Improving Internal Operations with Performance Measures

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Examples of Internal Operations

- Planning
- Program Delivery
- Safety Analysis
- Asset Management
- Equipment Management
- Property Management
- Procurement and Internal Financial Controls
- Human Resources
- Information Technology
Approach to Internal Operations
Performance Management

Understand the Business Framework First

• What is the purpose or function of the operation?
• Who is responsible for the operation?
• What processes are used to execute the operation?
• What are the key deliverables or outputs?
• What systems are used?
• What data is required?
• Where does the data come from?
• Where does it go?
When Developing Performance Measures

Consider the purpose and desirable outcomes

How does the operation contribute to broader, higher level goals?

Consider the deliverables and how they are generated

Data collection and entry, handoffs, dependencies, approvals, etc

Consider who is responsible for various tasks

Multiple groups? External parties?

Consider how the measure might affect behavior

(positive or negative)

Assess what factors influence changes in performance

What factors can we control? What can we not control?
### How Does The Operation Contribute To Higher Level Goals And Measures?

<table>
<thead>
<tr>
<th>Impact To:</th>
<th>Type:</th>
<th>Measure (examples)</th>
<th>Key Factors: (examples)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All of Society</td>
<td>Core Indicator</td>
<td>Trans. Contribution to GDP</td>
<td>User cost of trans.</td>
</tr>
<tr>
<td>Road Users</td>
<td>Program Outcome</td>
<td>Excess user cost of trans.</td>
<td>Pavement condition, crash risk, VHR of delay, travel time reliability</td>
</tr>
<tr>
<td>Agency</td>
<td>Program Output</td>
<td>Pavement condition, Crash risk, VHR of delay, reliability</td>
<td>On-time, On-budget work. Safety proj. Incident resp., time, signal timing</td>
</tr>
<tr>
<td>Org Unit</td>
<td>Unit Output</td>
<td>On-time, On-budget, Proj. effect, Incident resp., signal timing</td>
<td>Quantity and cost of work units, Quality of data, analysis &amp; mgt decisions</td>
</tr>
<tr>
<td>Employee</td>
<td>Employee Output</td>
<td>Quantity, timeliness, &amp; quality of work, Innovative contrib.</td>
<td>Training, competency, mgt &amp; direction, opportunities provided</td>
</tr>
</tbody>
</table>
Example 1: Procurement and Internal Financial Controls

Purpose- To support and ensure accuracy and accountability in the department’s financial system by providing services and internal controls in the management of purchasing, accounting, receivables, payables, payroll and financial reporting.

Who is Responsible for this Operation?
Fiscal Division and Fiscal staff in each org unit
Example 1: Procurement Process (high level)
Example 1: Procurement and Internal Financial Controls

Key Deliverables of the Fiscal Division
• Agency Financial Statements
• Executive Financial Summary Report
• Employee Payments
• Vendor Payments
• Agency Billing and Collections
• Financial Reports for VDOT Operations
• Tax Reporting

Systems Used
• Financial Management System II (PeopleSoft)
Example 1:
Procurement and Internal Financial Controls

VDOT Measures
• Prompt Pay compliance rate
• % of agency procurements made through eVA
• % of SWAM goals met
• Occurrence and frequency of audit findings

Related Higher Level Measures
• On-Budget project delivery
• Planned vs Actual Expenditures
• Late payment fees and legal costs
• Bond rating
FY06 Prompt Pay Performance by District

The chart shows the prompt pay performance percentages for different districts in FY06. The districts are ranked from the lowest to the highest performance as follows:

- Central Office
- NOVA
- Staunton
- Culpeper
- Fredericksburg
- Hampton Roads
- Richmond
- Lynchburg
- Salem
- Bristol

The percentages range from just below 96.0% to just over 100.0%, with NOVA and Central Office performing the best.
Example 2: Human Resources

Purpose: Provide statewide leadership for recruitment, selection, classification, compensation, performance management, employee relations and rewards and recognition. Partner with clients to recruit, develop, and retain a highly committed, highly competent, results-oriented workforce.

Who is Responsible for this Operation?
Human Resources Division, and District HR specialists
Example 2: Human Resources

What are the key deliverables or outputs?
• Development of staffing plans and strength reporting
• Effective recruitment and relocation of employees
• Compensation and benefits administration
• Strategic workforce plan
• Management reports on employment actions
• HR policies and procedures
• HR and management counseling
• Dispute and conflict resolution
Example 2: Human Resources

Measures

• Number of days open positions remain vacant after being posted
• % of employee assessments completed on time
• Number of employees who have received appropriate training and have the necessary skills to do the job
• % of employees receiving safety training,
• Healthy Virginians program participation rate

Related Higher Level Measures

• Turnover rate
• Labor productivity, labor cost
• Insurance losses
Example 3: Safety Analysis

Purpose - Maximize traffic efficiency and safety while minimizing inconvenience and congestion on the highway network

Who is Responsible for this Operation?
Traffic Engineering Division and District TE sections
Example 3: Safety Analysis

Performance Based Safety Improvement Process

External Agencies

- VSP, DMV F-300
- Based on cost estimate, improvement type, and estimated impact
- Ex-Post assessment of ROI

TED

- VDOT
- Crash Records Database
- Safety Performance Reporting
- Statewide Analysis
- BC Analysis of Project Applications
- Project Selection
- Review of Completed Project
- Update/Revise B/C model

Regional TE

- Use performance data to identify worst locations
- Conduct Safety Reviews and Create Projects
- Project Development
- Project Execution
- Projects selected based on performance targets, Program priorities, and funding constraints

FPD, OPD, Programming

- Add to 6-Yr Construction or M&O Program and Receive Program 603 or 604 Funding
- Policy and process needed to determine what goes to Program 603 vs 604

Develop site specific solutions
Example 3: Safety Analysis

Key Deliverables and Outputs:
• Annual Summary of Crash Data publication
• VDOT Safety Action Plan
• Strategic Highway Safety Plan
• Virginia Highway Safety Corridors
• Designated Safe Routes to School
Example 3: Safety Analysis

Measures:
- Number of hazardous location assessments conducted
- Before and after crash rates at HSIP locations
- Time to complete safety studies
- % of VDOT SAP implemented
- Number of school districts with SRTS plans

Related Higher Level Measures:
- Number of traffic fatalities
- Number of traffic injuries
VDOT
External Dashboard

<table>
<thead>
<tr>
<th>Description</th>
<th>All Crashes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angie</td>
<td>36,963</td>
</tr>
<tr>
<td>Backed into</td>
<td>1,697</td>
</tr>
<tr>
<td>Bicyclist</td>
<td>0</td>
</tr>
<tr>
<td>Dead</td>
<td>5,660</td>
</tr>
<tr>
<td>Fixed object in road (from ditch to ditch)</td>
<td>535</td>
</tr>
<tr>
<td>Fixed object off road (from outside of ditch)</td>
<td>32,487</td>
</tr>
<tr>
<td>Head on</td>
<td>2,204</td>
</tr>
<tr>
<td>Miscellaneous or other</td>
<td>1,065</td>
</tr>
<tr>
<td>Motorcyclist</td>
<td>0</td>
</tr>
<tr>
<td>Non-Collision, overturned, jackknifed or ran off road (no object)</td>
<td>4,406</td>
</tr>
<tr>
<td>Not Slewed</td>
<td>29</td>
</tr>
<tr>
<td>Other Animal</td>
<td>375</td>
</tr>
<tr>
<td>Pedestrian</td>
<td>1,451</td>
</tr>
<tr>
<td>Rear End</td>
<td>49,483</td>
</tr>
<tr>
<td>Sideswipe - Opposite direction of travel</td>
<td>3,642</td>
</tr>
<tr>
<td>Sideswipe - Same direction of travel</td>
<td>15,364</td>
</tr>
</tbody>
</table>
Example 3: Safety Analysis

Annual Deaths from Crashes in Virginia

Number of People Killed

Deaths per population (100,000)

Year


Total Deaths
Deaths per population (100,000)
Example 4: Asset Management

Purpose: To ensure that VDOT manages its infrastructure, equipment, and property assets in a manner that preserves their value, maximizes the Commonwealth’s return on transportation investment, and ensures the safe and efficient movement of people and goods.

Who is Responsible for the operation?
District Maintenance sections, Asset Management Division, Operations Planning Division
Example 4: Asset Management

What Processes are Used?

• Estimate statewide maintenance needs by districts, systems and assets
• Develop, maintain and monitor maintenance budgets
• Develop, program, schedule, and manage maintenance and property management contracts
• Develop and deliver asset management training
• Maintain equipment fleets, monitor utilization, set rental rates, sell used and procure new equipment
Example 4: Asset Management

Measures:
• On-Time Maintenance Projects
• On-Budget Maintenance Projects
• Equipment utilization rate
• Safety rest area availability

Related Higher Level Measures:
• % of Pavements rated deficient
• Ride Quality
• % of Bridges rated structurally deficient
• Customer satisfaction with rest areas; fatigue related crashes
Example 4: Asset Management

FY07 Maintenance Contracts Completed (On Time)

Note: The number of actual completions may exceed planned completions when contracts are completed ahead of schedule.

75% On-Time Maintenance Target (same as FY06)
### VDOT Internal Dashboard

<table>
<thead>
<tr>
<th>Project Development</th>
<th>Bristol</th>
<th>Salem</th>
<th>Lynchburg</th>
<th>Richmond</th>
<th>Hampton Roads</th>
<th>Fredbrg</th>
<th>Culpeper</th>
<th>Staunton</th>
<th>NOVA</th>
<th>CO</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adv. On-Time</td>
<td>83.3%</td>
<td>73.9%</td>
<td>69.2%</td>
<td>87.5%</td>
<td>61.5%</td>
<td>R</td>
<td>50.0%</td>
<td>83.3%</td>
<td>95.8%</td>
<td>53.3%</td>
<td>N/A</td>
</tr>
<tr>
<td>Cost Estimation</td>
<td>100.0%</td>
<td>60.0%</td>
<td>78.6%</td>
<td>100.0%</td>
<td>40.0%</td>
<td>R</td>
<td>66.7%</td>
<td>50.0%</td>
<td>90.0%</td>
<td>100.0%</td>
<td>N/A</td>
</tr>
<tr>
<td>Fed Oblig. - act-v-plan</td>
<td>TBD</td>
<td>TBD</td>
<td>TBD</td>
<td>TBD</td>
<td>TBD</td>
<td>TBD</td>
<td>TBD</td>
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<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>On-Time Const.</td>
</tr>
<tr>
<td>On-Time Maint.</td>
</tr>
<tr>
<td>On-Budget Const.</td>
</tr>
<tr>
<td>On-Budget Maint.</td>
</tr>
<tr>
<td>Env. Compliance</td>
</tr>
<tr>
<td>CQIP Compliance</td>
</tr>
<tr>
<td>Construction Ln Miles</td>
</tr>
<tr>
<td>Construction Bridges</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Asset Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pavement - Interstate</td>
</tr>
<tr>
<td>Pavement - Primary</td>
</tr>
<tr>
<td>Bridge Condition</td>
</tr>
<tr>
<td>Maint. Spending</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Administration</th>
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</thead>
<tbody>
<tr>
<td>Administrative Budget</td>
</tr>
<tr>
<td>Inventory Compliance</td>
</tr>
<tr>
<td>SWAM</td>
</tr>
<tr>
<td>Lost Time Injury Rate</td>
</tr>
<tr>
<td>Off&amp;Admin Util Female</td>
</tr>
<tr>
<td>Off&amp;Admin Util Minority</td>
</tr>
<tr>
<td>Prompt Pay Cert.</td>
</tr>
</tbody>
</table>
Lessons Learned

• Measuring performance leads to changes in behavior
  – Negative changes - May result in people “managing the measure” – finding less desirable ways of making performance “look good”
  – Positive changes – Gets people thinking
    • first about process details, bottlenecks, inefficiencies, assignment of responsibilities,
    • second about method or technology being used – more significant
    • third about the “bigger picture” – connections and dependencies to higher level measures and outcomes
Lessons Learned

• Performance Management is a process that takes time
• Learn from mistakes and change appropriately
• A little competition is a strong motivator
• Use in a positive way to build broader understanding of how business works and pride in accomplishments
• Keep perspective with higher goals and measures