Measuring IT Program Outcomes

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Topics

Getting on the same page: terms, definitions, concepts

Information Technology Departments

IT Outcome Measurement Approach

Workshop Exercise

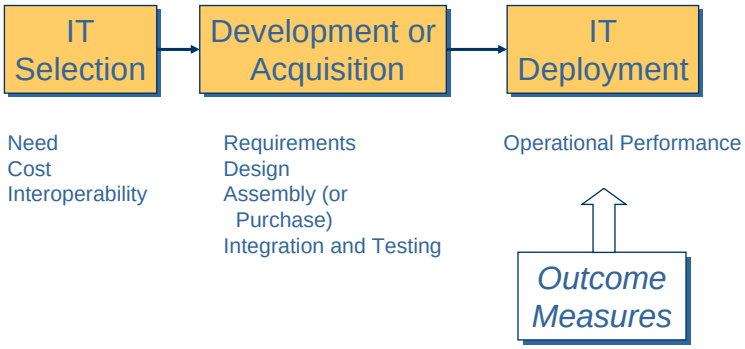
UNDERSTANDING CIO NEEDS

- **Consistent, predictable delivery of products and services**
- **Ability to measure performance and assess progress against goals**
- **Concentrate resources around client/customer to enable business capability and drive innovation**
- **Highly engaged workforce and very satisfied clients**
- **Opportunity to add value; contribute to business success**

Source: "The Effective Use of Performance Measurement A CIO's Perspective," Jamie Bird, Chief Information Officer, Corporate Executive Board, PSM User's Group Conference, July 2008

Information Technology (IT) Phases

Where does IT show value or add to business success?



Examples of IT Products and Services

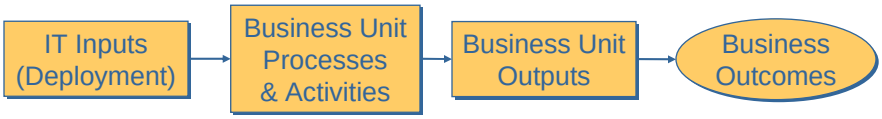
- System Development
- System Acquisition and Configuration
- Hardware and Software Maintenance
- Deployment of new systems and equipment
- Data Management
- Disaster Recovery
- Systems Security
- Systems Training
- Voice Communication Services
- E-Mail Services
- Wireless Connectivity
- Local Area Networks
- Wide Area Networks
- Call Center
- Field Support Representatives

Outcome Measurement Definition

- Outcome measurement in this workshop refers to actual performance relative to Enterprise goals and targets
  - An Enterprise has multiple business units, organizations, divisions, or departments of which IT is one
- There is an implicit causal chain linking change (resulting from IT deployment) to a goal
  - A change is made (there is a pre- and post-state)
  - Outcome measures quantify the change in the causal chain
- An outcome measure is stated in the context of a goal

Outcome Measurement Approach

Cause and Effect Chain



IT products and services

Work done over time that utilizes the IT inputs to create outputs

Results produced by the Business Unit

Attainment of Business Goals

The Need for Goals

Outcome measures must be established relative to enterprise goals, i.e.

- How do you show that an IT project is supporting something that the enterprise is trying to accomplish?

We use a cause and effect chain of reasoning to show how an IT project will support the goals of the enterprise, i.e.

- Showing the positive impact of an IT project

Goal Context Example -1

Goal: Facilitating Legitimate Trade and Travel: Facilitate the more efficient movement of legitimate cargo and people.

- Objective: Modernize Possessing systems
  - Strategy: Develop and improve systems that can provide advance information for pre-screening cargo containers, agricultural products and passengers to aid in the identity of high risk enforcement.
    - IT Inputs: Capability to accept and analyze electronic data on cargo, agricultural products and passengers
    - Business Unit Processes: Processing time at point of entry (reduce)
    - Business Unit Output: Examinations (eliminate false exams)
    - Business Unit Output: Traffic volume (increase)

Source: ACE Performance Reference Model Measures, Cargo Systems Program Office

Goal Context Example

Goal: expand to international markets

- Objective: Expanded sales presence overseas
  - Strategy: Instant worldwide workforce communication
    - IT Inputs: (1) Web-based system available on mobile devices
    - (2) Instant voice-based multi-lingual translation tool
    - Marketing Unit Processes: Make contacts with wholesaler
    - Marketing Unit Output: New wholesaler agreement (contract)

- Objective: Increase production variability/flexibility due to overseas requirements
  - Strategy: Set up manufacturing line to minimize inventory and downtime and maximize units produced
    - IT Inputs: (1) Inventory-control system to calculate optimum production run
    - Manufacturing Process: Production switch out and set up

Goal Context Example -2

Goal: Public will be protected from unsafe practices that pose serious threats to their local environment

- Objective: Local communities will be assured of safe and proper handing of dangerous toxic chemicals
  - Strategy: Reduce the number of serious incidents in the transport / storage of Class A1 and A2 toxic chemicals
    - IT Inputs: Develop and install automated systems for tracking movement and storage of chemicals
    - Business Unit Processes: License carriers and storage operators for different classes of chemicals (increase)
    - Business Unit Processes: Monitor risk community risk factors (reduce)
    - Business Unit Outputs: Number of incidents of spills and leaks in the storage of chemicals (reduce)

Source: "Cascade Performance Budgeting," John Mercer, May 2003

Case Study

Customs and Border Protection (CBP) Modernization Program

Need to show benefits being obtained for the IT investment

- Automated Commercial Environment (ACE)
- www.cbp.gov/xp/cgov/trade/automated/modernization/

Government Accountability Office recommended improvements to performance measurement program

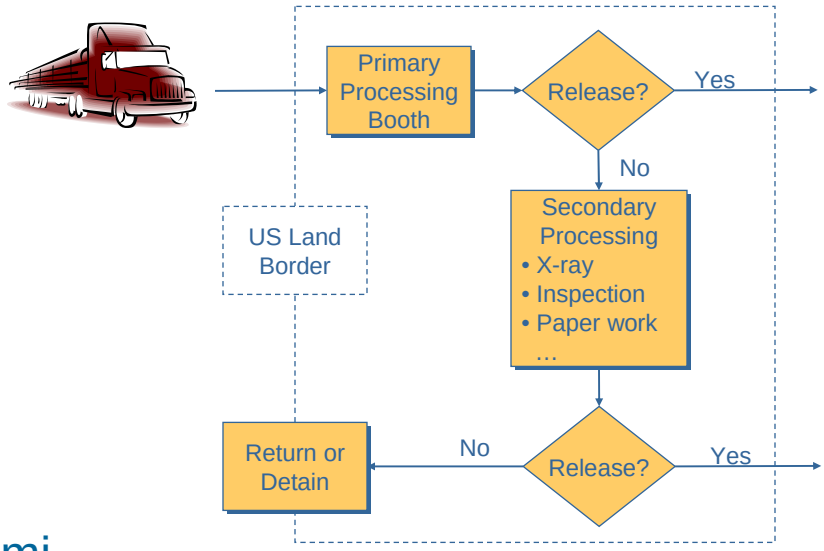
- to demonstrate clearer alignment with agency goals

A set of performance measures were identified using the Performance Reference Model (PRM)[1] as a framework (similar to model discussed here)

These measures went through an extensive review and approval cycle through CBP and DHS

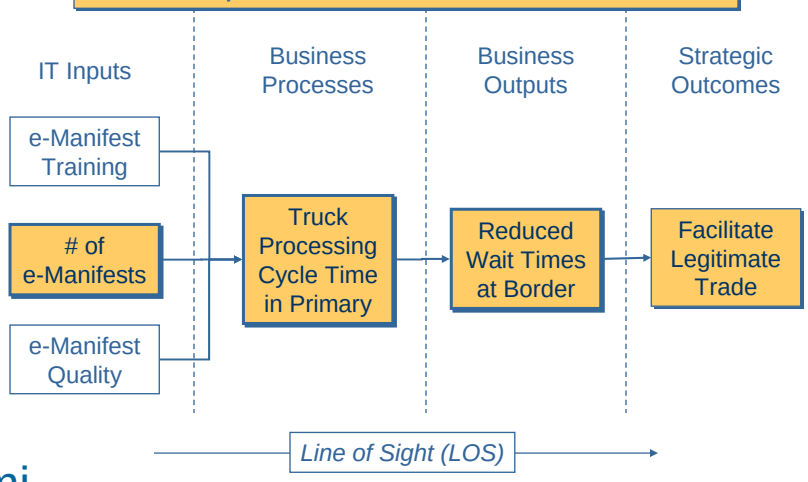
Note: [1] The PRM is maintained by the Office of Management and Budget http://www.whitehouse.gov/omb/egov/a-2-prm.html

Cargo Processing at a Land Border

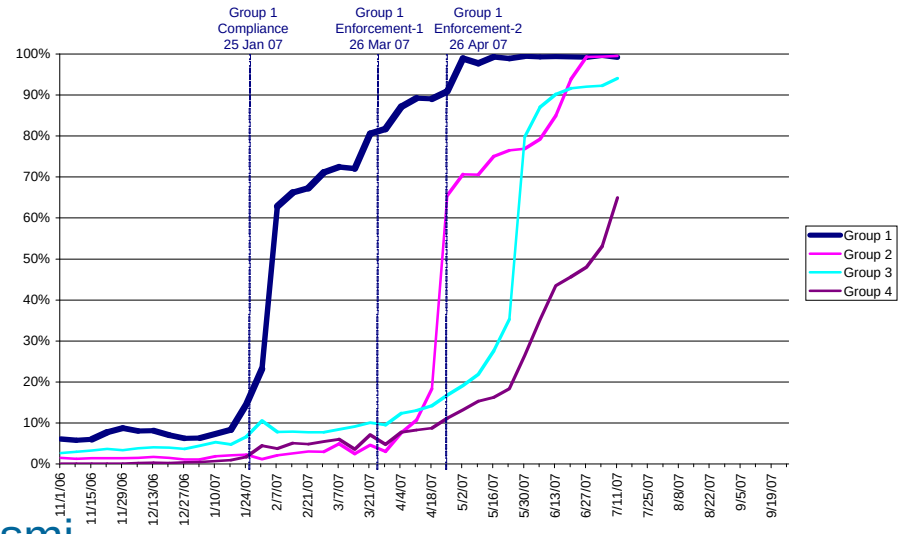


Example of an ACE "Story"

Using a *cause and effect chain* to tell a story creates a powerful communication tool



IT Input: e-Manifest Compliance Report



Operational Process: Primary Booth Processing Time Report

Processing Times for Group 1 Ports for July 2007

Manifest Type	Number of Trucks	Average Truck Processing Time (Seconds)
Electronic	82,530	33.5
Paper	34,515	58.8

Output: Reduce Border Wait Times, Canadian Border

Port Name Crossing Name	HOURS	Max Lanes	STANDARD
Alexandria Bay Thousand Islands Bridge	24 hrs/day 7/14/2007	3	At 1pm EDT **5 min delay** 2 lanes open
Blaine Pacific Highway	24 hrs/day 7/14/2007	3	At 11am PDT **30 min delay** 1 lane open
Buffalo/Niagara Falls Lewiston Bridge	24 hrs/day 7/14/2007	4	At 2pm EDT **no delay** 4 lanes open
Buffalo/Niagara Falls Peace Bridge	24 hrs/day 7/14/2007	7	At 2pm EDT **1 hr delay** 6 lanes open

Source: CBP Website: http://apps.cbp.gov/bwt/ (for July 2007)

Measurement Approaches

What are different approaches for collecting outcome measures?

- Show a change from pre-deployment to post-deployment
- Show progress towards a measurable goal
- Measure of a specific benefit
- Show evidence of a new capability
- Show the results of an investment: $

What is needed is a guidance on how to identify measures

- This workshop will attempt to create a PSM-style "Information Category-Measurable Concept-Question" (ICQ) table

For Additional Information

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