

Oakland County Data Warehouse White Paper County Performance Management / Dashboarding

County Performance Management is a term that describes the activities and tools that enable local governments to monitor Key Performance Indicators (KPI's) at an executive management level. "Dashboarding" is used interchangeably with County Performance Management, but technically it refers to the software tools that enable users to monitor their KPI's.

This white paper examines the processes and tools needed to perform County Performance Management and Dashboarding at Oakland County.



Introduction

"Government should be results-oriented—guided not by process but guided by performance. There comes a time when every program must be judged either a success or a failure. Where we find success, we should repeat it, share it, and make it the standard. And where we find failure, we must call it by its name. Government action that fails in its purpose must be reformed or ended."

– **President George W. Bush**

An automobile's dashboard graphically displays key indicators about the performance of the vehicle – current speed, remaining fuel, engine temperature, etc. And when one of those indicators reaches a critical level (*low gas level*), a red light pops-up and the driver realizes that some action needs to be performed (*fill the gas tank*) before undesired results occur (*the engine stops*).

Similarly, a County dashboard will graphically display the government's key performance indicators – YTD expenditures vs budgeted expenditures, # of Current Inmates vs Facility Capacity, etc. And when one of those KPI's reaches a critical level, management can take the appropriate actions to rectify the situation with minimal impact to employees and citizens. The trick is to be sure you identify meaningful KPI's and have the ability to display them to the right people in the organization.

There are three main activities for effective County Performance Management:

- (1) **Defining the Key Performance Indicators** that effectively describes the health of business;
- (2) **Capturing and storing sufficient data** so that KPI's can be calculated and stored;
and
- (3) **Implementing Dashboard tools** that graphically display KPI's to management and easily alerts them that actions need to be taken.

This document recommends the processes that executive management and IT should follow and the types of tools that should be implemented to achieve successful Dashboarding in the County.

Defining Key Performance Indicators (KPI's)

According to the Gartner Group, "Defining the metrics behind the dashboard is the key to a successful implementation of the dashboard." Therefore, the business stakeholders and executive management for each department/division are ultimately responsible for defining the Key Performance Indicators that will accurately describe the effectiveness of their department/division. IT should be prepared to support this activity in a consultative role.

IT's involvement will help ensure that all Performance Metrics developed by the business are reasonable and will lead to desired results. The following general criteria should be used to evaluate Performance Metrics with the business:

1. ***Relevant*** – Performance Metrics must pertain to (a) the customers/public receiving the services or products, (b) the employees providing the services or creating the products, or (c) the business services/products provided by the department/division;
2. ***Specific*** – Performance Metrics must always be quantitative measures and be bound by relevant dimensions (time, department, CVT, etc.);
3. ***Actionable*** – Performance Metrics must be germane to business processes and levers that management has in its control, so they can perform some action to reverse negative trends or outcomes. For example, it would not be helpful to capture and monitor the amount of unfixed potholes on state-maintained roads.

Adherence to these general criteria will make the job of developing a performance metric monitoring system much easier and faster.

Data Capture and Storage

After a department/division defines its key Performance Metrics, IT's role is to then analyze the systems used by the department/division to determine if all of the data elements required to calculate each Performance Metric are electronically captured and stored in the system of record. If not, it is IT's responsibility to inform the business which data attributes are not available and to provide options to capture the missing data either through enhancements to current systems or development of new systems.

Additionally, new systems developed by IT should always be designed to capture quantitative values or dimensional values in separate, type-appropriate fields. Capturing quantitative or dimensional data within free-form text fields should be avoided.

IT should oversee the storage of detail and summarized data used by Dashboarding solutions. Dashboarding solutions should not be seen as the replacement for a solid BI strategy. Dashboarding can only be successful and scalable when there's a solid open infrastructure (such as a data warehouse) underneath that manages the "one version of the truth" of the data and metadata.

Dashboarding Tools

Finally, after defining appropriate Performance Metrics and identifying the electronic data sources to support those metrics, IT must provide a way for the business to effectively monitor the Performance Metrics. Traditionally, this has been done via Excel spreadsheets. While spreadsheets are very useful tools for some tasks, using them to display Performance Metrics is very risky and should be discouraged by IT. A better approach is through the use of Dashboarding Tools. Like most other software tools, there are two classes of Dashboarding tools – pre-built Applications and Toolkits used for building custom solutions.

Dashboard Applications are end-to-end solutions with pre-defined metrics and out-of-the-box end user interfaces. Dashboard Applications have the advantage of containing most "best practice" measures for a particular industry. However, applications have the disadvantages of being relatively expensive to buy and difficult to customize without IT resources.

Some of the leading Dashboard Applications for county government include PilotWorks by Pilot Software and CorVu.

Dashboard Toolkits are customizable, building blocks that enable technically savvy users and/or business-trained IT people to build simple yet effective dashboard "silos" for a particular functional area. Toolkits tend to be less expensive and allow users to build dashboards that address their exact Performance Metrics. However, toolkits don't enforce standards across functional areas which could prevent data from being integrated between departments and cause maintenance costs to be significant.

Toolkits are in their infancy, but Microsoft's Business Scorecard Manager is an example of a Dashboard Toolkit currently on the market.

Currently, the County does NOT have a standard Dashboard Tool. There are many factors, such as business need, experience level of users, procurement budget, etc. that make it nearly impossible to recommend a particular tool at this time. The best tool should be a hybrid of Applications and Toolkits – contain some pre-built metrics specific to county government, but also have built-in functionality that will allow users and/or IT to add new metrics.

In order to find such a tool, IT will need to engage in a tool evaluation project. The factors must be evaluated to ensure that a Dashboarding tool chosen by the County will lead to optimal usage and success:

1. **Required Hardware Platform** – application or toolkit solutions should be able to work with existing hardware standards of the County (Intel-based servers and Windows OS, to name a few);
2. **Implementation Costs** – initial software procurement costs are not the only costs that must be considered. Combined software, customization, and implementation costs for various tools should be considered as well;
3. **On-Going Maintenance and Support Costs** – once the tool is implemented, estimates of the soft and hard costs to support the tool should be considered and compared;
4. **Desktop vs. Web Deployment** – because of the large and dispersed user base of the County, only tools with a web deployment option should be considered;
5. **Database Compatibility** – only tools compatible with Oracle and/or SQL Server should be considered. Tools with proprietary database engines or connectivity to other DBMS's should not be considered because of the costs associated with supporting additional DBMS platforms and database upgrades;
6. **Local Government Experience** – tools that are currently being used by other county governments *successfully* should be given more weight than those promising local government metric support in future releases;
7. **Flexibility to Add New Metrics** – tools that do not allow some level of self-service by users to add new metrics or modify existing metric calculations should not be considered;
8. **Vendor Viability and Market Longevity** – vendors with a proven track record at the County or at other counties and vendors that have been in the Dashboarding business for at least 3 – 5 years should be given a higher weight than others.

Conclusion/Recommendation

Dashboarding (or Corporate Performance Management) is the inevitable next step for business intelligence at Oakland County and this strategy document was written to help ensure that the implementation of Dashboard solutions is as successful as possible.

Dashboarding is not just a buzzword for a cool new technical product – it is a multi-step process that must be tackled jointly the business stakeholders and IT. Therefore, our recommendations are not limited to the technical tools associated with a Dashboarding solution, but rather, all of the activities that are required for effective Dashboarding:

1. **Defining the Performance Metrics** – IT must work closely in a consultative role with the business stakeholders to ensure that the Performance Metrics that are developed are relevant, specific, and actionable;
2. **Data Capture and Storage** – IT must identify the best electronic source of data needed to calculate Performance Metrics and build new data structures to store the data for optimal usage with Dashboarding tools; and
3. **Implementing Dashboarding Tools** – There are 2 types of Dashboarding Tools – Applications and Toolkits. Both have their advantages and disadvantages, so IT must perform a tools evaluation based on the specific needs of the specific business customer. The best tool will have the best of both worlds – some pre-built metrics specific to county government, but also robust capabilities to add new metrics.