Using Organizational Business Objectives to Guide a Process Improvement Program

Software Engineering Institute Carnegie Mellon University Pittsburgh, PA 15213

Steve Masters (SEI) SEPG North America March 2011

© 2011 Carnegie Mellon University



Software Engineering Institute Carnegie Mellon

Agenda

Role of business objectives in process improvement activities

Do's and don't in articulating business objectives

Examples of business objectives and corresponding appraisal objectives

Use of business objectives in CMMI V1.3



Role of Business Objectives in Process Improvement

Business objectives should be driving force in process improvement efforts by providing the necessary context to guide organizational process improvement activities.

Process improvement should be undertaken to help an organization to better meet its business objectives

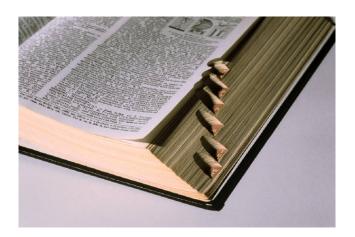
Organizational business objectives play a key role in the following process improvement activities:

- Defining process improvement goals and objectives
- Defining appraisal objectives
- Prioritizing process improvement actions
- Designing and implementing process solutions
- Deploying solutions



CMMI-DEV V1.3 Definition of Organization's Business Objectives

"Senior-management-developed objectives designed to ensure an organization's continued existence and enhance its profitability, market share, and other factors influencing the organization's success."





Software Engineering Institute Carnegie Mellon

Steve Masters Using Business Objectives to Guide a Process Improvement Program © 2011 Carnegie Mellon University

Examples of Organizational Business Objectives

CMMI-DEV includes the following example business objectives:

- Deliver products within budget and on time
- Improve product quality by a specified percent in a specified timeframe
- Improve productivity by a specified percent in a specified timeframe
- Maintain customer satisfaction ratings
- Improve time-to-market for new product or service releases by a specified percent in a specified timeframe
- Reduce deferred product functionality by a specified percent in a specified timeframe
- Reduce the rate of product recalls by a specified percent in a specified timeframe
- Reduce customer total cost of ownership by a specified percent in a specified timeframe
- Decrease the cost of maintaining legacy products by a specified percent in a specified timeframe



Characteristics of Business Objectives that Best Guide Process Improvement Work

- Pinpoint areas that are most critical to the success of the organization
- Quantitative and measurable (e.g. SMART)
- Do not promote unintended consequences





Software Engineering Institute

Carnegie Mellon

Steve Masters Using Business Objectives to Guide a Process Improvement Program © 2011 Carnegie Mellon University

Common Pitfalls in Developing and Articulating Organizational Business Objectives

- Focusing on the results from an appraisal (e.g. to be CMMI maturity level x) rather than on business performance
- Related to wishful thinking
- Not measurable
- Not directly related to or relatable to development activities







Software Engineering Institute Carnegie Mellon

Use of Organizational Business Objectives on Appraisals

Organizational business objectives are used on an appraisal in many ways, including the following:

- Developing the appraisal plan using appraisal objectives that are aligned with business objectives
- Providing context to appraisal participants to encourage their providing useful input
- Guiding the appraisal team in identifying areas to review and in making rating judgments
- Articulating the key messages to provide the appraisal sponsor



Software Engineering Institute Carnegie Mellon

Steve Masters Using Business Objectives to Guide a Process Improvement Program © 2011 Carnegie Mellon University

Examples of Business and Appraisal Objectives - 1

The following are the key business objectives that provide the context for <org's>process improvement initiative:

- 1. Overall system quality
- 2. System integrity
- 3. Schedule predictability
- 4. Ability to facilitate rapid growth

In conjunction with the business objective, the following are the key appraisal objectives

- 1. Baseline current practices against the practices of the maturity level 2 and 3 processes areas of CMMI-DEV
- 2. Understand consistency of practices across <org>
- 3. Facilitate improvements to current practices



Software Engineering Institute Ca

Carnegie Mellon

Examples of Business and Appraisal Objectives - 2

Business Objectives

- 1. Increase predictability of project deliverables.
- 2. Improve our efficiency / productivity Reduce time spent on rework and minimize defects.
- 3. Improve our capacity and capability to respond to outside changes and identify areas of greatest gain.
- 4. Establish goal-oriented measurement with a mechanism for continuous process improvement.

Appraisal Objectives

- 1. Assess current practices against the CMMI-DEV maturity level 2 practices
- 2. Identify improvement initiatives required for practice areas
- 3. Position <org> to develop a process improvement plan based upon appraisal output.
- 4. Establish a clear improvement path & progress measurement plan



Software Engineering Institute

Carnegie Mellon

CMMI V1.3 and Organizational Business Objectives - 1

Organizational business objectives take on a more visible and consistent role in CMMI V1.3.

Explicitly maintaining business objectives and managing business performance are covered in the new Organizational Performance Management (OPM) Process Area.

There are several Specific Practices (SPs) where business objectives provide the principle context for interpreting and applying the practice.

The Process Areas that contain these practices exist at all maturity levels.



CMMI V1.3 and Organizational Business Objectives - 2

The following slides provide a synopsis of the required, expected, and informative materials related to business objectives contained in CMMI-DEV V1.3.

The required and expected materials (including subpractices) will be presented before other informative material.

Only subpractices that feature business objectives will be shown.



Organizational Performance Management - 1

SG 1 The organization's business performance is managed using statistical and other quantitative techniques to understand process performance shortfalls, and to identify areas for process improvement.

SP 1.1 Maintain business objectives based on an understanding of business strategies and actual performance results.

- 1. Evaluate business objectives periodically to ensure they are aligned with business strategies.
- 2. Compare business objectives with actual process performance results to ensure they are realistic.
- 3. Prioritize business objectives based on documented criteria, such as the ability to win new business, retain existing clients, or accomplish other key business strategies.
- 4. Maintain quality and process performance objectives to address changes in business objectives.



Software Engineering Institute Carr

Organizational Performance Management - 2

SP 1.2 Analyze process performance data to determine the organization's ability to meet identified business objectives.

- 1. Periodically compare quality and process performance objectives to current process performance baselines to evaluate the ability of the organization to meet its business objectives.
- 2. Identify shortfalls where actual performance is not satisfying the business objectives.
- 3. Identify and analyze risks associated with not meeting business objectives.
- SP 1.3 Identify potential areas for improvement that could contribute to meeting business objectives.
 - 2. Document the rationale for potential improvement areas, including references to applicable business objectives and process performance data.



OPM Informative Material - 1

The purpose of Organizational Performance Management is to proactively manage the organization's performance to meet its business objectives.

OPM enables the organization to manage organizational performance by iteratively analyzing aggregated project data, identifying gaps in performance against the business objectives, and selecting and deploying improvements to close the gaps.

* * * * * * *

"Improvement" refers to all ideas that would change the organization's processes, technologies, and performance to better meet the organization's business objectives and associated quality and process performance objectives.

* * * * * * *



OPM Informative Material - 2

The improvement cycle continually optimizes organizational processes based on quality and process performance objectives. Business objectives are periodically reviewed to ensure they are current and quality and process performance objectives are updated as appropriate.

* * * * * * *

Managing business performance requires the following:

- Maintaining the organization's business objectives
- Understanding the organization's ability to meet the business
 objectives
- Continually improving processes related to achieving business objectives

The organization uses defined process performance baselines to determine if the current and projected organizational business objectives are being met. Shortfalls in process performance are identified and analyzed to determine potential areas for process improvement.



Software Engineering Institute Carr

Carnegie Mellon © 2011 Carnegie Mellon University

OPM Informative Material - 3

As the organization improves its process performance or as business strategies change, new business objectives are identified and associated quality and process performance objectives are derived.

Organizational performance data, characterized by process performance baselines, are used to evaluate whether business objectives are realistic and aligned with business strategies. After business objectives have been revised and prioritized by senior management, quality and process performance objectives may need to be created or maintained and recommunicated.

Comparing process performance baselines to quality and process performance objectives helps the organization to determine its ability to meet business objectives.

* * * * * * *



Software Engineering Institute

Carnegie Mellon

Steve Masters Using Business Objectives to Guide a Process Improvement Program © 2011 Carnegie Mellon University

Organizational Process Performance

SP 1.1 Establish and maintain the organization's quantitative objectives for quality and process performance which are traceable to business objectives.

1. Review the organization's business objectives related to quality and process performance.

SP 1.2 Select processes or subprocesses in the organization's set of standard processes to be included in the organization's process performance analyses and maintain traceability to business objectives.

3. Establish and maintain traceability between the selected subprocesses, quality and process performance objectives, and business objectives.



Software Engineering Institute C

Carnegie Mellon

OPP Informative Material

The Organizational Process Performance process area involves the following activities:

• Establishing organizational quantitative quality and process performance objectives based on business objectives

* * * * * * *

When establishing quality and process performance objectives, consider the following:

• Traceability to the organization's business objectives

Selection of processes or subprocesses is based on the quality and process performance objectives of the organization, which are derived from business objectives.

* * * * * * *



Quantitative Project Management

SP 1.1 Establish and maintain the project's quality and process performance objectives.

1. Review the organization's objectives for quality and process performance.

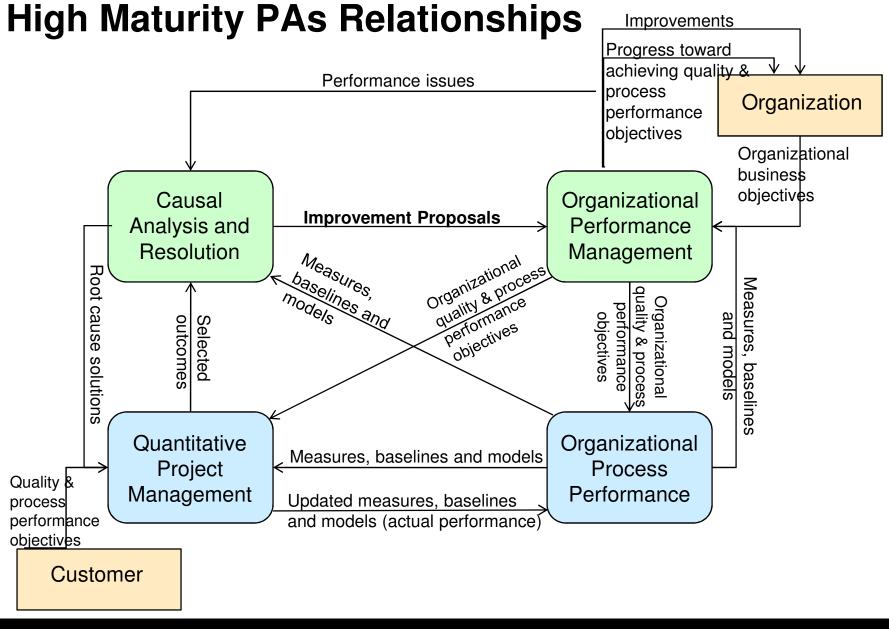
This review ensures that project members understand the broader business context in which the project operates. The project's objectives for quality and process performance are developed in the context of these overarching organizational objectives.



Software Engineering Institute

Carnegie Mellon

Steve Masters Using Business Objectives to Guide a Process Improvement Program © 2011 Carnegie Mellon University



Carnegie Mellon

Software Engineering Institute

Steve Masters

Using Business Objectives to Guide a Process Improvement Program © 2011 Carnegie Mellon University

Organizational Process Focus

SP 1.1 Establish and maintain the description of process needs and objectives for the organization.

1. Identify policies, standards, and business objectives that are applicable to the organization's processes.

* * * * * * *

Process Improvement occurs in the context of the organization's needs and is used to address the organization's objectives.

* * * * * * *

The organization's processes operate in a business context that should be understood. The organization's business objectives, needs, and constraints determine the needs and objectives for the organization's processes.



Organizational Training

SP 1.1 Establish and maintain strategic training needs of the organization.

1. Analyze the organization's strategic business objectives and process improvement plan to identify potential training needs.

Organizational Training addresses training provided to support the organization's strategic business objectives.

* * * * * * *

Strategic training needs address long-term objectives to build a capability by filling significant knowledge gaps, introducing new technologies, or implementing major changes in behavior.



Measurement and Analysis

SP 1.1 Establish and maintain measurement objectives derived from identified information needs and objectives.

5. Maintain traceability of measurement objectives to identified information needs and objectives.

* * * * * * *

The Measurement and Analysis process area involves the following activities:

 Specifying objectives of measurement and analysis so that they are aligned with identified information needs and project, organizational, or business objectives.

* * * * * * *

Measurement objectives are derived from information needs that come from project, organizational, business objectives.

The primary reason for conducting measurement and analysis is to address identified information needs derived from project, organizational, and business objectives.

* * * * * * *



Summary

Business objectives should be driving force in process improvement efforts by providing the necessary context to guide organizational process improvement activities.

To best guide process improvement work, organizational business objectives should be quantitative and targeted.

Organizational business objectives take on a more visible and consistent role in CMMI V1.3.



Carnegie Mellon

Contact Information

Steve Masters

Phone: +1 412-268-9085 Email: <u>smm@sei.cmu.edu</u>

U.S. mail: Software Engineering Institute Customer Relations 4500 Fifth Avenue Pittsburgh, PA 15213-2612 USA

World Wide Web:

www.sei.cmu.edu/contact.html

Customer Relations

Email: <u>customer-</u> relations@sei.cmu.edu

Telephone:	+1 412-268-5800
SEI Phone:	+1 412-268-5800
SEI Fax:	+1 412-268-6257

Software Engineering Institute

Carnegie Mellon

Steve Masters Using Business Objectives to Guide a Process Improvement Program © 2011 Carnegie Mellon University