Implementing an Enterprise-wide Measurement Program

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Outline

• Background and Approach
• Status and Lessons Learned
• Demonstration of Web-based collection tool
NCTSI

• Naval Center for Tactical Systems Interoperability (NCTSI)
  – Located in San Diego
  – Detachments in US (East/West Coast), Europe and Asia

• NCTSI Mission: Promote interoperability of Naval forces by
  – Testing/certifying tactical systems for interoperability of Naval, Joint and NATO forces
  – Interfacing to and participating in standards development
  – Providing network design services to the fleet
Motivation for Measurement

• The Command is composed of seven departments
• Personnel consist of active-duty Navy, civil servants, and Northrup-Grumman contractor technical support

Motivation for measurement: Commanding Officer wanted data on basic quantitative questions
  – e.g., what does it cost us to do X?
Background - 1

- November 2001: SMI began collaborating with LCDR Dave Heathorn to implement a measurement program
  - Commanding Officer wanted measures used throughout NCTSI to give increased visibility into activities and products
- Started with measurement pilot in one department (the one with the most structured process)
  - Implemented progress and effort measures
  - Web-based data collection and reporting tool developed by Heathorn and Northrup-Grumman programmer
Background -2

• Expanded measurement program to other departments
• Defined information requirements (initially derived from department goals)
  – Departments varied widely in their ability to articulate goals and action plans to achieve goals
• Met with CO about the need for more direction on appropriate goals for the departments:
  – **Efficiency**: Make best use of limited assets by eliminating wasteful practices and improving utilization of tools
  – **Effectiveness**: How well are we accomplishing the Command’s mission? Not only monitoring interoperability but being proactive to improve systems being delivered to the fleet
  – **Accuracy**: Quality products that stand up to the harshest scrutiny
  – **Consistency**: Repeatable events that allow for side by side comparisons to determine the true cause of any anomalies
Example of One Department’s Goals: Fleet Testing

• Effective
  – 80% of the ships in the fleet are current on interoperability testing
  – 100% qualification of all test personnel in data link testing

• Efficient
  – All fleet tests less than 8 hours

• Accuracy/Quality
  – For fleet tested units, 0 non-identified interoperability deficiencies reported after test

• Consistency
  – 100% of the detachments are using test procedures that are consistent with NCTSI master test procedures
Current Department Measurement Lifecycle

- Department goals
- Department Information Needs
- Measures and Indicators
- Implemented in Tool
- Data Collected
- Data Analyzed
Transition to Enterprise Measures

**Department Measures**

<table>
<thead>
<tr>
<th>Efficiency Indicators</th>
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X 4

**Interdepartmental Dependencies**

Interoperate
Three Approaches to Command-Level Measures

- **Local optimization**
  - The Command is the sum of its parts (Departments)

- **Inter-department dependencies**
  - What are the interactions between the departments that need to occur in order for the Command to function optimally?

- **Command’s impact on Navy interoperability**
  - Is interoperability within the Navy improving? Within the Joint Forces? Within Allied Forces?
  - What factors outside of NCTSI’s control impact interoperability?
    - Example: Observed operator skill level during testing fed back to the Training Command.
Local Optimization

Department Mission and Goals

- Standards
- System Testing
- Fleet Testing
- Network Design

Efficient
Effective
Consistent
Accurate
Inter-Department Dependencies

Standards Evolution & Maintenance

Develop Master Test Procedures

Improve Master Test Procedures

System Testing

Make results available

System Deficiency Reporting / Tracking

Improve standards

Fleet Deficiency Reporting / Tracking

Make results available

Adopt Master Test Procedures

Review previously identified problems

Fleet Testing
Command’s impact on Navy interoperability

Assumed Interoperability

Why is it not 100%?

Compliance Testing

Standard – 1

Standard – 2

Standard – 3

Why is it not 100%?
Transition to Enterprise Measures

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These have been defined

**Interdepartmental Dependencies**

These are being defined; some measures identified

Beginning to look at this

Interoperate
Outline

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Status

• Goals/Information Needs, measures and indicators defined for each department
  – Data being collected
  – In some cases, data pulled from existing databases
• People are generally on board
• Greatest variety of reactions have come from middle managers (department heads or their deputies)
  – “We already know all this. Why do we need to collect data?”
  – “This is good stuff but it’s overkill”
What is working…

• Constantly repeat two mantras
  – Don’t measure unless you want to know something
  – It’s your measurement program - not ours

• Feedback – Feedback - Feedback
  – Monthly meetings with all Department Heads to review information needs, and analysis
  – Meetings as needed to review anomalous data and analysis with data providers (workers)

• Understanding that information needs change
  – On going activity: evaluating measures and indicators

• Command-level sponsorship and interest is extremely important
Lessons Learned

• Being open with data analysis and never pointing it at anyone helps alleviate people’s fears
• Middle-level managers are the “speed bump” in adopting measurement as a management tool.
• There are always early adopters of a measurement program
  – Recognize them
  – Get their input
  – Support their enthusiasm
• Most Enterprise Measurement books address commercial-for-profit and not Government / DOD
  – The focus is switched to Mission versus Profit
Web-based Tool Demonstration
Contact Information

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