Digital Dashboards In Terminal Operations Management

AAPA Marine Terminal Management – IT360
October 19, 2011- Long Beach CA
Frank J. Mazzella, APL Ltd.
What are Dashboards?

- **Technology Tools That Provide Real-Time Visualization of Critical Business Indicators to Help in Decision Making**
  - Provide a Visual “Snapshot” of Key Performance Indicators
  - Gain total visibility of multiple systems or measures instantly

- **Benefits of Digital Dashboards include:**
  - Ability to make more informed decisions
  - Align strategies and organizational goals
  - Ability to identify and correct negative trends
  - Measure efficiencies/inefficiencies
  - Ability to drill down into underlying causal indicators and details
  - Saves time compared to running multiple reports
Operational vs. Analytical Dashboards

**Operational**
- View of current activities and frequently changing metrics
- Identifies potential operational issues as they occur
- Provides alerts on exception issues, and drill-through to facilitate real-time response
- Require less training than analytical dashboards

**Analytical**
- Gains insights from a volume of data collected over time
- Understand what happened, why, and what changes should be made in the future
- Sophisticated models, what-if analysis and pivots to identify patterns and opportunities
- Often used by analysts and highly trained staff

*Operational, or KPI dashboards tell you if you’re on target today. Analytical dashboards set targets for tomorrow.*
Characteristics of Operational Dashboards

- **Graphical (and textual) Displays**
  - Graphics convey information “At-a-Glance“

- **Real-time Data**
  - Enables Right-Time Decision Making
  - Aggregates Multiple Data Sources into Composite Views

- **Alert System**
  - Visual Indicators and Alerts (Including Email, SMS, etc.)
  - Event-based or Scheduled Reports with Data

- **Actionable**
  - Identify in real time that action needs to be taken.
  - Drill-down and Causal Analysis to identify what action is needed

- **User-customizable (highly desirable)**
  - Operational dashboards are both “top-down” and “bottom-up” tools.

“*Operational dashboards track core operational processes and emphasize monitoring more than analysis or management.*“

- Performance Dashboards, Wayne Eckerson
Case Study APL / Eagle Marine Services

• Business Need
  – To Manage Marine Terminals Effectively, Operations Management requires real time access to:
    • Equipment productivity
    • Yard inventory conditions
    • Gate conditions

• Current State
  – Current systems do not provide this information in an immediate and visible manner.
  – Inefficiencies in production and avoidable expenses are incurred as a result.
Dashboard Opportunities

- Productivity
- Inventory
- Gate Conditions
- S/T Demand forecasting
- Technology Effectiveness
- Exception Event Alerts

ALL CTR in the YARD  9764
CTRS WHLD  5931
EMPTY on WHEEL  694
CAPACITY Ground Utilization %  0.94
LFD Import Today  36
Import on Demurrage  147
Crane Productivity

- How are the Cranes Doing?
- What are the Cranes Doing?
- Where is Corrective Action Needed?
Inventory

- Text is Still Important
- Inventory Overview
- Capacity Utilization
- Line Operator Limits

### Empty Inventory

- **ALL CTR in the YARD**: 9764
- **CTRS WHLD**: 5931
- **EMPTY on WHEEL**: 694
- **CAPACITY Ground Utilization %**: 0.94

- **LFD Import Today**: 36
- **Import on Demurrage**: 147
Example: Inventory Drill-Down

- **Level 1**: Containers in the Yard
Example: Inventory Drill-Down

- **Level 2**: 40 ft Containers by Status
Example: Inventory Drill-Down

- **Level 3: Exports by Vessel**
Gate Conditions

- Customer Facing
- Problem / Trouble Alerts
- Resource Management
- Rapid Operations Response to Changes in Volume or Patterns, i.e. Load/Empty, Line, etc.
Short Term Demand Forecasting

- Gate and Yard Manning, Equipment Needs
Technology

- How is it Performing?
- **Measure by Outcome**
- Rapid Response to Exceptions
- Minimize Operational Impact
At a Glance: Terminal Summary

- One Central View
  - Vessel
  - Rail
  - Yard

- Eliminates Reports, Saves Time

- Facilitates Communication & Collaboration
Alerts & Reports

- Alerts
  - Threshold Violation
  - Incident Notification

- Avoiding Alert Overload
  - Valid Thresholds
  - Blackout Periods
  - Appropriate Distribution
Alerts and Reporting

- **Scheduled Reports**
  - Optional detail
  - Set it and Forget it
A Few Words About Implementation

- **Executive leadership**
  - A dashboard project must have direction from the leadership.

- **Information Technology**
  - Unless all the data for the dashboard comes from non-IT administered systems, it is imperative to have IT support.

- **Viewers**
  - There are few if any successful ROI stories for dashboards that do not have “viewers” whose professional success is supported by the dashboard.

- **Choosing Metrics**
  - The goal is to uncover the metrics and KPIs that lead the user to a specific decision or action.
Thank You