

Performance Measurement

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Agenda: Required Knowledge*

Monitoring of IT performance

- * 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.

Monitoring achievement of strategic objectives

- * 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.

Monitoring service delivery

- * Use continuous performance measurement to identify, prioritize, initiate and manage improvement initiatives and/or appropriate management action.

Reporting

- * Report relevant portfolio, program and IT performance to relevant stakeholders in an appropriate, timely and accurate manner.

Balanced scorecard

- * 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.



* From CGEIT Job Practice (Performance measurement domain)

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Why Measure IT Performance?

Measurement drives change
Informal approach to assessment
=> haphazard change

Determine if the plan has achieved or is achieving the desired results

- Strategic goals & value realization
- Operational efficiency
- Control effectiveness
- etc

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IT Performance Measurement @ 2 levels of Management

- 1. Strategic planning / ongoing strategy**
 - Long range external focus / partnerships, (definition of core, etc)
 - Typically uses Balanced scorecards to communicate strategy and assess completion
- 2. Management control**
 - Operational focus on efficiency and effectiveness of IT systems and processes
 - Typically uses service metrics, key performance and goal indicators

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Performance Measurement in Governance

Figure 4—IT Governance Process *

The diagram illustrates the IT Governance Process. It starts with 'Stakeholder Value Drivers' which 'Drive' 'Strategy'. 'Strategy' 'Directs' 'Processes'. 'Processes' 'Use' 'Resources' (Knowledge, Capability, Information) to produce 'Results' (Outcome, Performance, Risk, Assets). 'Results' are 'Reported' back to 'Strategy', which then 'Improve' 'Processes' and 'Confirm or Change' 'Strategy'. A callout box labeled 'Performance measurement' points to the 'Results' box.

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

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Management Question differs by CGEIT Domain

The diagram shows four management questions arranged in a circle, connected by arrows in a clockwise cycle. The questions are: 'Are we doing the right things?' (top-left), 'Are we getting the benefits?' (top-right), 'Are we getting them done well?' (bottom-right), and 'Are we doing them the right way?' (bottom-left). The cycle is labeled with numbers 1, 2, 3, and 4.

1. Strategic alignment / value management
 - 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
 - Note: 'Benefits' defined in terms of corporate objectives

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Measurement Questions


To support a specific management objective

1. What needs to be measured?
 - Process characteristic (metrics)
 - Business 'result' (outcome)
2. How to measure?
3. When to measure?
4. Who is responsible [for the measurement / evaluation] ?

Governance of performance evaluation

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

COBIT PC6 provides guidance
COBIT ME4.1 provides guidance



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Generic Process Control Model


COBIT's process control objective applies to all COBIT processes

- PC requirements introduced with COBIT 4.1

Sets requirements in the definition of any process.

PC6: "process performance improvement" requires:

- Metrics that provides insight into the outcomes & performance of the process
- Targets that reflect process goals
- Data collection methods
- Comparison of actual measurement to targets and remedial action
- Alignment of metrics, targets & methods w/ IT's overall performance monitoring => ME1

 Similar requirements in ITIL's process definition

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ME1: Monitor & Evaluate IT Performance

ME1 Process goal is transparency of the costs & benefits of IT

- *Transparent to whom?*
 - Different [information] consumers require different content, format and timing
 - » Distinct requirements vis a vis strategic learning vs management control

The governance objective is satisfied by:


- Translating *performance* reports into *management* reports
- Comparing performance with 'agreed upon' targets
- Determining remedial action plan



ME1: Monitor & Evaluate IT Performance

Control Objectives:

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



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ME1.1: Monitoring Frameworks

Specify measurement scope, methodology & process


1. Monitor contribution to business (strategic learning)
2. Measure properties of IT solution \ service delivery (management control)


Potential Frameworks (some)

- Balanced Scorecards (BSC)
- Information Economics (IE)
- COBIT
- ITIL | ITSM Metrics

Use of alternate frameworks are not mutually exclusive


1. BSC & IE better support strategic planning,#1
2. COBIT & ITIL better support management control,#2

 *Need both business direction & process control*

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Monitoring Frameworks


1. IT Contribution to Business | Performance re Business Strategy



Per COSO, Monitoring is an essential component of *enterprise* governance applied to all areas of corporate activity, not just IT


The evaluation of business value of IT should be made relative to the value of all other corporate investments

Assessment of IT's value must be made in the vernacular of corporate planning and cannot be 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

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Monitoring Frameworks

#2 Solution and Service Delivery

Monitoring of value does not provide detailed information about the operation of systems & 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

- E.g.. Don't emphasize *availability* (uptime metrics) when the business requirement is for *reliability*

Monitoring must be performed in the vernacular of information and systems management

- COBIT
- ITIL


Focus on efficiency and cost effectiveness



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ME1.2: Establish Goals / Targets

- Monitoring system [should] explicitly tie IT goals / objectives to specific business goals
 - Responsibility of business management to approve
 1. Strategic plans
 2. Service level agreements
- A hierarchy of objectives provides direction \ guidance for IT components (cascade)
 - 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
 - Satisfaction of IT Goal may not guarantee satisfaction of business goal
 - Often targets are *necessary but not sufficient* conditions



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Targets

Management requires 'targets' | specific objectives

- w/o 'targets' quest for 'more' comes at the expense of competing objectives
- Bound to the timing of strategy | service level agreements



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Establish Goals / Targets : Use of Benchmarking

'Benchmarks' shortcut the process of determining performance targets

- Use the 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?
 - Most likely not appropriate for strategic planning



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ME1.3: Selection of Monitoring Methods


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



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ME1.4: Periodic Review Timing

- Management purpose determines timing of reviews
 1. 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
 2. Management control
 - Continuous process improvement requires frequent reporting
 - Timing varies with requirements of change management process
 - e.g., Where changes are expensive or difficult to rollback => less frequent performance review given relative reluctance to act upon findings



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ME1.5: Management Reports

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

- Reports supporting strategic planning
 - Generally intended to indicate the success or failure | timing of the achievement of strategic objectives
 - Recommendations for adjustment; acceleration, etc
- Reports supporting management control
 - Identify *process* shortfall / failures

Dashboards can be used to collect & integrate a variety of measures



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ME1.6: Remedial Action

Required Action upon recognition of shortfall between performance and target


1. Verification
 - Confirm accuracy and meaning of measure
 - e.g., did a single anomalous event result skew results?
 - e.g., have extraneous business events diluted the impact of IT performance upon the targeted measures and lead to an underestimation of IT performance
 - e.g., is the shortfall a failure in strategy? Or execution?
2. "Root cause" analysis to identify underlying deficiency
 - Many methods (some industry specific), e.g.:
Fault tree, barrier analysis, failure mode & effect, 5 whys, Ishikawa ...
 - Focus on process failures that led to the deficiency
 - i.e., it is *process* improvement that reliably leads to better results



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Remedial Action (cont)


3. Action Plan
 - A 'strategic' level action plan may be something other than a 'project' as completion may be indeterminate
 - E.g., realign strategic objectives
 - At the 'management control' level, expect definition of project lifecycle components
 - Proposal
 - Review and approval
 - Tracking
 - At the 'process control level', the action plan may just be a service / change request
 - More or less ongoing activity
4. Adjustment of target
 - Increase / lower expectations
 - Obvious review and approval cycles



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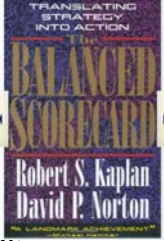
Monitoring Frameworks & Measures

Balanced Scorecards
Information Economics
COBIT
ITIL
Maturity Modeling
Summary



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Balanced Scorecards




BSC provided a 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

Includes assessment of performance from multiple 'perspectives' ~ 'balanced'

- Learning & growth: ie, development of corporate capability
 - Internal: ie, operational efficiency & effectiveness
 - Customer: ie, product & service quality & market acceptance
 - Financial: ie, 'bottom line' results



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Balanced Scorecard Methodology

☀ Implement the IT balanced scorecard as part of a strategic management system

- Describe & communicate vision and strategy
- Link to team and individual goals


Start with 'standardized model'

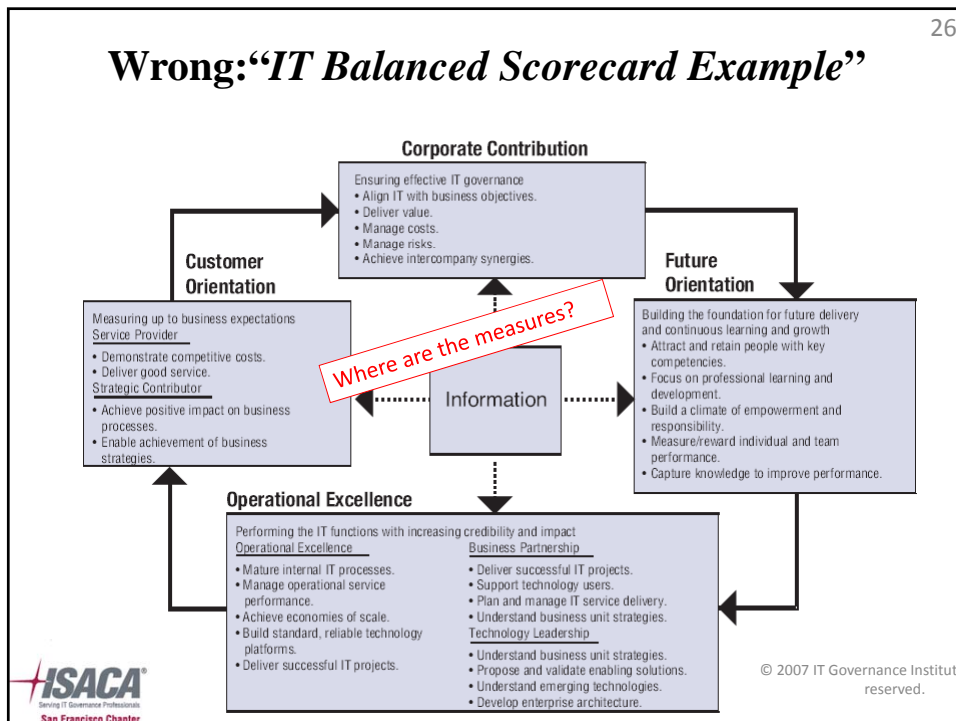
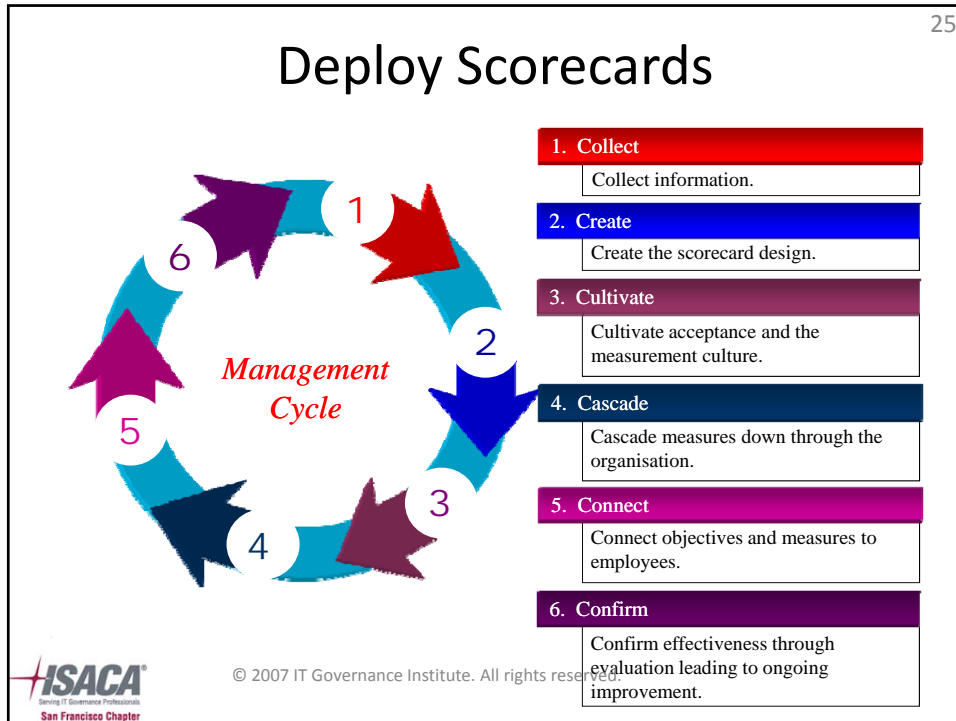
'Cause and effect' model of a chain of strategic objectives

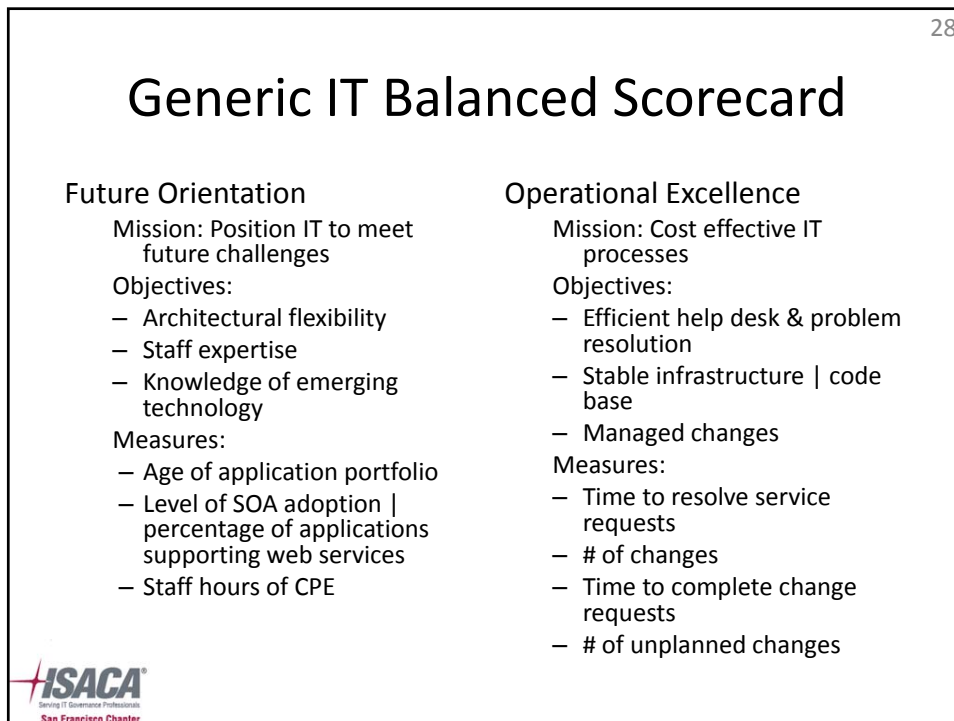
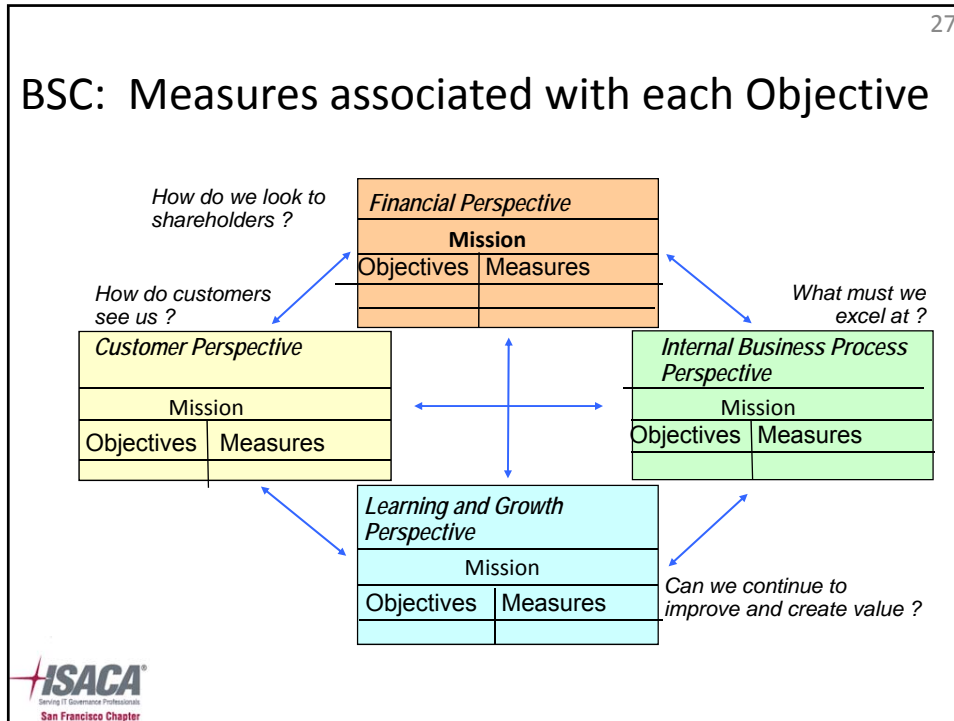
- Each strategic objective accompanied by one or more measures
- Include performance drivers
- Link to financial or mission oriented measures

Subordinate business units link their strategic objectives to the enterprise objectives (alignment)

Identify objectives for each of the four perspectives to ensure 'balance'








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Generic IT Balanced Scorecard

<p>User Orientation</p> <p>Mission: Be preferred supplier; exploit business opportunities through IT</p> <p>Objectives:</p> <ul style="list-style-type: none">- High level of user satisfaction- Cost effective support for business operations- Partnership w/ business in on strategic initiatives <p>Measures:</p> <ul style="list-style-type: none">- User ratings / # complaints- Cost / service- Level of team participation- # of feasibility project participation / # of projects	<p>Corporate Contribution</p> <p>Mission: Obtain reasonable business value from investments in IT</p> <p>Objectives:</p> <ul style="list-style-type: none">- Control IT expenses- High business value of IT participation- High business value of IT projects <p>Measures:</p> <ul style="list-style-type: none">- ROI of IT projects- Avg. Value of projects with IT participation / Avg. value of projects- Yr to yr IT budget / growth of user base & supported functions
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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 rates
 - Strategic match | Competitive advantage | management information | competitive response | organization risk
- + Technology domain assessment that rates
 - Consistency w/ EA
- Risk domain assessment that rates
 - Definitional uncertainty | Technical uncertainty | infrastructure risk | strategy risk | IT service delivery risk

More a measure of promised value than performance


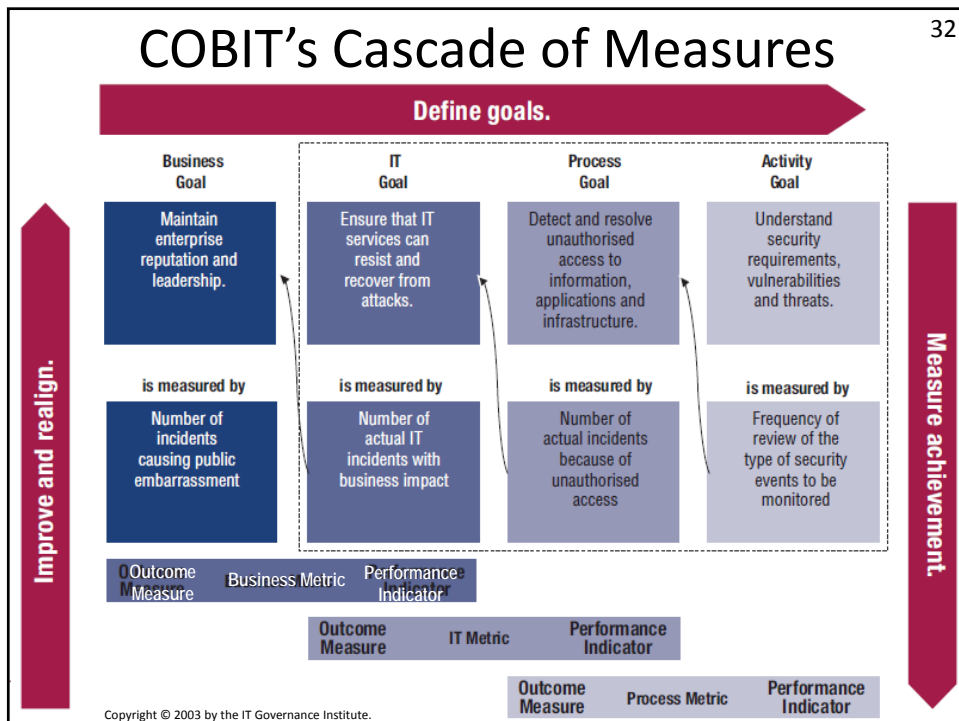


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COBIT Assessment Model

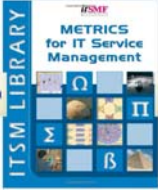
- 2 types of 'metrics'
 - Outcome measures (aka key goal indicators aka KGI)
 - Measure goal satisfaction post hoc
 - Lagging indicator of whether or not goal has been achieved.
 - Performance indicators (aka key performance indicators aka KPI)
 - Assessment of ongoing system
 - Bound to specific goals
 - Leading indicator of whether or not goal is likely to be satisfied
- Metrics are defined at 4 levels for each COBIT process
 - Activity
 - Process
 - IT
 - Business
- Cascade related to Cause and effect
 - Business Goals -> IT Goals -> Process Goals -> Activity Goals

COBIT includes some metrics

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ITIL Process Metrics




Continuous improvement is an important concept within service management

- Process metrics are a design element within every ITIL process, similar to COBIT's PC6

Individual metrics target 1 of 3 functions:

- Management
 - Reality check vis a vis service level agreements
- Process owners
 - Monitor for trends leading to problems in near or medium term
- Staff
 - Typically have some personal reward associated with achievement of targeted levels or % of improvement
 - Source of suggestions supporting the Continuous Service Improvement Program (SIP)



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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 identifies characteristics of each process at the various maturity levels

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.



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General comment on Measurement

Any measurement should have an objective

- What is being measured and why

Measurement well designed and executed is a method of control

- As such, the 'effectiveness' of a measure can be itself tested

A collection of correlated measures is generally more useful than single measures of performance

- Overcome irrelevant aspects of a single measure
 - Aggregate measures has more validity than a single measure
- Overcome extraneous error or variability associated with a single measure
 - Aggregate measure has more reliability than a single measure
 - Variance of a composite measure is less than the average variance of component measures



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**NEXT WEEK:
RESOURCE MANAGEMENT**

