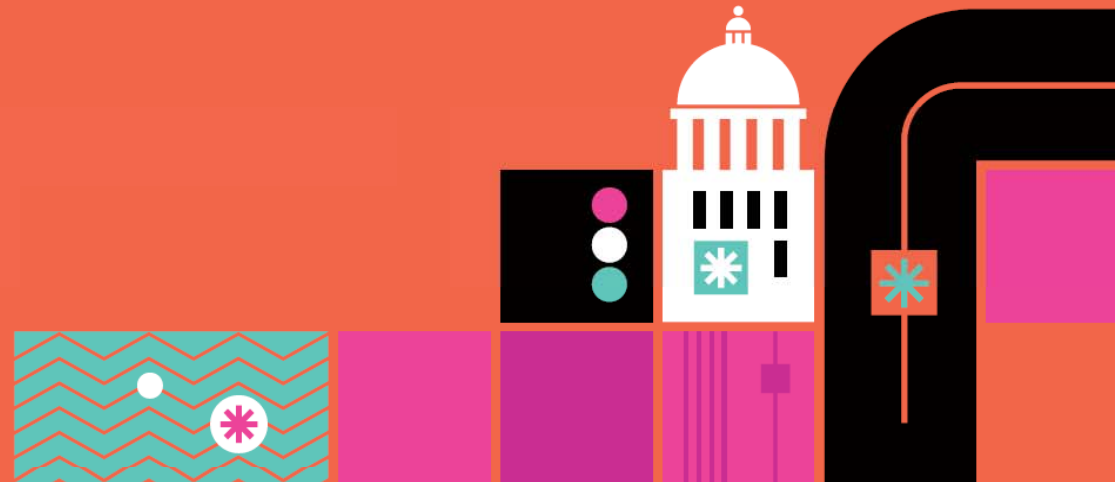


Smarter software for a smarter planet.

The IBM® Smarter Government Briefing Series

Briefing 1: Smarter Business Analytics
Transforming data into actionable insights



Business Analytics for Government

Christo Nel: Business Analytics Client Technical Manager, IBM



Agenda

1. Why Business Analytics in Government?
2. Business Analytics value proposition
3. Applying Business Analytics to Social Services
4. Crime Prevention
5. Content Analytics
6. Questions and Answers





Why Business Analytics in Government?

“...management is essential for government agencies seeking to **improve outcomes**... in government.”

Kennedy School of Government, Harvard University



Challenges facing Government today



Good Governance



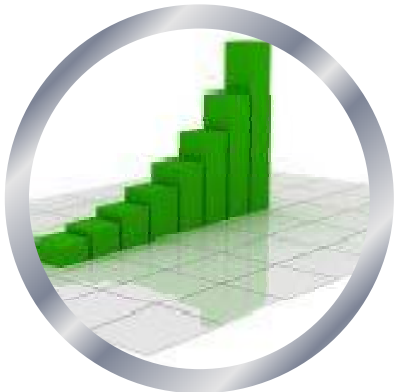
Ongoing Budget Pressures



Outcome-Based Decision Making



Transparency & Accountability



Ongoing Improvement with Less Resources

IBM Business Analytics Value Proposition for Government



IBM Business Analytics delivers **actionable insights** for **decision makers** at all levels of your organization, enabling them to **optimize** performance



IBM Business Analytics Addresses Key Government Needs



Business Intelligence

Query, reporting, analysis, scorecards and dashboards to enable decision makers across the organization to easily find, analyze and share the information they need to improve decision making

Advanced Analytics

Data mining, predictive modeling, 'what if' simulation, statistics, and text analytics to identify meaningful patterns and correlations in data sets to predict future events and assess the attractiveness of various courses of action

Financial Performance & Strategy Management

Budgeting and planning, financial consolidation, scorecarding and strategy management, financial analytics and related reporting capabilities to help simplify, structure, and automate dynamic and sustainable financial performance and strategy management practices

Analytic Applications

Applications that package business analytics capabilities, data models, process workflows and reports to address a particular domain or business problem (e.g. customer, workforce, supply chain and financial performance management)

Optimize Business Performance through.....

- ✓ Actionable insights for decision makers
- ✓ Consistent, accurate and trusted information
- ✓ Rich industry solutions, proven practices and professional services



Scorecards & Dashboards

Reports & Analysis

Real-Time Monitoring



Target



How are we doing?

Decide and Act

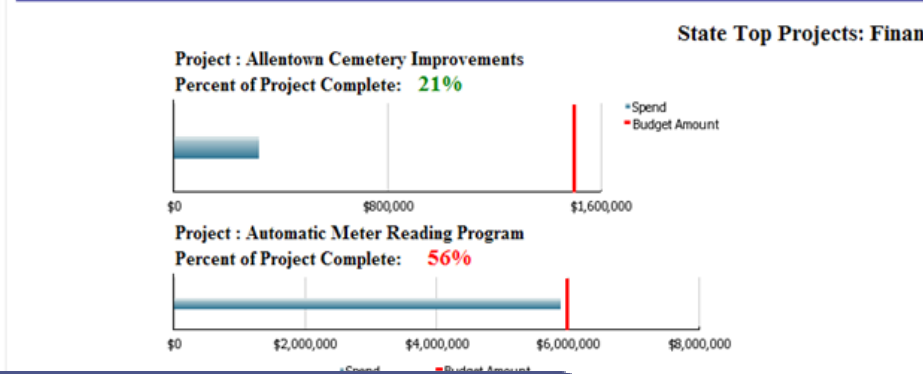
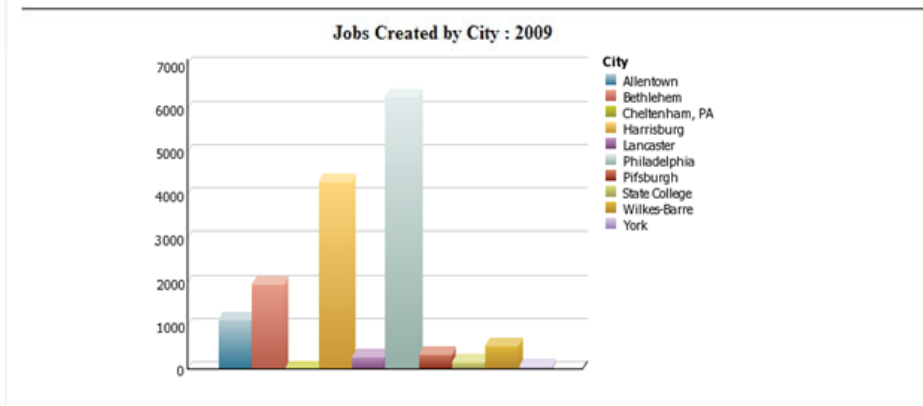
News Item

Name @
[Capital Spend Increased 10%](#)

tion Reports

Name @
[Monthly Finished Water Statistics](#)
[Governors Budget Book](#)
[State Budget Variance Report](#)
[State Project Management Dashboard](#)
[State Service Request List](#)

Job Creation Rate 2.90%



Immediate Insights to Performance



Ad Hoc Query

Trend & Statistical Analysis

Content Analytics

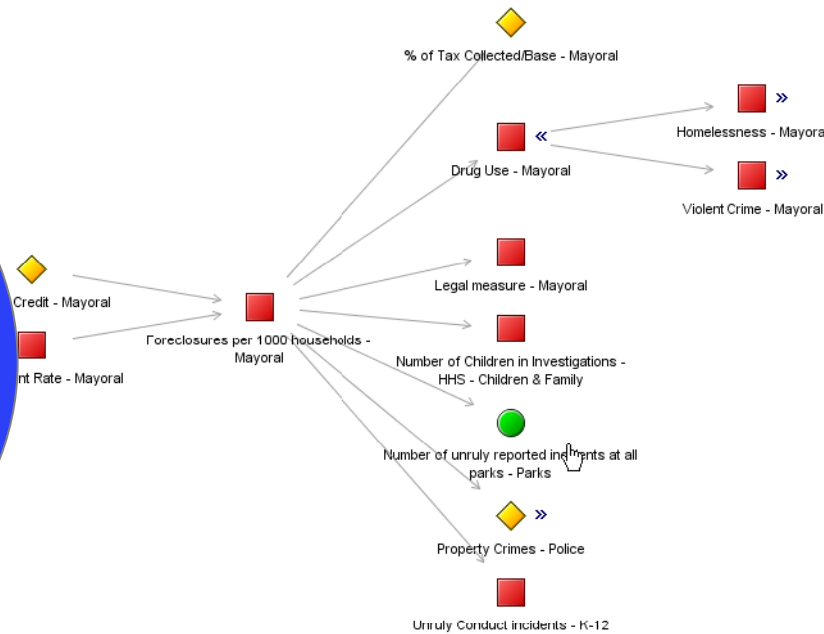
Anonymous Feb 13, 2008

Impact Diagram

Functional impacts Show actions

Why?

Decide and Act



Deeper Analysis of Trends & Patterns

Available Diagrams

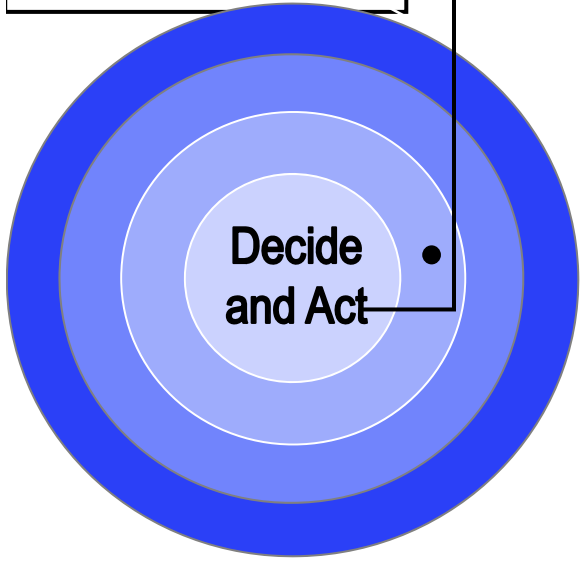


What if Scenarios

Predictive Modeling

Planning & Budgeting

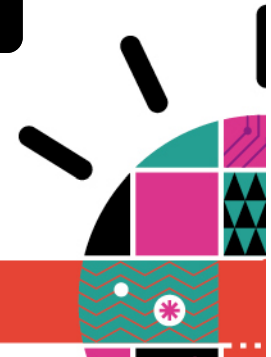
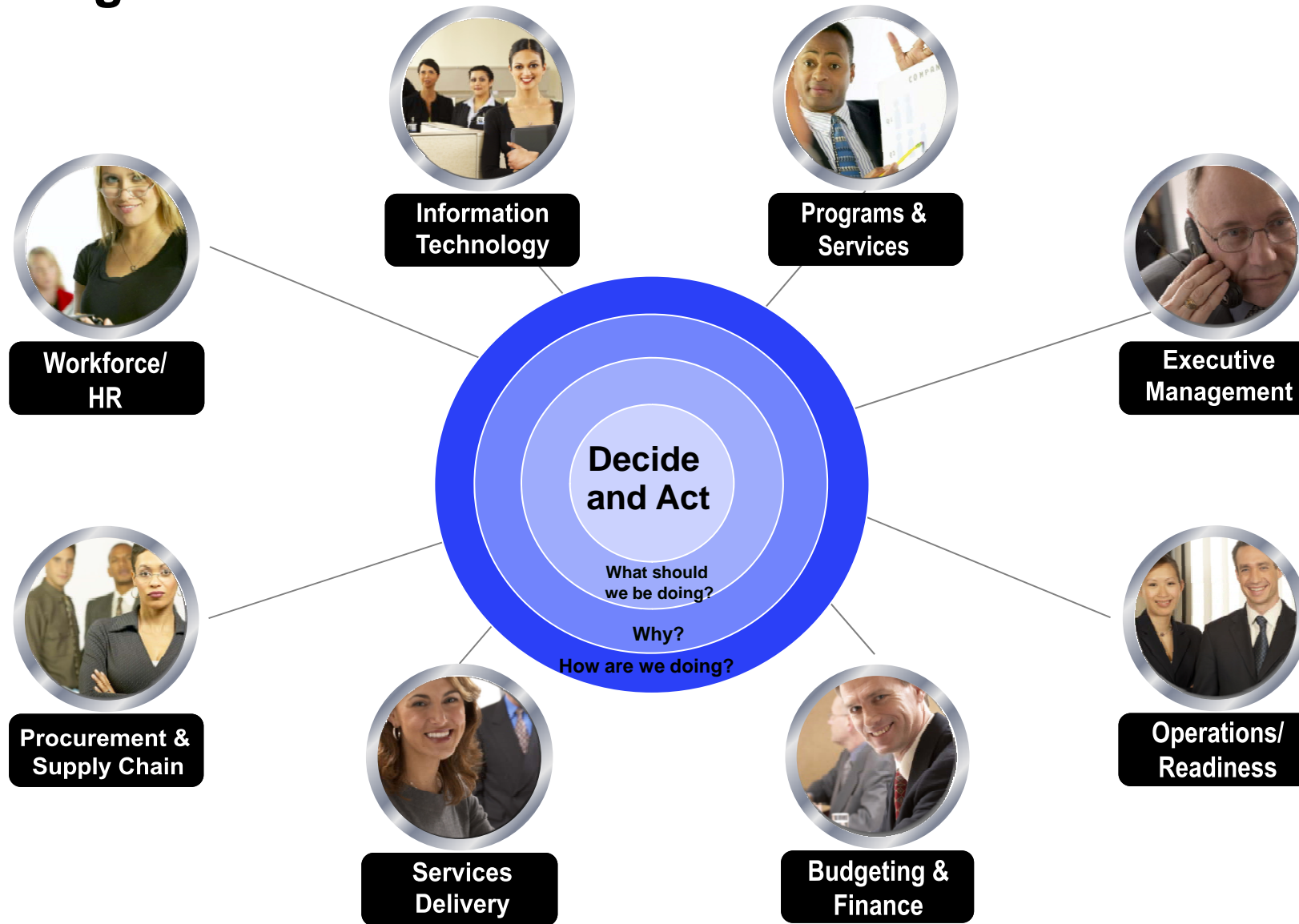
What should we be doing?



Foresight to Plan & Allocate Resources



Informed, Aligned Decisions and Actions within the Organization



...With Silos that Can Isolate Decision-Making, Impacting Outcomes



**Workforce/
HR**



**Information
Technology**



**Programs &
Services**



**Executive
Management**



**Procurement &
Supply Chain**



**Services
Delivery**



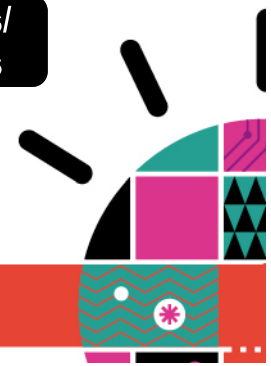
**Budgeting &
Finance**



**Operations/
Readiness**



Analytics Can Help Achieve Outcomes-Based Government



Performance is Driven By Key Factors, Each Linked to the Other



Analytics Helps Manage & Improve Performance for Better Outcomes



**Mission
Performance**



**Financial
Performance**



**Operational
Performance**

- Mission, financial and operational factors define agency imperatives.
- From those imperatives, measurable goals and objectives are developed that measure outcomes.
- Business Analytics helps to manage the outcomes required and demanded for and by citizens.



Business Analytics for Social Services



**Mission
Performance**



**Financial
Performance**



**Operational
Performance**

- Complete view of programs and budgets
- Predict trends
- Manage and reduce risk
- Improve operational efficiency
- Increase transparency and accountability
- Drive better outcomes



An Approach for All Line of Business Roles within Social Services



Business Users

Executives, Agencies, Departments Heads, Staff

Strategic view of programs and budgets and how to manage to those goals through metrics, predictive modeling and performance management.

View of information across departments and agencies to measure and monitor departmental / agency performance and drive better outcomes

Chief Financial Officer, Budget officers, Financial Staff

Strategic view of revenue streams, budgets, costs either government-wide or at the agency or departmental level.

Accurate, streamlined finance and budgeting government-, agency-, department-wide, scenario-based analysis through predictive modeling.



Finance

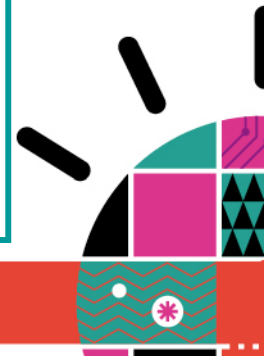


Information Technology

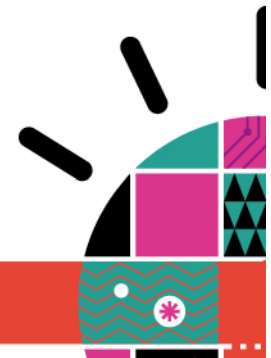
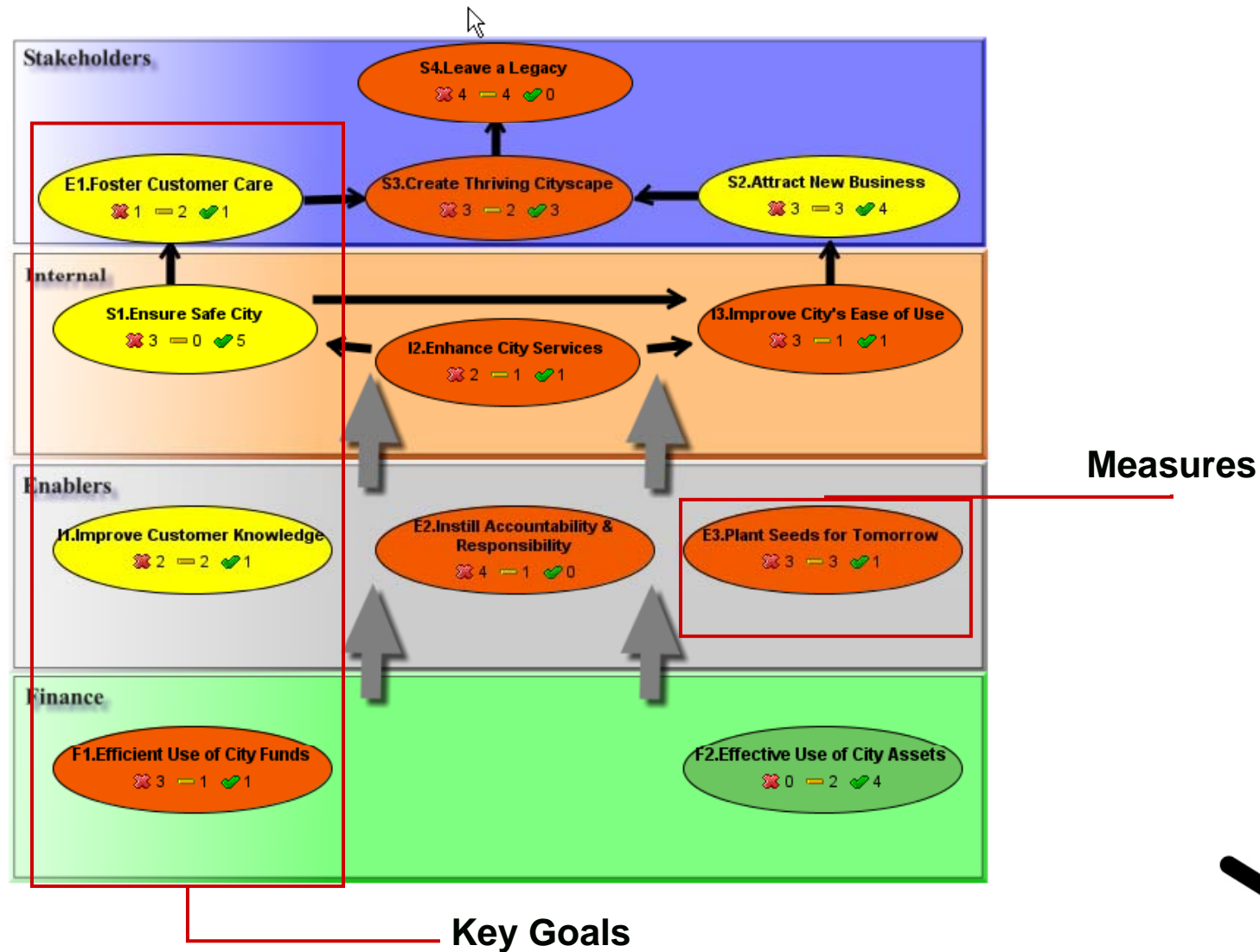
Chief Information Officer, IT Departments, IT Analysts

Strategic view of the IT requirements required to deliver services to effectively assist in the management of operations at the government or agency level.

More visibility into information, ability to produce more success with fewer IT resources, and provide IT with better planning and reporting technology.



Strategy Maps Define Goals, Key Outcome Measures



Executive Scorecard Offers Holistic View of All Activities



No filter

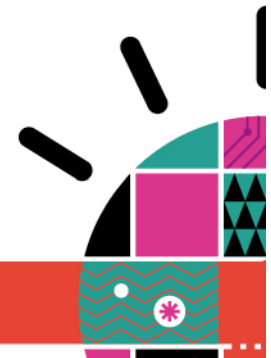
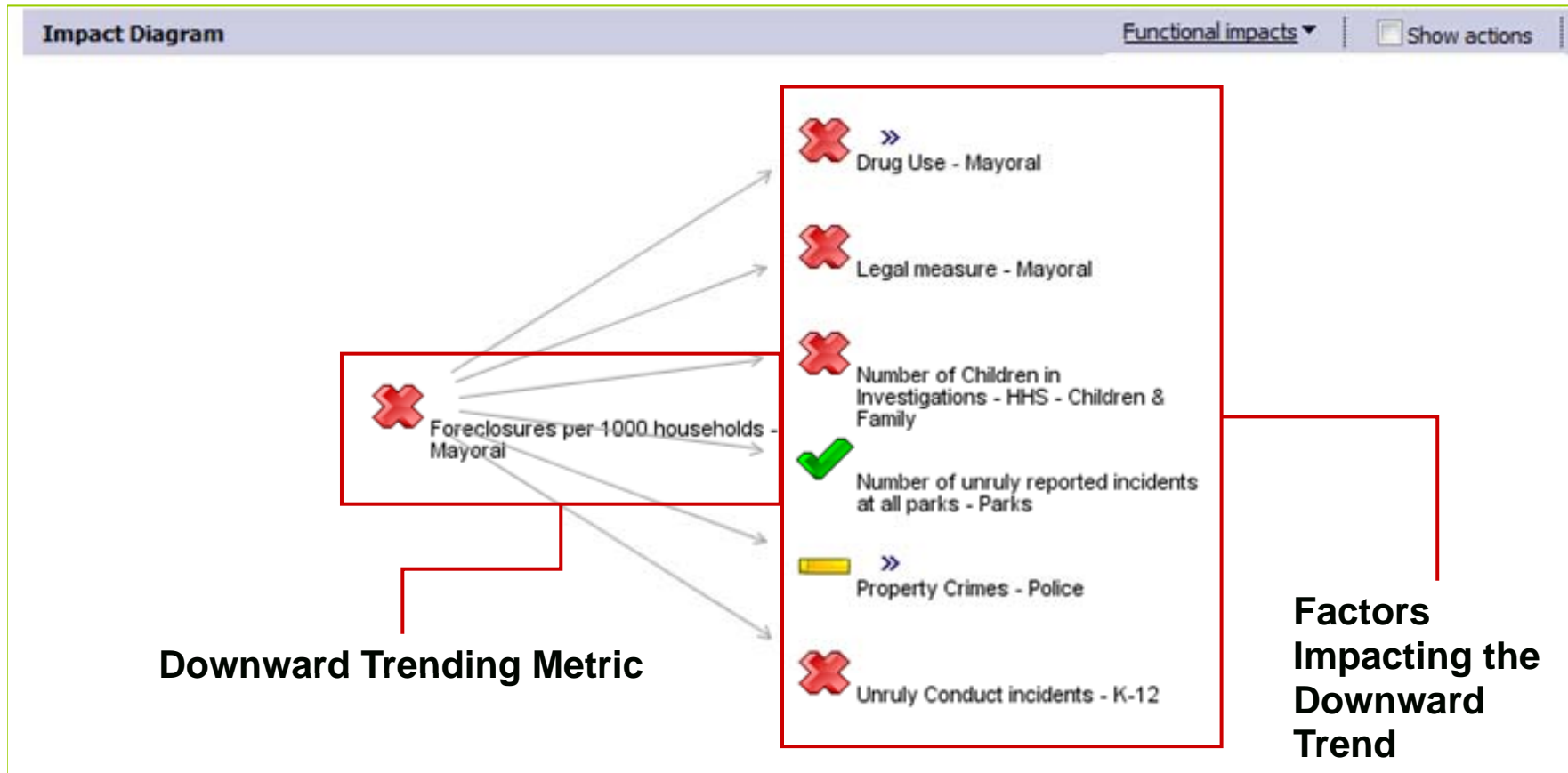
S3.Create Thriving Cityscape		Actual	Target	National Average	Variance	FY06	Time Period
✓ ▲	No. of Licenses (12M RA) - Mayoral	103.69	100.00		3.69		Dec 2007
✗ ▲	Construction Permits - Mayoral	20.15	25.00		-4.85		Dec 2007
▬ ▼	Property Val vs Natl Avg - Mayoral	US\$202,054	US\$205,000	US\$168,000	-US\$2,946	US\$217,263	Dec 2007
✓ ▲	Business Traveler Income - Mayoral	US\$83,966.53	US\$75,000.00		US\$8,966.53		Dec 2007
✓ ▼	Lease Rates - Mayoral	99.00%	100.00%		-1.00%		Dec 2007
✗ ▼	Tourism Dollars vs FY-1 - Mayoral	US\$438,443,183	US\$375,000,000		US\$63,443,183		Dec 2007
▬ ▼	Public Facility Utiliz. Rates - Mayoral	37.90%	40.00%		-2.10%		Dec 2007
✗ =	Foreclosures per 1000 households - Mayoral	11	7	11	4		Dec 2007

Trend Indicator

Key Goals

Variations

Impact Diagrams Help Identify Areas to be Addressed



Budgeting & Financial Reporting



Budgetary Execution Metrics

No filter | No grouping

Name	Actual	Target	Variance	Variance %	Time Period
Departmental Accounts Payable Overdue	US\$10,735,334.00	US\$10,000,000.00	US\$735,334.00	7.35%	May 2009
Departmental Accounts Receivables Overdue	US\$52,934.00	US\$50,000.00	US\$2,934.00	5.87%	Jun 2009
Departmental Improper Payments	US\$625,488.44	US\$600,000.00	US\$25,488.44	4.25%	Jun 2009
Departmental Outstanding Reimbursables Commitments	US\$998,776.00	US\$1,000,000.00	-US\$1,224.00	0.12%	Jun 2009
Departmental Prompt Pay Interest	US\$711.00	US\$2,000.00	-US\$1,289.00	64.45%	Jun 2009
Departmental Total Adjustments	US\$25,789.00	US\$25,000.00	US\$789.00	3.16%	Jun 2009

Alerts
[Travel and Transportation Alert](#)

Reports
 Name
[Spend Plan](#)

GOI Office
 Name
[Spend Plan.ppt](#)

Self Service
 Name
[Create My Own Analysis](#)
[Create My Own Query](#)
[Create My Own Report](#)
[test](#)

Search:

[Advanced](#)

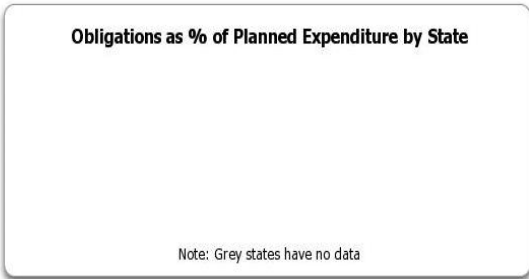
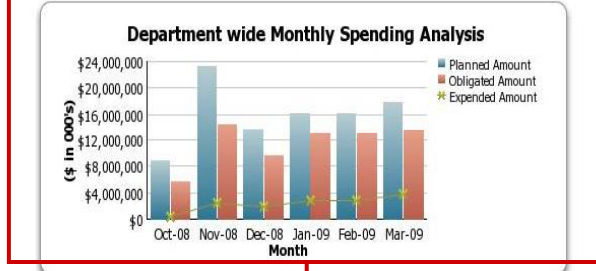
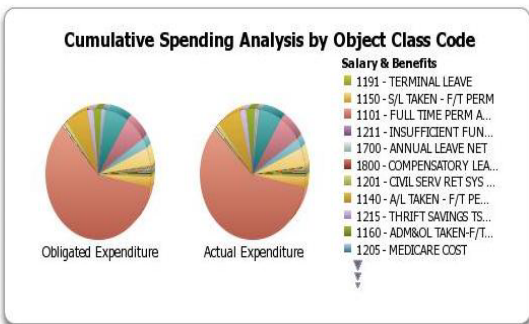
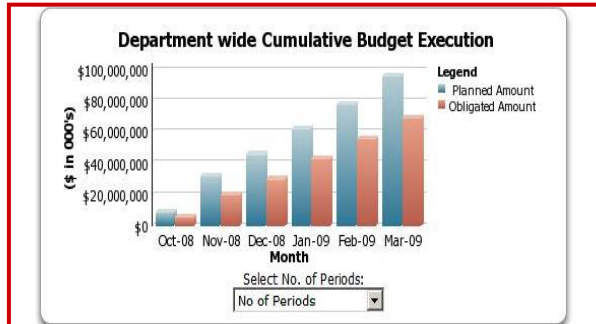
Trend and Current Period Spend Plan as of August 1, 2010

Graphical View

(\$ in 000's)

Planned Expenditure	Obligated Expenditure	Actual Expenditure	Remaining Obligations	Obligations as % of
\$95,723,380.87	\$68,900,568.33	\$14,199,620.96	\$26,822,812.53	71.98%

Financial Scorecard



Financial Metrics

Budget & Financial Planning for Consolidated Financial Activities



Budget Input	Enrollment Projections	Position-Planning	Position-Summary	Capital-Input	Capital-Operating Input	Capital-Summary	AYP Test Summary	
Alpine EL		0001 General Fund					Curr Serv Funded	
	PY2 Actual	PY1 Actual	Adopted Budget	Amended Budget	Final Estimate	Maximum	Requested Amount	Justification
3201 Property Tax	11,050,618	11,026,112	11,048,505	11,037,721	11,072,610	16,973,700	12,492,708	
3650 Specific Ownership Tax	3,751,942	3,743,622	3,751,225	3,747,563	3,759,409	5,762,966	4,241,565	
3673 Grant Funds	10,340	10,317	10,338	10,328	10,361	15,882	11,689	
3684 Tuition & Fees & Other	161,101	160,744	161,071	160,913	161,422	247,451	182,125	
TOTAL REVENUES	14,974,002	14,940,795	14,971,138	14,956,525	15,003,801	23,000,000	16,928,087	
FTE	250	250	250	250	250	250	4	
4002 Salaries	7,604,444	7,869,626	7,989,635	8,278,147	8,073,952	8,926,763	239,310	
4021 Insurance - Group	336,655	350,173	356,290	370,997	360,588	407,306	8,550	
4022 Fica- Employer	606,561	626,900	636,105	658,234	642,572	706,499	18,355	
4023 Bonus	353,981	325,072	459,925	359,906	335,697	516,388	0	
4025 Longevity Pay	13,887	14,445	14,697	15,304	14,874			
4027 Workers Comp Charges	1,420,889	1,473,925	1,497,927	1,555,629	1,514,790			
4029 401K Pre-Tax - Employer	2,013,428	2,094,271	2,130,857	2,218,812	2,156,562			
TOTAL PERSONNEL SERVICES	12,349,844	12,754,412	13,084,436	13,457,028	13,099,036			
5002 Utilities	42,195	47,792	51,667	57,167	52,422			
5006 Telephone	2,699	3,057	3,304	3,656	3,353			
5031 Equipment Rental	44,700	50,629	54,733	60,560	55,533	84,018	62,040	
5032 Real Estate Rental	18,470	20,920	22,615	25,023	22,946	34,716	25,634	
5050 Maint & Repairs - Building	16,643	18,851	20,379	22,549	20,677	31,283	23,100	
5111 Travel	43,035	48,744	52,695	58,306	53,466	80,890	59,730	
5112 Training	18,466	20,916	22,611	25,019	22,942	34,710	25,630	
5201 Busing Service Cost	0	0	0	0	0	0	32,406	
TOTAL CONTRACTUAL SERVICES	186,208	210,909	228,006	252,281	231,339	350,000	297,286	
6002 Office Supplies	25,441	28,816	31,151	34,468	31,607	70,705	35,310	
6005 Departmental Supplies	43,035	48,744	52,695	58,306	53,466	119,604	59,730	
6020 Computer Software	18,229	20,647	22,320	24,697	22,647	50,661	25,300	
6035 Uniforms-Clothing	1,664	1,885	2,038	2,255	2,068	4,626	2,310	
6055 AYP Programs	1,585	1,795	1,941	2,148	1,969	4,405	21,000	
TOTAL COMMODITIES	89,954	101,887	110,146	121,873	111,756	250,000	143,650	
7002 Interest On Financing	7,925	8,977	9,704	10,738	9,846	10,845	5,000	
9108 Equipment	15,851	17,954	19,409	21,475	19,693	21,691	2,000	

Revenue & Cost Information in Consolidated Budget

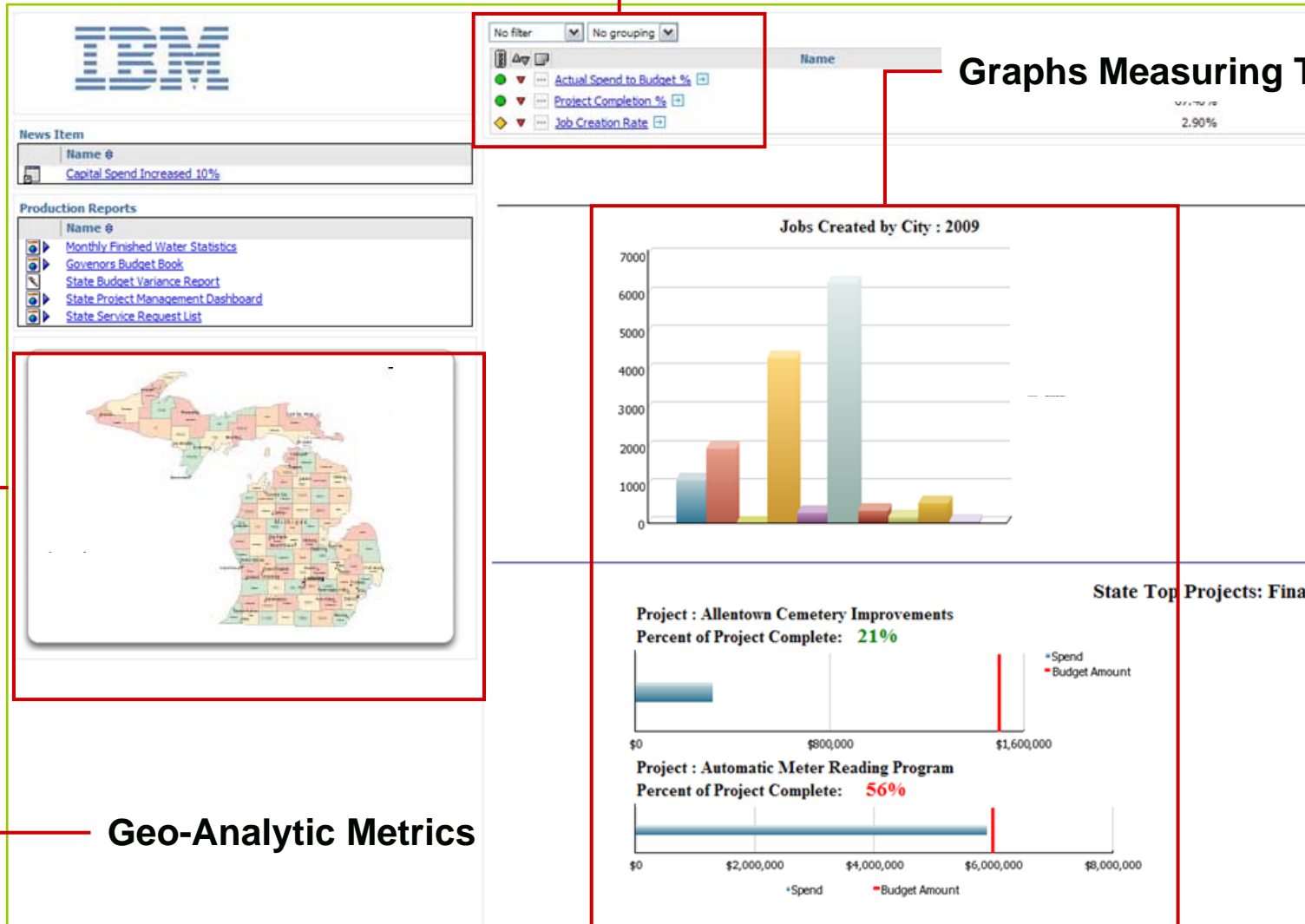


Performance Dashboard



Scorecard Measures

Graphs Measuring Trends



Geo-Analytic Metrics



Australian Institute of Health and Welfare



Background and Challenge

- Information distributed to users via hard copy reports containing large numbers of tables.
- Broad range of users unable to sift to find the details they required
- Limiting or preventing important policy decisions

Solution

- Allows anyone to perform multidimensional analysis and create reports in a web environment
- User-friendliness made it an obvious choice
- Move to a full business intelligence solution to better manage information and performance

Benefits

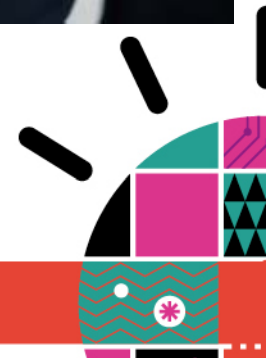
- ✓ Delays between receipt and release have been minimized
- ✓ Users can access relevant information and generate specific reports
- ✓ Very useful resource for researchers, policy makers, consumers and service providers



Crime Prediction and Prevention



- Analyze crime statistics, predict incidents in time and space and facilitate collaboration within and across policing departments.
 - **Planning tools:** allow municipalities to analyze history, set future objectives and metrics, and build execution plans.
 - **Scorecards and dashboards:** enable municipalities to monitor and respond to key metrics.
 - **Reports and analysis:** guide users to the issues to be addressed or resolved quickly.
 - **Predictive analytics:** profile crimes and criminals to improve solved crime rates and optimize resource usage.



Richmond Police Department

Effective force deployment lowers cost and crime



Challenge

Needed a solution that could identify trends and patterns that might indicate how to best deploy forces to prevent crime or determine whether or not a threat is real.

Solution

- Using PASW Modeler data mining, analysts are able to identify actionable patterns and make high quality decisions by fully exploiting huge data sets.
 - Incident reports
 - Crime tips
 - Calls for service

Results

- Facilitated the deployment of officers to where they were most needed.
- Identified minor crimes likely to escalate into violence.
- Accelerated the criminal investigation process.





IBM Content Analytics is a platform to derive rapid insight

Transform raw information into **business insight quickly** without building models or deploying complex systems.

Derive insight in **hours** or **days** ... not weeks or months.

Easy to use for all knowledge workers to **search** and **explore** content.

Flexible and **extensible** for deeper insights.



Search
and Explore



Analyze
and Visualize



Aggregate
and Extract



Start **unlocking the insight** trapped in your content today

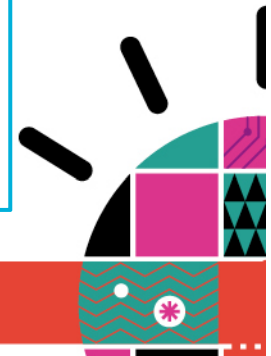
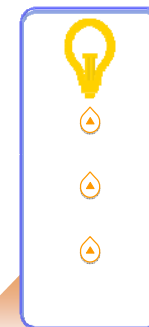


*Uncover **business insight** quickly to improve product quality and customer service, detect fraud, optimize decision making and more ...*



IBM Content Analytics

- Find relevant enterprise content quickly and securely
- Assess enterprise content to decommission the unnecessary and govern the content that matters
- Customize rapid insight to industry and customer specific needs
- Enable deeper insights through integration to other systems and solutions



Other IBM Business Analytics Public Sector Clients



Federal/National	Regional	Local





Questions and Answers





THANK
YOU

