

Municipal Performance Scorecard Blueprint



Executive summary

This application brief describes the content of a Web-based application for managing municipal government project funding that is powered by IBM Cognos® 8 and TM1. Implementing the *IBM Cognos Municipal Performance Scorecard Blueprint* enables forward-looking visibility into funding decisions for all agencies at all levels. The *Municipal Performance Scorecard Blueprint* can use projections from other models or planning systems and actual history to drive decision processes. The *Blueprint* and processes described in this document are generic for municipalities both in the U.S. and globally and can be readily configured to support the complexity of specific project requirements for any municipal agency in any country.

Municipal Performance Scorecard Blueprint

Governments focus on delivering the best services at the lowest cost. At the mayoral level, managing the projects and related expenses for all agencies requires maximum effort. The mayor typically sets the spending guidelines and, at the department and agency levels, managers must make project funding decisions that optimize efficiency. Forward-looking collaboration is necessary for controlling overall spending while at the same time meeting the goals of delivering to the public. The *Municipal Performance Scorecard Blueprint* provides that collaboration. It was created using the collective experience and applied best practices of IBM Cognos software customers around the world.

Driver-based planning

Because experts tend to agree that planning, budgeting and forecasting involve too much detail and not enough emphasis on the key metrics that drive expenses, driver-based planning is featured in this *Blueprint*. Based on common components, driver-based planning helps organizations determine their goals, examine their options and make the optimum choice. For example, municipal agencies can select from a number of

“activities” that result in anticipated outcomes. These selections also contain a cost component that they can use to determine the best decision. An example of this might be the selection of a particular activity to reduce the homicide rate. The alternatives might include increased lighting in high crime areas, funding a neighborhood watch or hiring additional police. These alternatives usually present different anticipated outcomes in the process of meeting the goal of reducing the homicide rate. The cost for these alternatives is also important. Clearly, certain methods are more effective; however, they might also be much more costly. This approach is superior to merely entering estimated expense dollars without considering the effects of various alternatives. The driver-based approach makes it simple to examine the cost benefit trade-off.

Municipalities today are under a great deal of pressure to control costs and maintain expected services. To achieve this, the focus has to be on both the cost and the expected benefit. The public expects greater transparency and therefore governments must be prepared to justify spending while at the same time continue to deliver “good government.”

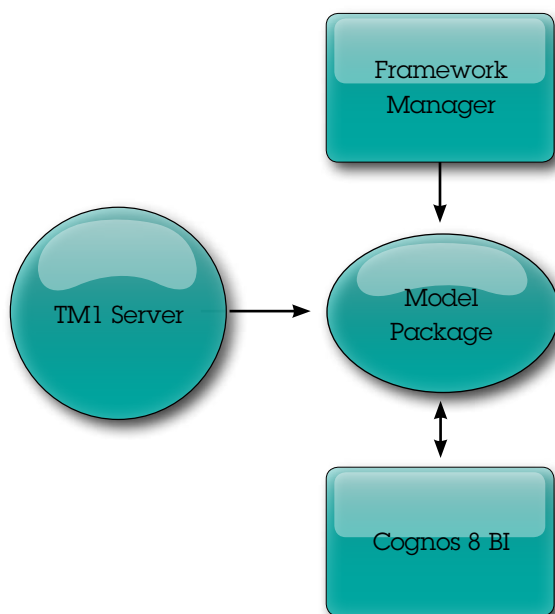
Blueprint objectives

The *Municipal Performance Scorecard Blueprint* can help you achieve the following planning and forecasting objectives:

- Manage projects based on drivers and historically reliable rates, costs and effectiveness.
- Determine activities equitably based on historical patterns or experience.
- Consolidate expenses for seamless project planning.
- Use projected outcomes as drivers for achieving targets and long term goals.
- Consolidate a number of different funding projects to enable simpler and quicker budgets.
- Optimize funding and achieve goals.

Blueprint components

The architecture in the following diagram shows the high-level components of the *Blueprint*.



Business intelligence model

The business intelligence (BI) components of the *Municipal Performance Scorecard Blueprint* focus on providing vital information to agency managers, directors and government executives—in real-time. The *Blueprint* provides tools that can help municipalities evaluate performance against existing plans, make decisions with causal effect on budgets and incorporate these to drive more effective performance.

The BI model presents information in many forms, with the capability to drill down to more detailed analyses and include up-to-date information from IBM Cognos enterprise solutions. Folders, dashboards and reports are provided to drive the decision-making process

The BI features include:

- Real-time data access
- Dashboards providing key information relevant to agency projects
- Drill-down from dashboards to answer questions and depict status of expenditures from various perspectives
- Cross-organizational reporting (multi-node reporting)
- Visual aids showing status, impact and evaluation of plan against performance so appropriate action can be taken to achieve goals
- Features to benefit all organizational functions from contributors to managers to executives
- Filtering options to further focus on needed information
- Ad-hoc query to slice-and-dice information to answer questions and monitor impact
- Dimensional analysis to analyze impact
- Ability to see which agencies have completed planning contribution
- Scenario comparisons
- Flexible and extensible modeling

These features help users make informed decisions about projects and their relationship to municipal budgets and goals.

Contributors in municipalities input various rates, measures, targets and expected outcomes. These are based on specific activities, prior history or other internal knowledge. To enhance the business intelligence experience, the *Blueprint* provides a business-centered Framework Manager model that is published to the IBM Cognos 8 Business Intelligence Server. In this server are the dashboards, reports, ad-hoc queries and analyses built on the published Framework Manager package and grouped according to agency-department levels. Tactical and agency management want BI tools to make informed decisions and adjustments aligned with overall goals. In keeping with this approach, three categories—agency management, department management and mayor are included in the BI model of the *Municipal Performance Scorecard Blueprint*.

Some noteworthy features are:

- Reporting for all department levels (multi node reporting)
- In-body prompts allowing for selection of areas of interest in the report
- Clickable links to sections of a multi-section report
- Drill-down to further detail

The BI model is geared towards municipal projects. For the mayoral level there are dashboard-style reports that focus on overall perspectives and allow for drill-down to gain insight in greater detail. Filtering focuses the perspective to specific areas of importance such as projects, timescale profile or targets. With real-time data, the impact of decisions on goals and strategies can quickly be seen and responded to.

At the manager level, dashboards drillable to details, detailed reports, ad-hoc queries and analyses permit focus on matters of tactical importance. Data and reports are relevant to department managers at the agency level or departmental level. Typically of interest would be the expenditure amounts, timescale profile, projected funding required and information about anticipated outcomes. The BI content readily addresses the effects of plans and alternatives on financial statements and helps proactive management meet their objectives. With real-time throughput, you can quickly see the impact of changes on funding.

For agency contributors, the focus is on tracking and monitoring the cost and effectiveness of achieving targets. Contributors want to know about timing, scenario status and tracking against actual data. Available contributor reports relate project data to the bigger picture and can be monitored in keeping with overall goals and strategies.

Executive reporting

The mayor's office needs to know how planned expenses fit in with budget constraints and how they affect governmental objectives. They also want to see the data resulting from individual project funding. With real-time data access, they can view the scope of all projects at all organizational levels and the degree of completeness from each contributing unit. With its reports and ad-hoc analysis tools, the BI model gives the mayor's office visibility of the fiscal impacts of their decision-making. Because higher levels in the municipality seldom use the ad-hoc analysis tools, reports provide the information most relevant to them. Their launch point is the BI component of the *Municipal Performance Scorecard Blueprint*, which provides a general overview of key metrics and scorecards and the impacts against established targets. All of this can be seen without accessing any planning applications.

The *Blueprint* also immediately notifies the mayor of any alerts and can also have a live feed on relevant information for his/her city. Additionally key, metrics and supporting graphs highlight any problem areas.

Welcome page

The Welcome page is the mayor's landing page. It provides critical information at the highest level, such as event-based alerts, RSS news feeds and a metrics watch list. When the mayor clicks a metric, he or she sees a detailed actual versus target trend chart just below the watch list.



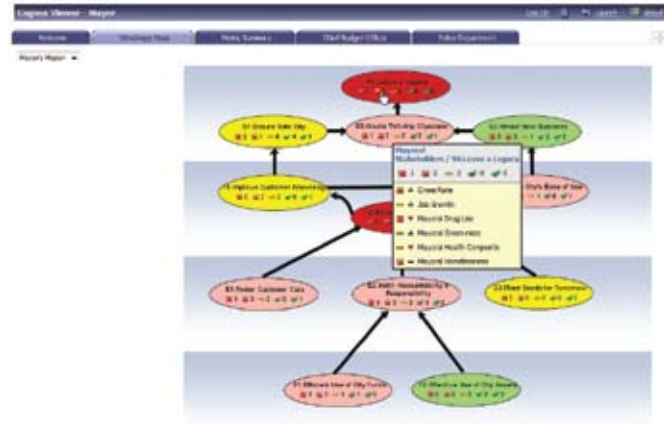
In addition, the mayor can move his or her mouse over a highlighted comment next to a metric to see correspondence related to that metric.



Additional views offer other relevant information. As shown below, the mayor has opened the alert for Crime Rates to see the latest information.

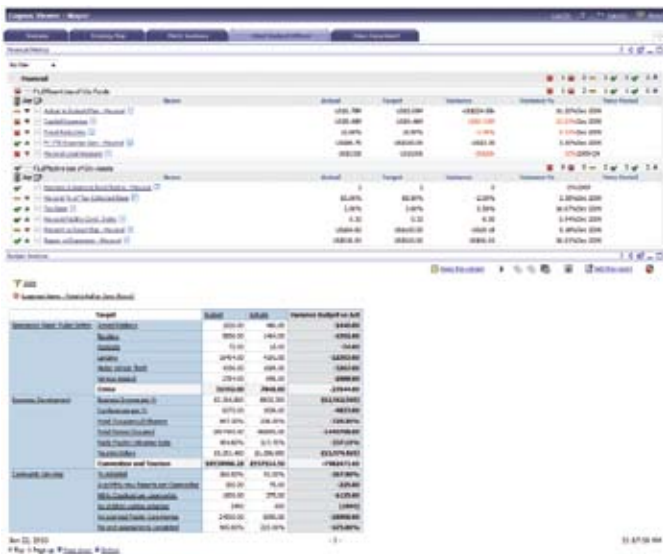


Strategy map
The Strategy Map tab is for the Mayor's Mission diagram. Each scorecard metric belongs to a particular initiative, and each initiative makes up a strategic element. This map charts the municipality's goals and how they flow together. In addition, each agency has its own strategy map that you can view by selecting from the dropdown menu in the top left corner of the page.



Management Reporting

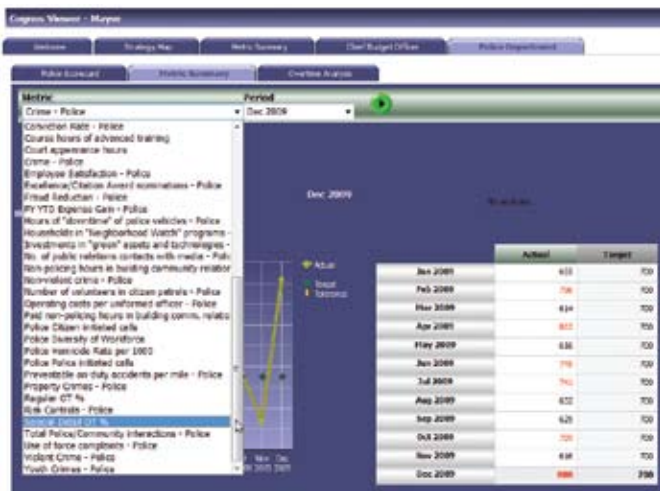
The Chief Budget Officer focuses on the funding and effectiveness of tax dollars. The dashboard available to this office is shown here. As actual data becomes available, the report is updated to show any variances to budget and target.



Illustrations of additional reports follow. These reports have various selectable filters for multiple views of the data.

The Police scorecard shown in the following illustration provides a quick view of performance metrics related specifically to the initiatives of the police department. By clicking on a metric in the left-hand pane, you can view two types of detail on the right: an actual versus target trend chart and a metrics impact diagram. The metrics impact diagram illustrates the causality between metrics. Here, the user can get a glimpse of what other metrics might be causing the Actual to Budget/Plan to be off target.





Contributor reporting

The BI model offers planning contributors reports for reviewing and monitoring their contributions. Beyond the bare details of their projects, contributors can see how these affect broader government objectives. The filtering features provide contributors with views of all information they might need.

Although Cognos TM1 contributors have access to the details of the agency plan, the BI component of the *Municipal Performance Scorecard Blueprint* has the advantage of providing detail without the risk of inadvertent data modifications. An added advantage is the ability to see how these roll up to parent and mayoral consolidated levels.

Planning model

Powered by Cognos TM1, the planning model of the *Municipal Performance Scorecard Blueprint* provides Web-based deployment of process workflow, data collection and consolidation. In addition, you can customize this model as needed. Its benefits include:

- Real-time workflow
- Real-time consolidation
- Real-time calculations in the browser for immediate results
- Industry leading what-if features that include sandboxes that users can create for the most accurate plans, budgets and forecasts
- Scalable architecture with proven deployments to a large number of users
- Easy import of financial and operational plans to facilitate cross-enterprise collaboration
- Form-based planning with selection boxes to drive application logic and calculations.

Planning cubes and lists

The *Municipal Performance Scorecard Blueprint* was built for contributors at the agency or department level. The following list reflects this approach, showing a number of typical agencies aggregating to the departmental and mayoral levels.



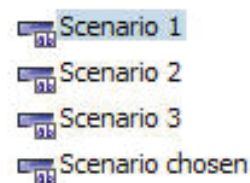
All users have the same inputs and views, but each agency contributor can define the projects, targets, costs and goals for forecasting project funding. Contributors can modify and expand the hierarchy to include greater detail or more municipality levels without changing the basic structure or components of the model. Users specify data metrics that are uniquely relevant to their needs. Contributors may specify how this data is used to calculate the resulting objectives.

This *Blueprint* displays monthly data for two years. Although it requires minimal user input, it yields a great deal of information. The following cubes require input:

- **Measures:** Users enter a specific amount or measure for each activity. For example, the Police Chief might look at various activities to combat crime. The measure for street lights might be two, while the measure for Police might be one. These measures are typically based on past experience and intrinsic knowledge.
- **Rates:** These same activities have a rate or cost associated with them. Using the previous example, the monthly rate for two street lights for a specific crime. For example, burglary might be \$20 while the monthly rate for one Police officer used to target that same crime may be \$51.
- **Targets:** This cube requires users to enter the targets for a specific goal. In our example, the contributor enters the target to reduce burglary and other target crimes.
- **Select Activity:** This cube requires users to select which activity to use to achieve the objective. From our previous example, the user would select from a number of methods to reduce the burglary rate.
- **Select Scenario:** The user can input any number of scenarios with different selections or drivers. After examining the output, he or she may choose a certain scenario to submit.

The Blueprint also contains a number of key lists, including:

- **Scenario list:** This list is for “what-if” comparisons. You may customize the list to define your own scenarios or versions. The “Scenario chosen” is used to select the scenario to be submitted for review



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- **Activity list:** Used in most tabs, this list is unique to an agency or department. Although it can contain activities that are not relevant to all users, the modeling has functionality allowing for views unique to each user. The following example shows the Police Chief view.



- Target list: This list contains the unique Targets that each agency has selected. The combined list can contain all targets for all agencies, however as described previously, the modeling functionality allows the administrator to tailor which items each user can view. The following example shows the targets for the Police.



Measures

When you log on as the chief of police, the first cube, Measures, is the starting point for project planning. In this cube, the required input is an amount or measure for each of the activities. For example, if CCTV Security Cameras are used as an activity to target crime, the standard measure would be four cameras.

Activity	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total Yr
Crime Prevention	50												
CCTV Security Cameras	40	4	4	4	4	4	4	4	4	4	4	4	44
Enhanced Street Lighting	34	2	2	2	2	2	2	2	2	2	2	2	38
Hire Police	13	1	1	1	1	1	1	1	1	1	1	1	14
Neighborhood Watch	32	1	1	1	1	1	1	1	1	1	1	1	34

Rates

The Rates cube is used to input the anticipated rate for each activity by target, month and version.

Activity	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total Yr
Crime Prevention	149	149	149	149	149	149	149	149	149	149	149	149	149
CCTV Security Cameras	46	46	46	46	46	46	46	46	46	46	46	46	46
Enhanced Street Lighting	20	20	20	20	20	20	20	20	20	20	20	20	20
Hire Police	51	51	51	51	51	51	51	51	51	51	51	51	51
Neighborhood Watch	32	32	32	32	32	32	32	32	32	32	32	32	32

Representative workflow

Using the *Municipal Performance Scorecard Blueprint*, agency-level contributors can forecast projected funding with Cognos TM1. The following description is of a basic workflow in which an agency-level contributor would:

- Input and review costs, rates, measures and targets
- Indicate the anticipated outcome of each activity for each target
- Enter data for different scenarios
- Select the activity which provides the optimum outcome
- Adjust costs, rates, measures and outcomes
- Calculate total project funding required
- Compare scenarios and select the Scenario to submit for approval
- Review actual data against projections

This *Blueprint* has seven tabs, which are the same for every contributing agency. For purposes of this document, we demonstrate the *Blueprint* from the view of the chief of police.

As you can see here, the rate for CCTV Security Cameras for July 2009 is 46 when used as an activity to combat armed robbery. Using enhanced street lighting to target armed robbery, the anticipated rate is 20. Users would most likely import this data from other systems or national databases. When actual data becomes available, you can compare and adjust the forecast as needed.

As you make changes, they are highlighted in blue along with any cells affected by the change.

Targets

Activity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Armed Robbery	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	1,200.00
Burglary	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	1,200.00
Homicide	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	72.00
Larceny	1267.00	1267.00	1267.00	1267.00	1267.00	1267.00	1267.00	1267.00	1267.00	1267.00	1267.00	1267.00	15,204.00
Motor Vehicle Theft	303.00	303.00	303.00	303.00	303.00	303.00	303.00	303.00	303.00	303.00	303.00	303.00	3,636.00
Serious Assault	133.00	133.00	133.00	133.00	133.00	133.00	133.00	133.00	133.00	133.00	133.00	133.00	1,596.00

You use the Targets cube to input the anticipated result for each selected target. These amounts are entered by month, year and version. The amounts in this example may come from a national database for comparable municipalities.

Calculated Measures

This cube shows the results of the input of the previous three cubes.

Activity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Crime Prevention	181.71	181.71	181.71	181.71	181.71	181.71	181.71	181.71	181.71	181.71	181.71	181.71	2,180.52
CCTV Security Camera	63.59	63.59	63.59	63.59	63.59	63.59	63.59	63.59	63.59	63.59	63.59	63.59	763.08
Enhanced Street Lighting	303.00	303.00	303.00	303.00	303.00	303.00	303.00	303.00	303.00	303.00	303.00	303.00	3,636.00
Hire Police	4,200.00	4,200.00	4,200.00	4,200.00	4,200.00	4,200.00	4,200.00	4,200.00	4,200.00	4,200.00	4,200.00	4,200.00	50,400.00
Neighborhood Watch	68.48	68.48	68.48	68.48	68.48	68.48	68.48	68.48	68.48	68.48	68.48	68.48	821.76

This tab is read-only because it shows values for each target/activity by month and version after they are calculated. The first illustration of this cube shows the “Cost per Unit” for each activity with the target of combating Burglary. The following view compares budget/forecast and actual and their respective variance costs for each activity when the target is Homicide.

Activity	Budget	Actual	Forecast	Actual		
Crime Prevention	(1,350)	176,650	178,000	(2,650)	175,350	178,000
CCTV Security Camera	(150)	5,000	5,200	(200)	5,000	5,200
Enhanced Street Lighting	250	15,500	15,250	0	15,250	15,250
Hire Police	(1,200)	152,000	153,200	(2,200)	151,000	153,200
Neighborhood Watch	(250)	4,100	4,350	(250)	4,300	4,350

Select Activity

In this tab, you select the activity for a specific target. As you can see, there are five activities available for the Police Chief to choose from. Each activity will result in a different cost/benefit. The user can select different activities for each version and scenario, creating a richer “what-if” analysis experience.

Target	Activity
Crime	Crime Prevention
Armed Robbery	Neighborhood Watch
Burglary	Neighborhood Watch
Homicide	Neighborhood Watch
Larceny	Neighborhood Watch
Motor Vehicle Theft	Neighborhood Watch
Serious Assault	Neighborhood Watch

Select Scenario



Once the user has looked at all of the outcomes, he or she may select the optimum scenario to submit. Although the *Blueprint* contains only 3 scenarios, the application allows for any number. Additionally, users can customize the names. For example, they can label the scenarios “Best Case,” “Worst Case” and “Most Likely.”

Dashboard Summary

This final view shows the submitted result. This type of report is typically used to create BI content. Additionally, users can create charts “on the fly” that show specific content.

Crime	Total Budget 2009 (USD)	Units	Targeted	Rate	Costs	Customer Units	Percentage of Budget
Armed Robbery	6256.2	8	1952	176.450	104.40	39.0	
Burglary	39.1	1	128.13	4.100	128.13	5.0	
Homicide	134.7	1	49.40	4.100	49.40	5.0	
Larceny	15.6	1	25,323.20		24.0		
Motor Vehicle Theft	2272.4	1	1267	132	4,100	36.61	5.0
Serious Assault	864.8	4	363	736	3,650	18.30	4.0
	853.7	1	232	76	852,000	1,824.06	34.0

The following chart shows total 2009 Budget cost for each target.





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