

# CGEIT Exam Prep: Week 7

## Performance Measurement



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Dial IN: 641-715-3635 | CODE: 675-176#

Nov 12, 2009

1

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2

## Resource Reminders

- **Share questions \ comments with class**
  - Use: [cgeit@tunitas.com](mailto:cgeit@tunitas.com) or wiki
- **Lectures and links**
  - <http://www.tunitas.com/cgeit>
- **Class Wiki for notes and candidate contributions**
  - <http://cgeitexamprep.wikispaces.com/>
- **Weekly sample questions generally found at:**
  - <http://Tinyurl.com/cgeit-wk#> where # is the week number
- **SSF In-Person Session**
  - ~~November 14, Location TBD~~
- **CISA CPE (IT Governance Domain)**
  - 1 CPE hr for each class hr

3

## Schedule

- **Nov 19: “Extended Enterprise”**
  - Not a CGEIT domain but important topic
  - Application of CGEIT concepts to the 21<sup>st</sup> Century value chain
    - No ‘best practice’ akin to IT strategy / IT steering committees, enterprise architecture, cascading BSC
  - Class will present basic concepts and some vertical market case studies
    - US healthcare; Intel-MSFT-DELL-FedEx;
- **Dec 2: “Risk Management”**
  - 2/3 of candidates indicate that as area of strength
  - Class will introduce broader ERM and RiskIT perspective
- **Dec 12: Review**
  - No new concepts
  - Additional material to clarify concepts
    - Balanced Scorecard
    - Areas identified by candidates
      - Send email with requested topics to [bankey@tunitas.com](mailto:bankey@tunitas.com)

4

## Agenda

- **Practice Test Items**
- **Performance Measurement**
  - Concepts
  - Governance
  - Frameworks
- **<Break>**
- **Domain Tasks and Competencies**

5

## Week 7 Test Scenario

- *Company is a agency of the US Federal government with law enforcement duties. It receives various regulatory filings, conducts investigation into crimes and refers persons to the DOJ for prosecution. Company contracted for development of an EA, but cancelled project due to other priorities.*
- **What types of questions could we expect?**
  - Alignment
    - Lack of enterprise architecture
  - Value Delivery
    - Government programs are, by definition, a societal cost. IT investments will have to be justified by something other than revenue or profit.
  - Performance measurement
    - Government agency subject to executive and legislative oversight (Clinger-Cohen aka ITMR)

## Performance Measurement Question Hints

- Focus on the purpose & consumer of the performance measure
  - Differing requirements for different layers of management
    - Timeliness and detail
  - Answer performance questions relating to delivery of value / contribution to the business in financial or *business process terms*
  - Answer performance questions relating to service management in terms of system or process metrics

## Question 7.1

*An Agency goal is to more easily integrate information collected at different times and by different sources within the Agency. Which of the following measures would best indicate IT's progress toward this goal?*

- *Number of systems compliant with Agency metadata standards*
  - *Too IT-centric. While standards are relevant to integration, concept may not have meaning to Execs*
- *Time required to complete information request*
  - *Could be an answer, but 'information requests' may be secondary to filing of complaints*
- *Number of analyst tools available for use in consolidating data*
  - *Too IT-centric, while tools may support goal, do not indicate satisfaction of it.*
- *Time to complete complaint / filing*
  - *This would be a business consequence of goal satisfaction*

## Question 7.2

The Agency continues to regularly experience incomplete data sharing despite improvement in performance metrics. Which of the following is most likely to be the reason for this?

- Staff are inexperienced in the use of new systems
  - Inconsistent w/ reported metric so likely not relevant
- Information architecture is incomplete
  - Distracter response
- Staff are motivated to keep control over information that they collect
  - Inconsistent w/ reported metric so likely not relevant
- Collected performance metrics measure efficiency rather than effectiveness
  - Inconsistency between metrics and 'reality' implies a deficiency in the metrics. The reported metric reports time w/o control for 'quality'



## Question 7.3

The Agency is concerned that many of its IT systems are 'antiquated'. Which balanced scorecard measure indicates readiness for an IT modernization program?

- % of service contracts meeting SLA w/o dispute
  - Measure of operational efficiency, does not reflect future orientation
- % of agency business processes identified in EA
  - Recognition of Agency business processes and their relationship is essential to modernization of IT.
- % of IT staff w/ certified skills & system knowledge
  - Could be an answer, but certified skills are likely to be relevant to current systems rather than system deployed through modernization
- % of users satisfied with help desk support
  - Distracter response



## Question 7.4

The Agency is a frequent cyber-warfare target. What measure best indicates the effectiveness of IT's security risk management?

- *% compliance with federal information processing standards (FIPS)*
  - *At best FIPS represents minimum standards for security program and only loosely correlated with 'effectiveness'*
- *# of reported security incidents*
  - *Does not reflect Agency's preparation for exploit beyond its recognition of it*
- *# of incidents relating to un-anticipated threats*
  - *Reflects the thoroughness of the Agency's risk assessments. (Low number is better)*
- *% of systems current on all vendor patches*
  - *Inefficient measure of the management of just one kind of risk.*

## Question 7.5

To ensure Agency flexibility when making work assignments, all relevant information and IT must be accessible and transferable to any employee in any office. What measures satisfaction of this goal?

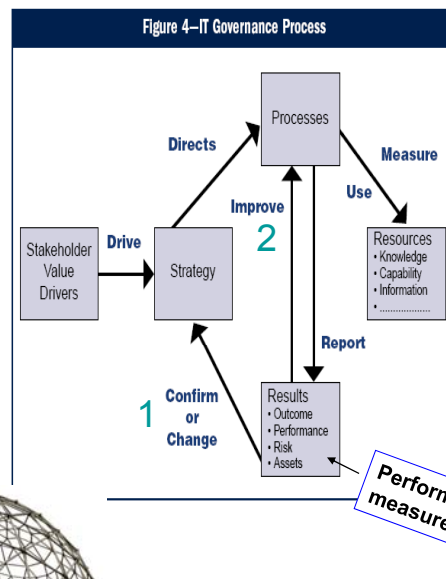
- *# of incidents where employee unable to recover critical data within one work day*
  - *Business outcome most closely related to the goal*
- *Average time to provision an 'Agency standard' workstation*
  - *Too IT centric. May have relevance to performance, but little meaning to management*
- *Minimum service level of field office WAN connection*
  - *To IT centric. May have relevance to performance, but little meaning to management*
- *Average user rating of satisfaction with IT services*
  - *Distracter response.*

## Performance Defined

- *In IT, the actual implementation or achievement of a process. (ISACA)*
    - Production of system or process
  - Performance measures can be *direct*
    - # service requests completed
    - Time to complete service request
    - # exceptions handled
  - Performance measures can be *indirect*. ie, relative to:
    - Business objective
    - IT, process or activity goal
    - Benchmark
- Metrics of greatest relevance to governance are indirect

13

## Dual Purpose of Performance Measurement



1. Confirm (or not) that the targeted processes support the business objectives
2. Support the improvement of the processes that created the results being measured

14

## Double loop learning / management model

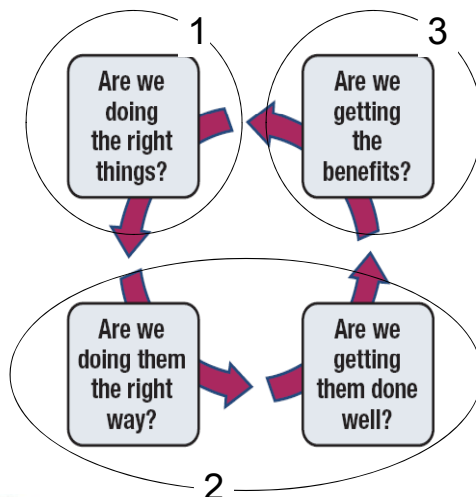
### 1. Strategic learning/ ongoing strategy

- Long range external focus / partnerships, (definition of core, etc)
- Balanced scorecards for expression and measurement

### 2. Management control loop

- Operational focus
- SWOT, environmental reviews, internal control analysis; CSF for expression and measurement

## Performance Question differs by Domain



1. Strategic alignment
  - Have the targeted processes achieved objectives?
2. Resource Management
  - Have the targeted processes been efficient & effective
3. Value Delivery
  - Has the portfolio of 'IT enabled business investments' delivered business value

## Measurement Questions

To support a specific management objective

1. What needs to be measured?
  - System production (metrics)
  - Business 'result'
2. How to measure?
3. Who is responsible?

Governance of performance evaluation

1. Are the measurement processes complete, accuracy and timely?
2. Does the enterprise use the performance information well?
  - Learning the appropriate lessons

17

## ME1: Monitor & Evaluate IT Performance

- Process goal is transparency of IT cost & benefits
  - *Transparent to whom?*
    - Different [information] consumers require different content, format and timing
- Governance objective satisfied by:
  - Translating *performance* reports into *management* reports
  - Comparing performance with 'agreed upon' targets
  - Determining remedial action plan

18

## ME1: Monitor & Evaluate IT Performance

### Control Objectives:

- define the relevant performance indicators
  - ME1.1 Establish monitoring framework
  - ME1.2 Define performance targets & benchmarks
  - ME1.3 Establish monitoring methods
- systematic & timely performance reports
  - ME1.4 Periodically review performance
  - ME1.5 Sr. Management reports
- prompt action upon deviation
  - ME1.6 Remedial action

19

## Monitoring Frameworks

- Specify scope, methodology and process
  1. Monitor contribution to business
  2. Measure properties of IT solution \ service delivery
- Frameworks (some)
  - Balanced Scorecards
  - Information Economics
  - COBIT
  - ITIL
- Use of frameworks are not mutually exclusive
  - BSC and IE better support objective 1
  - COBIT and ITIL better support objective 2

20

## Establish Goals / Targets

- Monitoring system [should] explicitly tie IT goals / objective to business goal
  - Responsibility of business management to approve
- Hierarchy of objectives provides direction for IT components
  - E.g., Business target => IT target => IT development target
- Cause & effect relationship supports goal hierarchy
  - E.g., Meeting IT development objectives (in part) results in satisfaction of IT objectives
    - 'dilution' reflects the presence of other factors affecting IT goals beyond just IT development

21

## Establish Goals / Targets : Use of Benchmarking

- 'Benchmarks' shortcut the process of determining performance targets
  - Use performance of competitors (or other) to determine what is 'obtainable'
    - Industry at large
    - 'top performers'
  - Set goals in terms of such benchmarks
- Begs the question of 'causation' \ relevance
  - How does attainment of benchmark imply success in achieving business objective?

22

## Selection of Monitoring Methods

- Within context of framework, must select specific measures
  - e.g., **a** balanced scorecard
  - e.g., **a** (set of) metrics
- Chosen framework, should provide guidance for selecting / constructing the measures
  - Sometimes more art than management science
- Task typically assigned to the role responsible for performance of the process / IT component
  - Must be reviewed and approved by person accountable for process / IT component

23

## Periodic Review Timing

- Management purpose determines timing of reviews
  - Strategic business planning has 3-5 year cycle
    - Review of performance to confirm / adjust alignment with expectations
    - Review frequency varies with company and industry
      - Monthly (!)
      - Synch with financial reports (qtr | annual)
      - Event driven
  - Service management
    - Continuous process improvement requires frequent reporting
    - Timing varies with requirements of change management process
      - Expensive change => less frequent performance review

24

## Management Reports

- Management purpose and company culture determine the content and granularity of reports

25

## Remedial Action

- Action upon recognition of shortfall between performance and target
  - Verification
  - RCA
  - Action Plan
    - At 'strategic' level action plan, may be something other than a 'project' a completion may be indeterminate
    - Expect defined lifecycle for action plan
      - Proposal
      - Review and approval
      - Tracking
  - Adjustment of target

26

## Monitoring Frameworks

### *IT Contribution to Business*



- Monitoring is an essential component of *enterprise* governance applied to all areas of corporate activity, not just IT
- Evaluation of business value of IT should be made relative to the value of any other corporate investments
- Assessment of IT's value must be made in the vernacular of corporate planning. Not IT centric
  - Corporate internal | proprietary methodologies
  - ☼ Balanced scorecards
  - Information economics / Decision analysis
- Focus on value and information effectiveness
  - Doing the right thing and deriving value

27

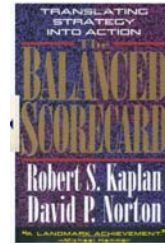
## Monitoring Frameworks

### *Solution and Service Delivery*

- Monitoring of value does not provide detailed information about the operation of systems and process
  - Management scorecard vs process metrics
- IT solution / service management requires (near) 'continuous' monitoring
  - Distinct from IT & business planning cycles
- Challenge is to ensure that the service / solutions metrics are relevant to the business requirements
  - Eg. Not emphasize *availability* (uptime metrics) where the business requirement is for *reliability*
- Some monitoring must be performed in the vernacular of information and systems management
  - COBIT
  - ITIL
- Focus on efficiency and cost effectiveness

28

## Balanced Scorecards



- General method to translate set of strategic objectives into a linked set of performance measures
  - Claimed applicability to any strategic planning framework
    - SWOT, strategy matrix (BCG), 5 forces (Porter), core competency
- Cause and effect model supports the cascade BSC to subordinate units
  - Top down
  - Lose precision as corporate objectives translate into objectives for functional units

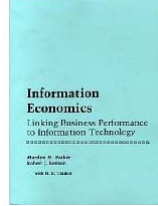
29

## Balanced Scorecard Methodology

- XXX

30

## Information Economics



- Stated goal is to evaluate alternative IT investments on a broader economic basis than ROI
  - Distinct context for IT; may not support enterprise planning & governance processes & therefore be of limited value in IT governance
- Scores 'projects' by aggregating
  - + 'Weighted ROI' that sums
    - Traditional cost benefit | "Value linking" | "Value Acceleration" | "Value Restructuring" | "Innovation valuation"
  - + Business domain assessment that scales
    - Strategic match | Competitive advantage | management information | competitive response | organization risk
  - + Technology domain assessment that scales
    - Consistency w/ EA | Definitional uncertainty | Technical uncertainty | infrastructure risk

31

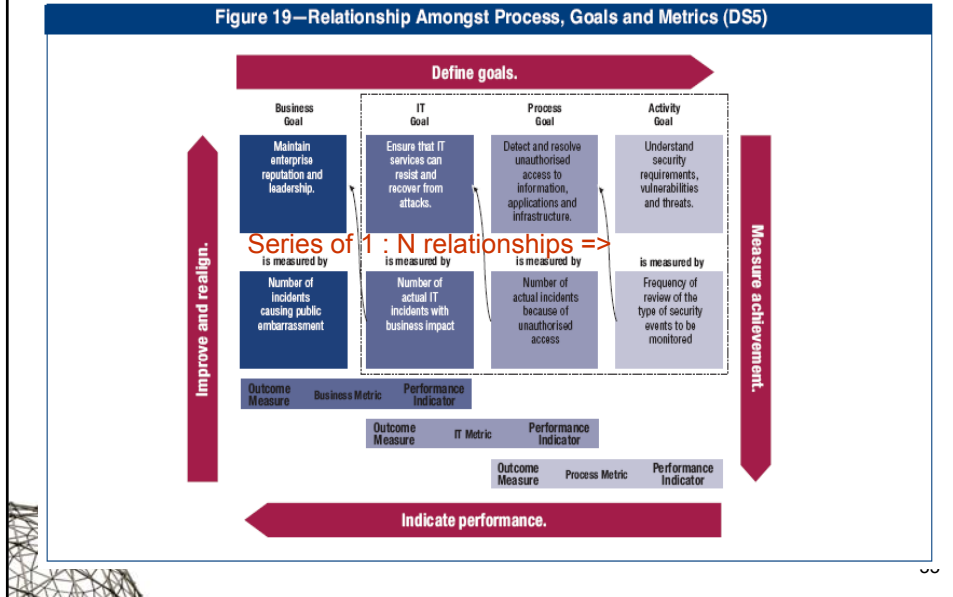
## COBIT Assessment Model

- 2 types of 'metrics'
  - Outcome measures (aka key goal indicators aka KGI)
    - Measure goal satisfaction post hoc
  - Performance indicators (aka key performance indicators aka KPI)
    - Assessment of ongoing system
    - Bound to specific goals
      - Indicate likely goal satisfaction
- Metrics are defined at 3 levels for each COBIT process
  - Activity
  - Process
  - IT
- Cause and effect
  - IT Goals -> Process Goals -> Activity Goals
- COBIT suggests some metrics

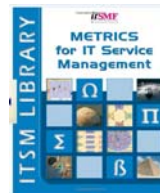
32

# COBIT Assessment: Example

Figure 19—Relationship Amongst Process, Goals and Metrics (DS5)



## ITIL Process Metrics



- Continuous improvement is an important concept within service management
  - Process metrics are a design element within every ITIL process
- Metrics to support:
  - Management
    - Reality check vis a vis service level agreements
  - Process owners
    - Monitor for trends leading to problems in near or medium term
  - Staff
    - Recognize individual rewards bound to specific metrics
    - Source of suggestions supporting the Continuous Service Improvement Program (SIP)

## Maturity Models

- Characterize the process whose performance is being measured
  - Assess “process management capability” not “process performance”
  - Capability may not be fully deployed or utilized
  - Process maturity & benchmarks prioritize process improvement targets
- COBIT’s generic 6 point maturity model
  - 0 Non-existent
  1. Ad hoc. Activity managed on individual basis w/o standardization
  2. Repeatable. Regular process w/o formality. Reliance on individual knowledge \ diligence
  3. Defined process. Standard process formalized and communicated through training.
  4. Managed & measurable. Monitoring of process and corrective action taken where there is deviation from expected results
  5. Optimized. Continuous process improvement implemented.

35

## Domain Task & Knowledge Competencies

36

## Performance Measurement Tasks

- Establish the enterprise's strategic IT objectives, with the board of directors and executive leadership team, categorized into four areas: financial (business contribution), customer (user orientation), internal process (operational excellence), learning and growth (future orientation), or whatever areas are appropriate for the enterprise.
- Establish outcome and performance measures, supported by metrics, and targets that assess progress toward the achievement of enterprise and IT objectives and the business strategy.
- Evaluate IT process performance, track IT investment portfolio performance, and measure IT service delivery through the use of outcome measures and performance drivers.
- Use maturity models and other assessment techniques to evaluate and report on the health of the enterprise's performance level.
- Use continuous performance measurement to identify, prioritize, initiate and manage improvement initiatives and/or appropriate management action.
- Report relevant portfolio, program and IT performance to relevant stakeholders in an appropriate, timely and accurate manner.

37

## Perf Measurement Knowledge Statements

- Knowledge of the enterprise's business objectives
- Knowledge of strategy mapping and balanced scorecard principles
- Knowledge of the scope, objectives and benefits of commonly used IT maturity models, including their maturity attributes
- Knowledge of data collection techniques for performance measurement
- Knowledge of continuous improvement methodologies
- Knowledge of IT governance implementation practices

38

## Perf Measurement Knowledge Statements, cont'd

- Knowledge of characteristics of, and selection criteria for, measures and metrics
- Knowledge of outcome measures and performance drivers
- Knowledge of accepted practices in performance measurement (e.g., maturity models) and effective industry benchmarking techniques
- Knowledge of tools and techniques that facilitate measurements, good communications and organizational change
- Knowledge of automated monitoring tools and techniques  
Knowledge of root cause analysis techniques
- Knowledge of life cycle cost-benefit analysis techniques
- Knowledge of evaluating and monitoring IT performance and value governance

