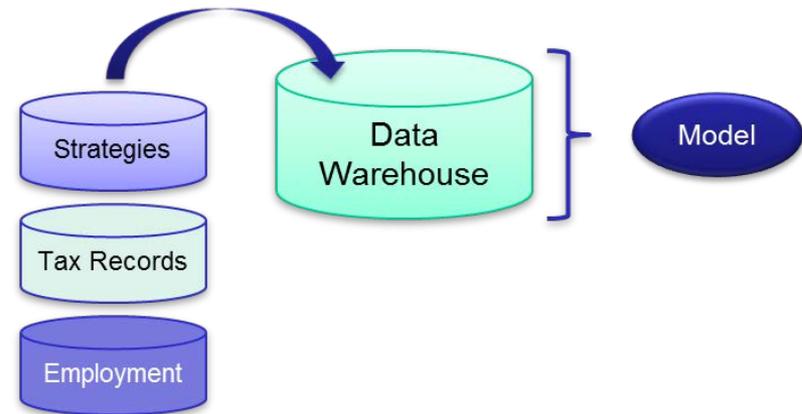
7 & 30 Day Analysis

- *Predict intensity of crime by 4 hour windows within 7 and 30 day forecasts*
- *Provide single click interface directly to GIS perspective for each 4 hour window*
- *Provide “what if” scenario options based on deployment tactics*



Strategy Analysis

- *Compile database of successful strategies from the past 5 years with geocodes*
- *Import existing historical data from local agencies with geocodes*
- *Analyze strategies in congruence with advanced analytics to predict best strategies based on geocode*



Improved fire safety

NYFD & NY Buildings

Breaking down silos for better data and saving lives.

Collect and share real time data on building inspections, link with maintenance databases... use predictive analytics to move to risk-based inspection... provide firefighters with up to date information where and when they need it



Memphis, TN Police Department

Background and Challenge

- With traditional policing practices unable to thwart a rising rate of criminal activity and budgets tight, the Memphis Police Department pioneered a way to focus their patrol resources more intelligently.

Solution

Teaming with The University of Memphis

- By recognizing crime trends as they are happening, MPD's predictive enforcement tool gives precinct commanders the ability to change their tactics and redirect their patrol resources in a way that both thwarts crimes before they happen and catches more criminals in the act.

Benefits

- ✓ Provides near real-time access to operational data, helping PSNI react faster.
- ✓ Standardizes the reporting process across all districts and eliminates spreadsheets and manual reporting.
- ✓ Accelerates report generation, making it easier to deliver monthly reports.
- ✓ Simplifies management of risk registers by automatically notifying risk-owners when action needs to be taken.

“This has allowed us to **take a new look and gain a totally different perspective** on our data that we've always had.”

*Jim Harvey, Deputy Chief of Administrative Services,
Memphis Police Department*

Police Service of Northern Ireland

Background and Challenge

- Like all UK police forces, the Police Service of Northern Ireland (PSNI) works to a policing plan which specifies a wide range of operational targets.
- The service wanted to find a way to monitor its performance and assess risks more accurately, providing better visibility for decision-makers at all levels of the organization.

Solution

Combined Business Intelligence

- PSNI built a BI tool that centralizes information from Northern Ireland's eight police districts and allows police officers to view both actual and forecasted data about performance and risk.

Benefits

- ✓ Provides near real-time access to operational data, helping PSNI react faster.
- ✓ Standardizes the reporting process across all districts and eliminates spreadsheets and manual reporting.
- ✓ Accelerates report generation, making it easier to deliver monthly reports.
- ✓ Simplifies management of risk registers by automatically notifying risk-owners when action needs to be taken.

"Since the data is updated every day, we can get a picture of whether the situation is improving, which **helps us allocate our resources more effectively.**"

Inspector Amanda Brisbane, Corporate Performance Manager, Police Service of Northern Ireland

Mecklenburg-Vorpommern State Police

Background and Challenge

- The Mecklenburg-Vorpommern State Police was looking to help manage its information more efficiently by standardizing and aggregating data from different sources.
- They needed user-friendly analysis tools to provide more reliable, complete and up-to-date decision-making information.

Solution

Ad Hoc Query Tool

- Ad Hoc Query tool provides managers at every level with fast, transparent access to important decision making information throughout the organization.

Benefits

- ✓ Homogeneous, automatically updated decision-making information
- ✓ Targeted provision of information based on requirements
- ✓ Single-entry and multiple use of data
- ✓ Fast, flexible multidimensional analyses in an easily understandable format

“The possibility of combining information and viewing it from all angles has **opened up completely new approaches for investigation work.**”

*Police Commissioner Thomas Helm
Mecklenburg-Vorpommern State Police*

Edmonton Police Service

Background and Challenge

- Improve insight into the Edmonton Police Service's data to help police stay on top of criminal activities, identify hot spots, reduce crime rates and communicate more effectively with commanders and the public.

Solution

Hotspot Project

- Enhanced Comstat allows Edmonton Police Service to make more informed decisions, improving performance, accountability and strategy.

Benefits

- ✓ Increased accountability; increased effectiveness and efficiency
- ✓ Corporate- and business-layer views
- ✓ Strategic and tactical reporting that supports decision making and problem solving
- ✓ Greater insight into response time issues and other performance indicators
- ✓ Improved communication with the public

"BI helps us **put crime information into the hands of our front-line patrol officers** so they can directly support problem-solving initiatives with our community partners."

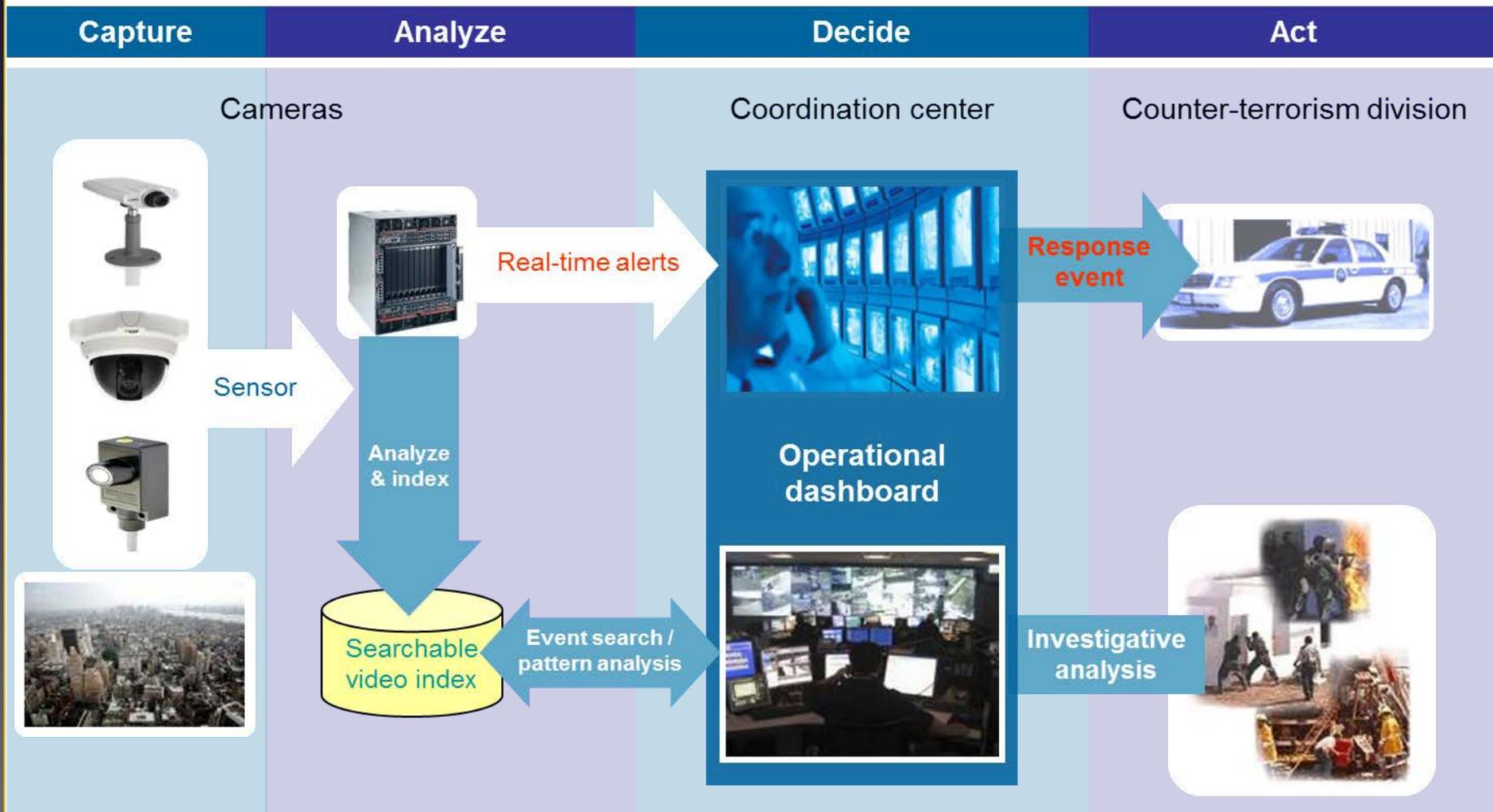
John Warden, Edmonton Police Service

Unstructured information analytics

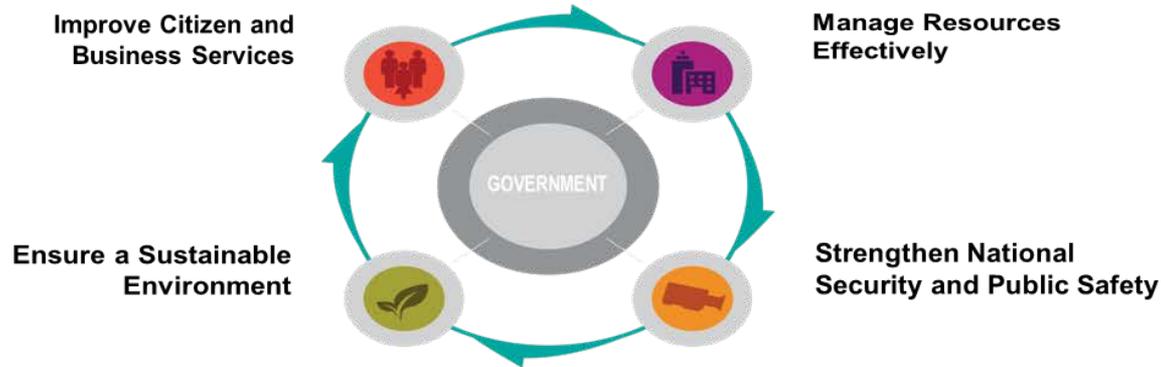
- Cities are deploying cameras, microphones, building control systems – across public and private sectors – that can be brought together to help achieve the public safety mission.



Analytics can assist the use of video to help create safer urban environments



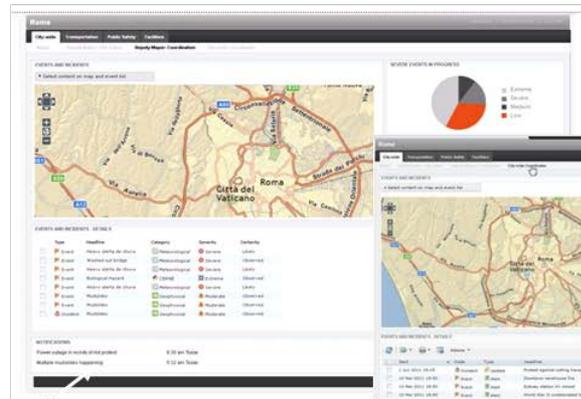
More broadly, analytics can drive insight to inform all the decisions of local (and eventually Federal) government



- Leave a legacy
- Spend public funds responsibly
- Achieve specific outcomes from all agencies, departments and workgroups
- Tie mission, operational and financial performance together

Shared analytics capabilities via the Intelligent Operations Center

Event Management



Incident Escalation



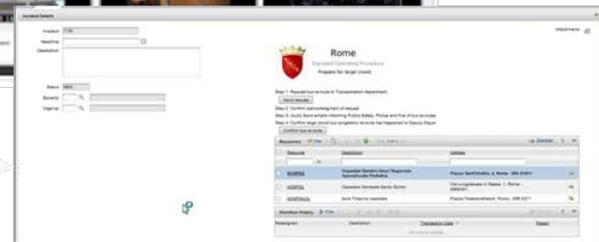
City at a glance



Video Analytics
And other solution
Connections



Workflow Management



Bring together large volumes and varieties of data for new, actionable insights for all levels of government



Multi-channel customer sentiment and experience analysis



Detect life-threatening conditions at hospitals in time to intervene



Predict weather patterns to plan optimal wind turbine usage, and optimize capital expenditure on asset placement



Make risk decisions based on real-time transactional data



Identify criminals and threats from disparate video, audio, and data feeds

Sharing What We Know with OMB and Congress

- Modifying Stat techniques work at the Federal Level
 - Less Real Time Data
 - Less Direct Service to Citizens
 - Less Dynamic Response to Daily Changes
 - How do we Bring Analytics to Policy Makers and National Decisions?

Its Governance and Management *Not* Technology.

“Doing What Works”

- Obama: Not too big or small, but what works
- Goal Setting is a powerful statement of priorities.

Why haven't we been Using Performance Information?

- Static “unchangeable” Measures
- Little Analytic Capacity
- Paper Reporting Emphasis
- Lack of Leadership Candor
- Little room for discussion & debate

Problem Solving Networks

- Cross-Agency Emphasis on shared goals and similar problems
- Spreading use of innovative precursor measures
- Understanding “near misses”

Leading Practice: NHTSA

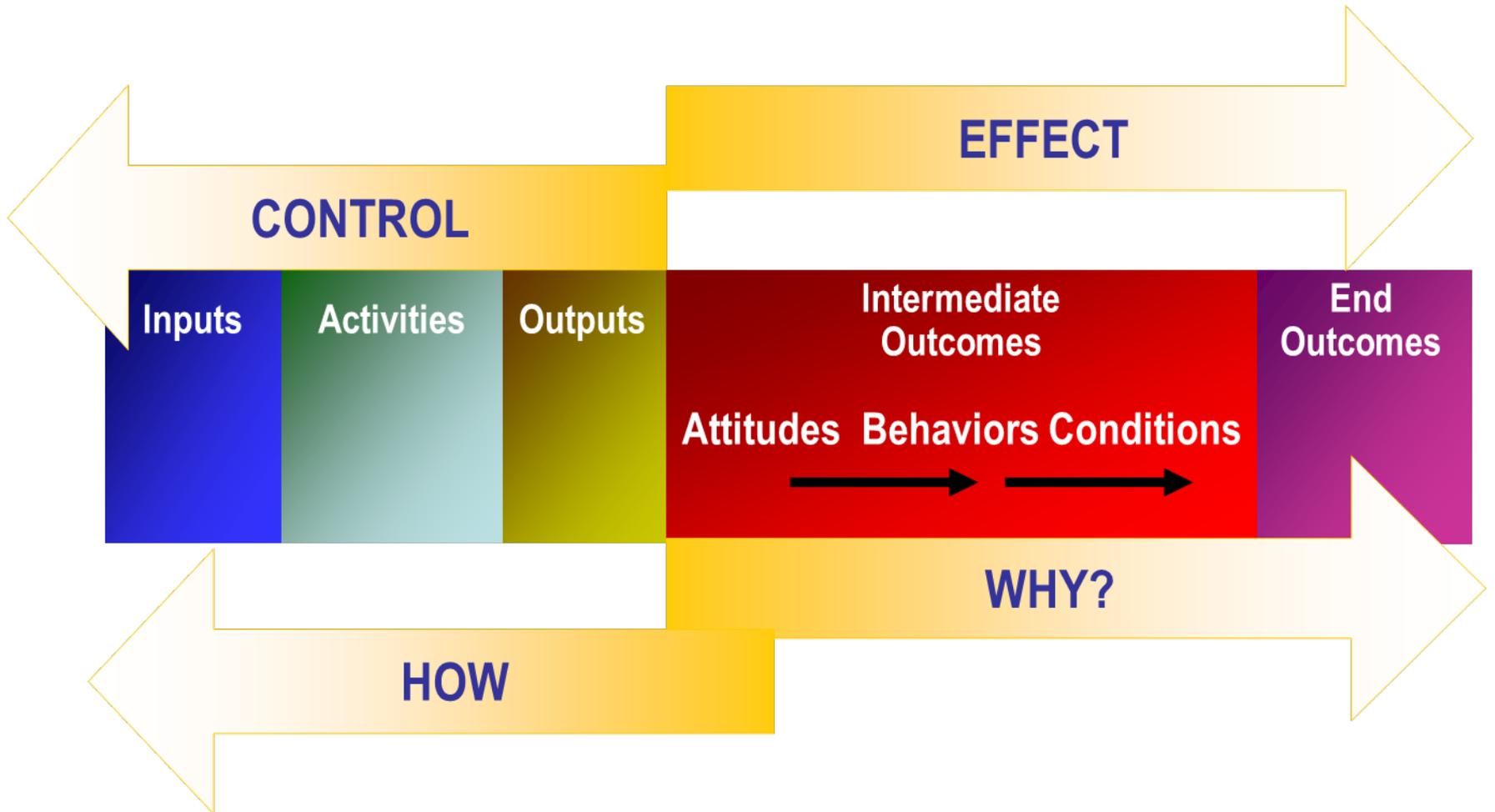


YOU WILL GET A TICKET FOR NOT WEARING YOUR SAFETY BELT.

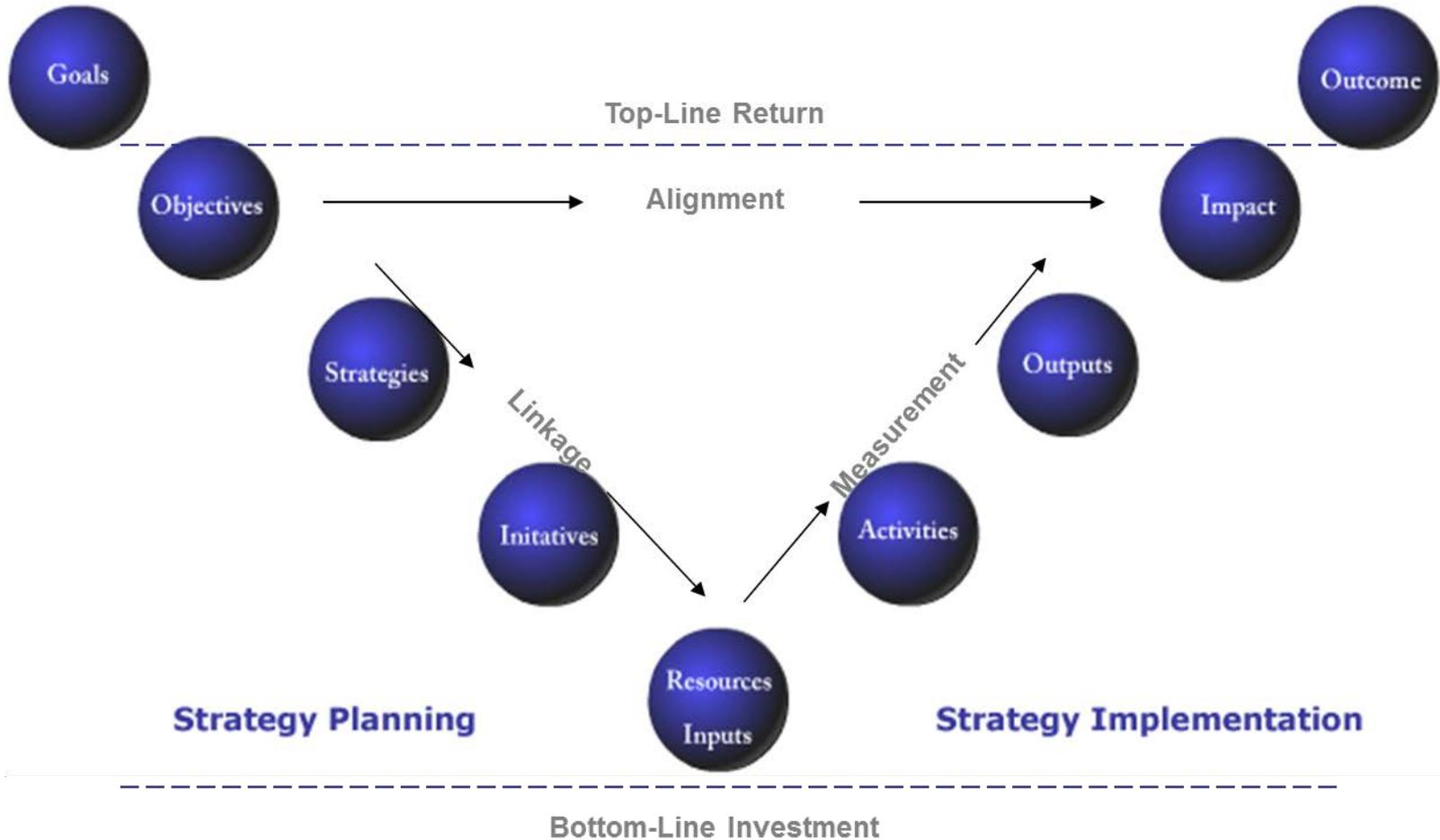
Safety belt enforcement is being stepped up everywhere. It doesn't matter where you drive, they'll be looking for you. Simply, law enforcement writes tickets to save lives. So buckle up or you will get a ticket. No exceptions.

- State Data Provided Important Leading Indicators:
- “When Accidents Can’t Be Prevented, Costs can Be Reduced.”
- Tracking which states use which grants and penalties and their impact on outcomes.
- Dramatic Savings in Lives and Health - 90% Seat Belts
- Constant Updating of Models using State information

The Power of Leading Indicators



Logic Model “V”



Identifying intermediate outcomes through Center of Gravity Analysis

Center of Gravity Analysis

1. What attitude, behavior or condition needs to change to achieve the end outcomes? (Target)
2. Identify who possesses the critical capability to cause the change or achieve the end outcomes. What must they do? (Who & What)
3. How can you get them to do that? (How?)

Intermediate outcomes target the changes in attitudes, behaviors or conditions that are required to achieve end outcomes

Reducing teen smoking

Attitudes: Alter the belief that “smoking is cool”

Behaviors: Decrease number of “new” smokers ages 12-15

Conditions: Reduce the amount of cigarettes sold to underage smokers

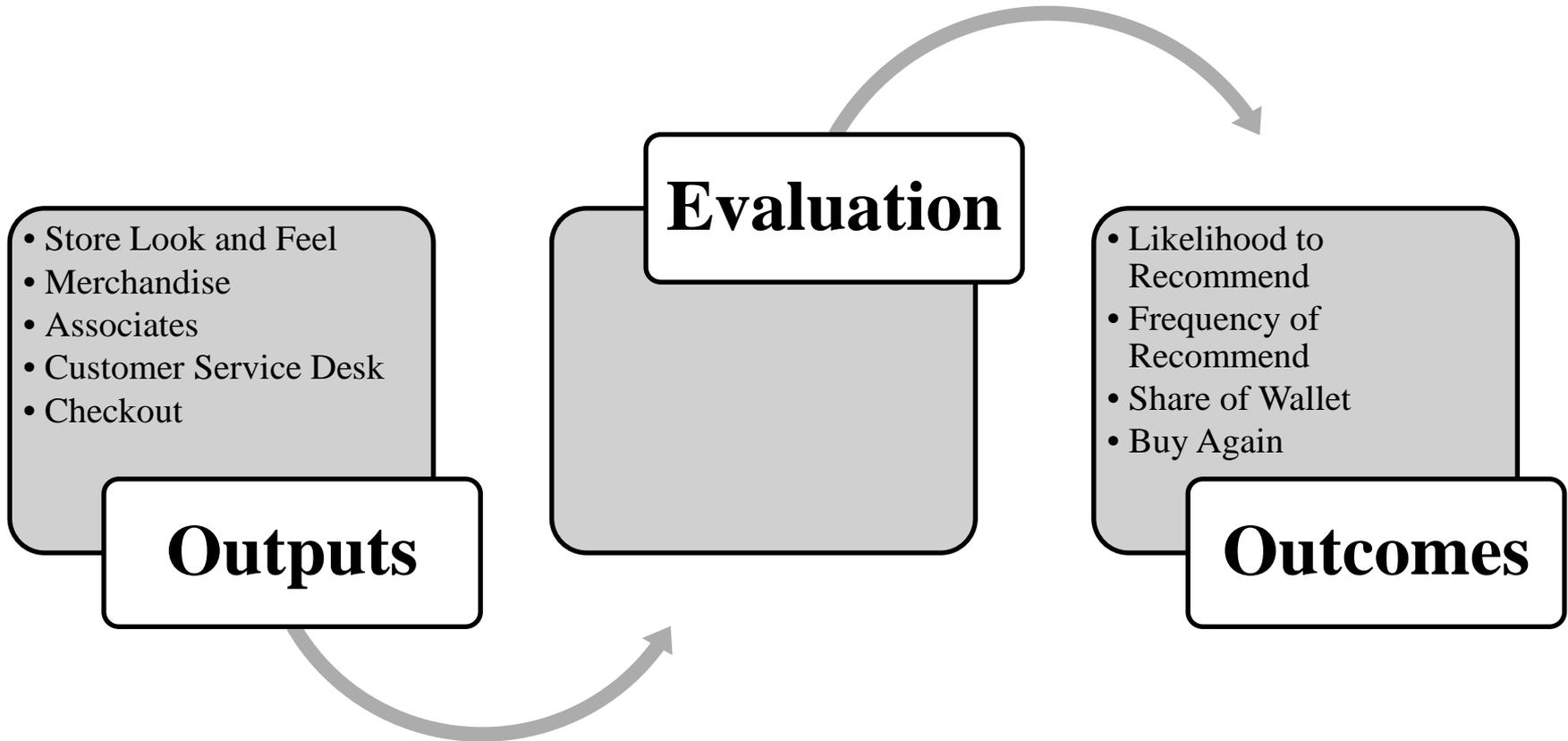
Target Setting for Greater Transparency

- Most organizations do some sort of target setting with some regularity
- Many organizations limit their efforts to targeting a period-on-period improvement

Spend Right

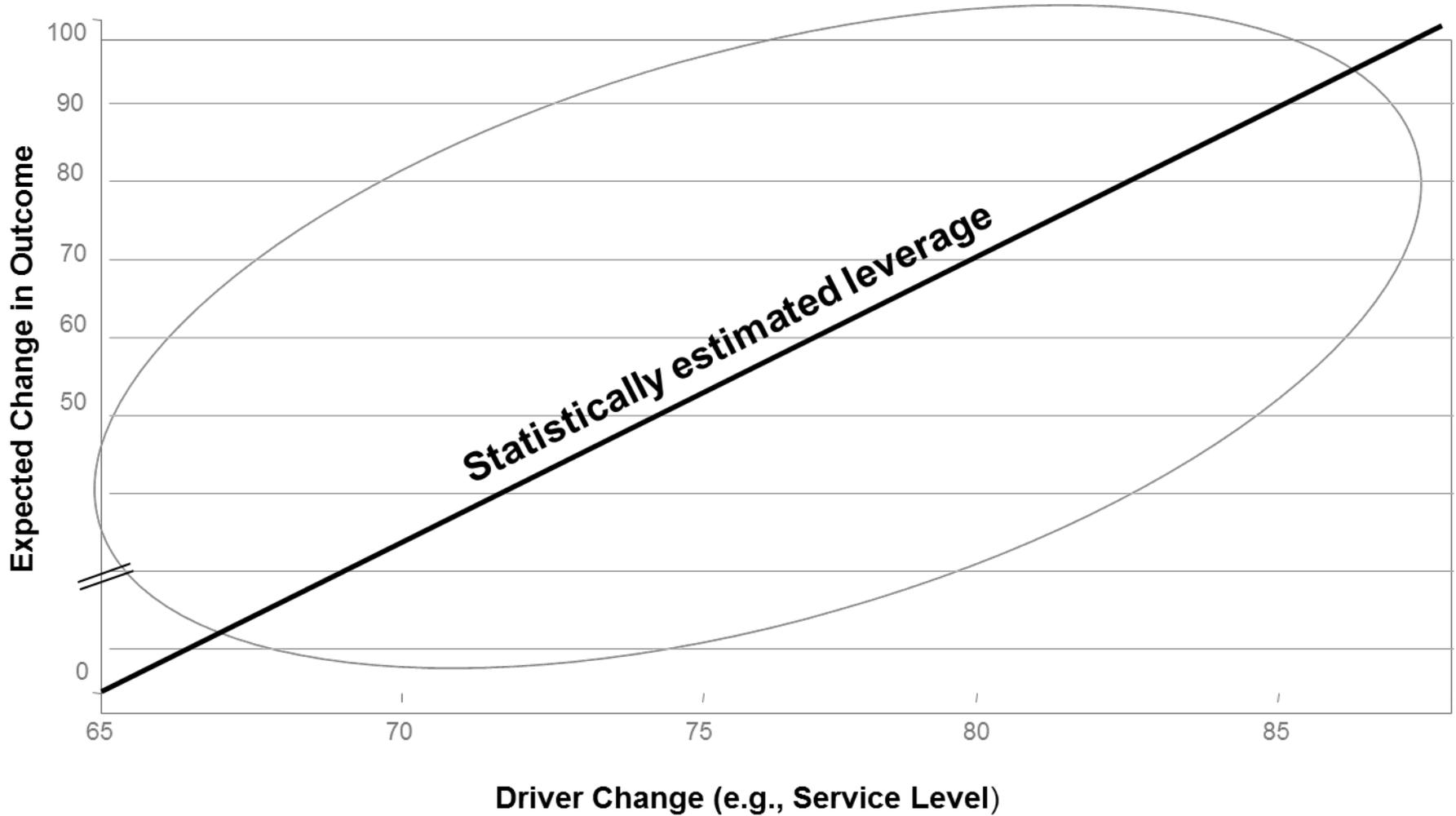
- Budgets are tight
 - > Spending smarter is an imperative
 - > Avoid over spending—and under spending in the wrong areas
- Satisfaction guides spending
 - > Customer satisfaction data can help set accurate targets
 - > Get maximum gains for minimal investments

Sample Satisfaction “Model”

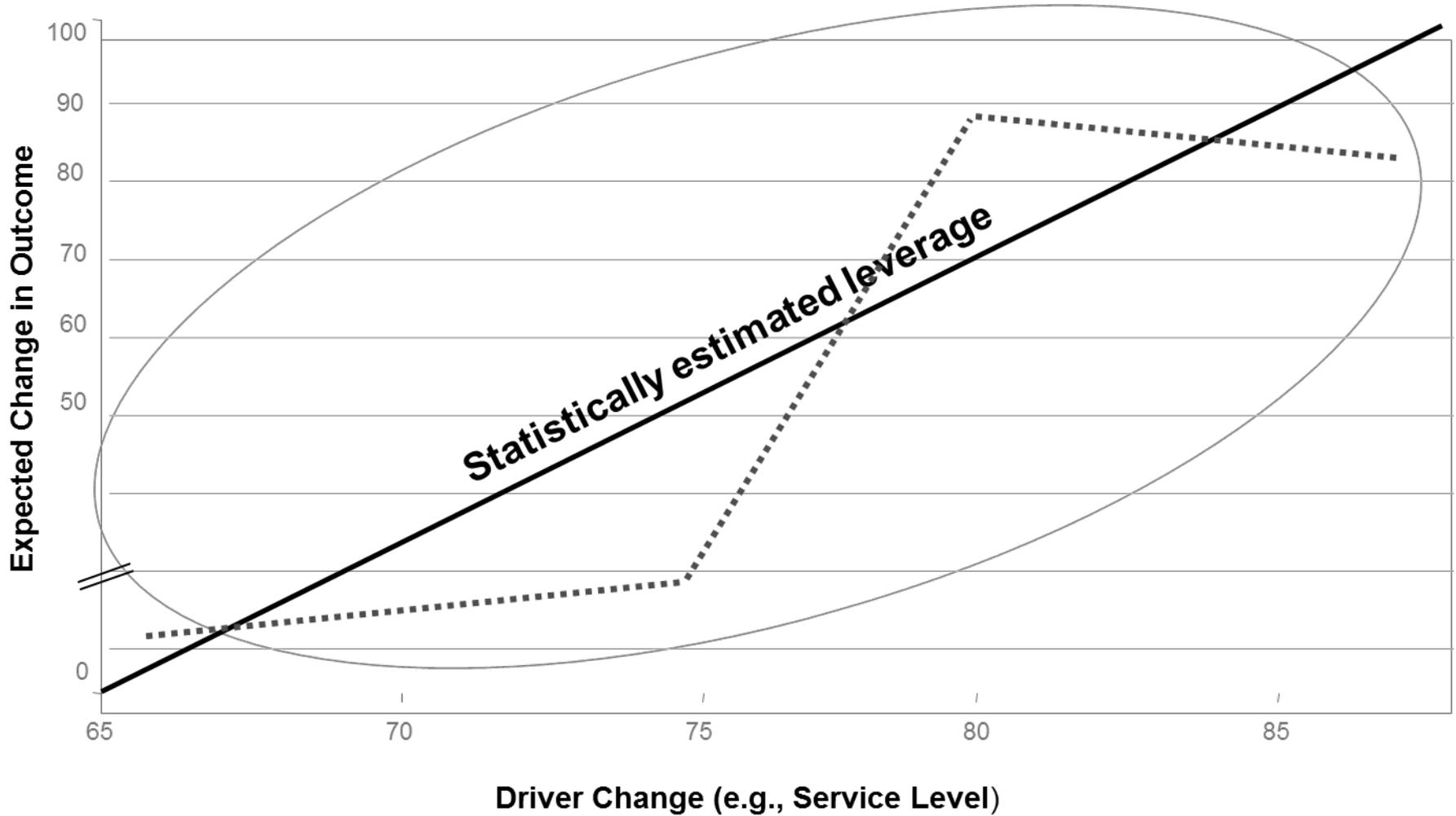


Where to improve
Where to invest next

Too Simple to be Accurate (?)



Too Simple to be Accurate (?)



Pension Benefit Guaranty Corporation



>Evaluated key customer touch points including:

- Automated phone system – Rated Poorly
 - Customer care staff – Rated Average
 - Written communications – Rated Average
-
- Where Should PBGC target Measurable Improvement?

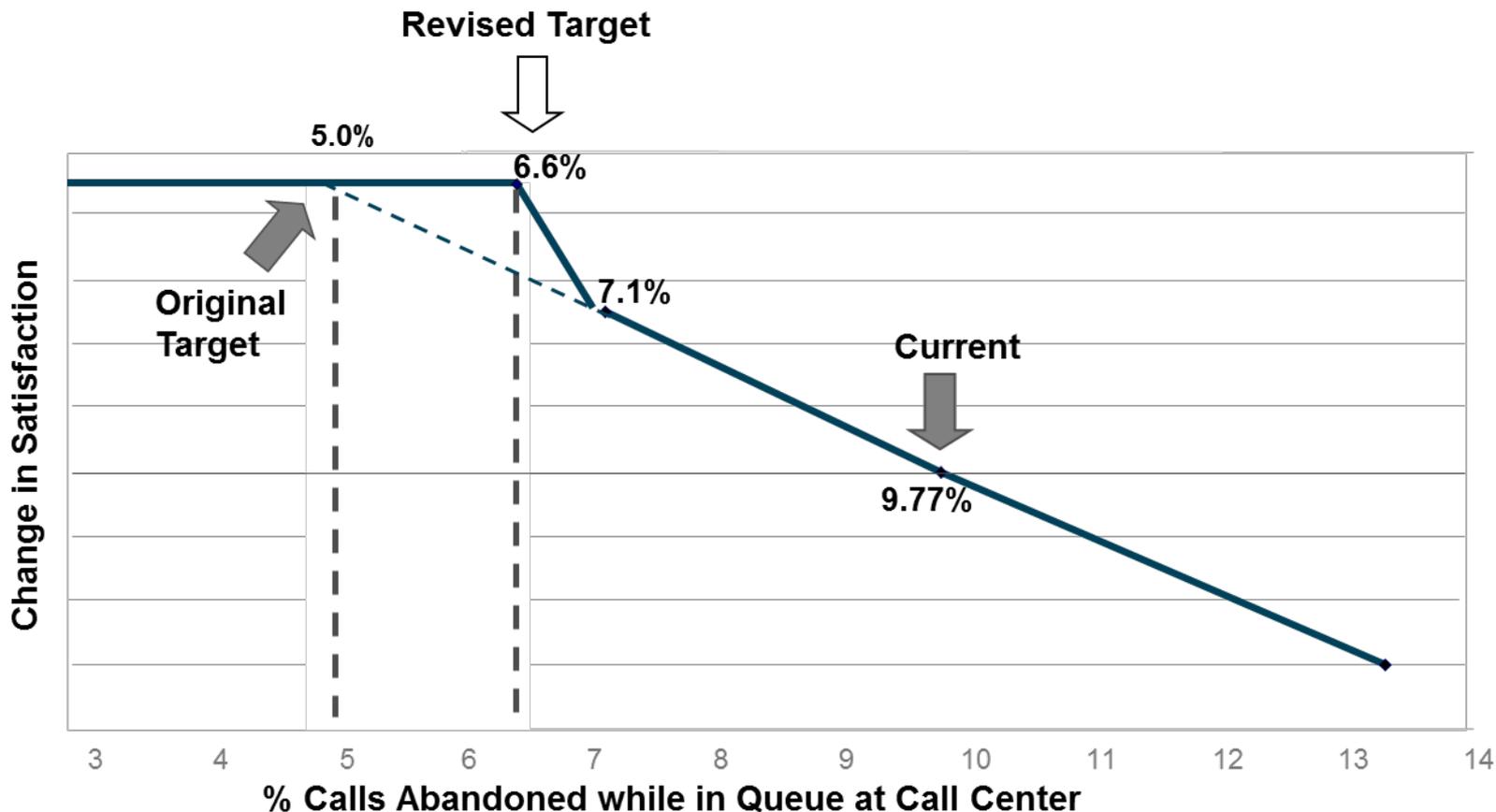
Pension Benefit Guaranty Corporation



- >Determined that written communications provided greatest leverage for improving customer satisfaction
- >Solution was must less costly than investing in the automated phone system, which was the lowest scoring area

Optimizing Contact Center Metrics

Qualitative “best practice” indicated 5% was a good target.



Integrating Modeling and Evaluation



World Health
Organization

- Closing the Gap between the two approaches
- Full Scale Randomized Control Style Fading
- Rapid Epidemiology approach:
 - Evaluating for a limited number of factors
 - Comparing a limited set of peer groups
 - Taking promising practices and expanding them quickly

Lessons Learned

- Changing Governance Structures and Breaking Down Silos, harder than the technology.
- The Power of Measuring Failure – Don't be afraid to Experiment
- Asking the Right Questions
- Transparency to the public brings focus and faster problem solving

Selecting Your Measures

The Program Performance Assessment Window™

I M P O R T A N C E	4	Attention Needed <i>a</i>	Proven Success
	3		<i>b</i>
	2	Exit Opportunity <i>c</i>	Resources Available
	1		<i>d</i>
		1 2 3 4	PERFORMANCE

Factors
a = I4, P2
b = I3, P3
c = I2, P1
d = I1, P4

What next?

- Do you see the potential for analytics in the work you do?
- What capabilities do you already have?
What do you lack?
- Does a shared analytics capability across your departments make sense?