

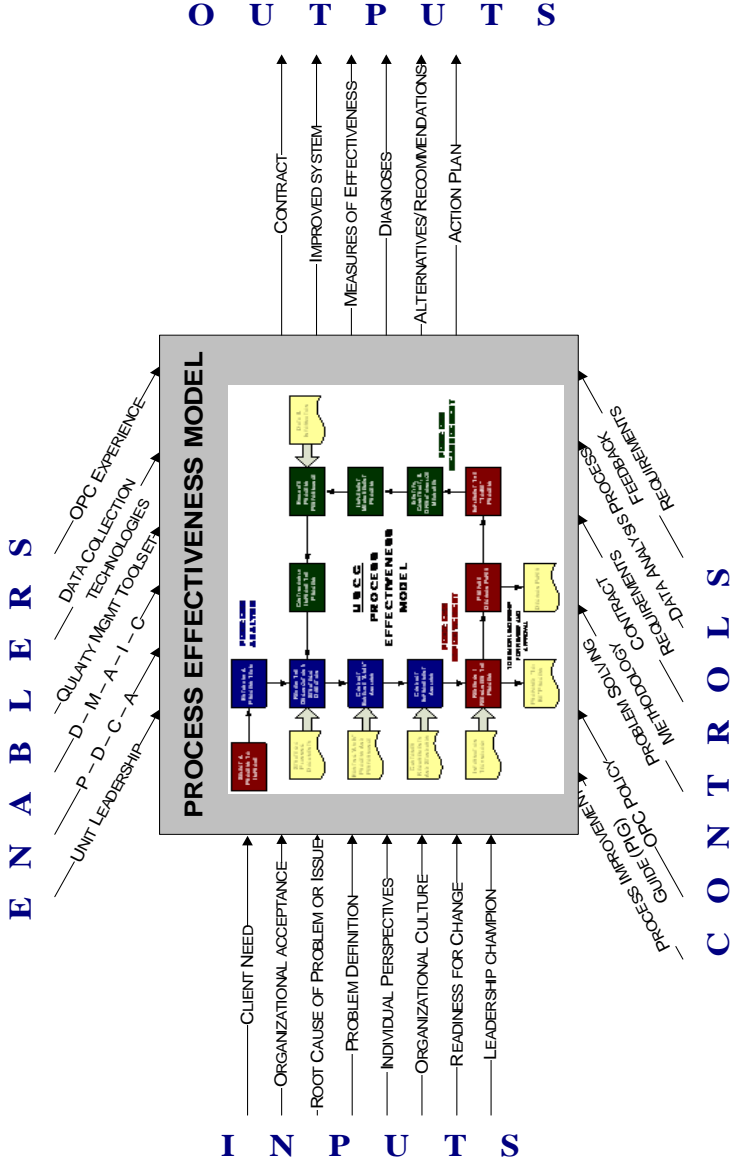
DEPARTMENT OF HOMELAND SECURITY
UNITED STATES COAST GUARD

Semper **P**aratus



**Process
Measurement**

PROCESS MEASUREMENT CONTEXT DIAGRAM



PROCESS MEASUREMENT CHECKLIST

1.0 PREPARE TO MEASURE

- Establish a Process measurement Team
- Review Organization Strategic Direction
- Review Process Analysis

2.0 IDENTIFY, CONSTRUCT, AND OPERATIONALIZE MEASURES

- Set Indicators
- Identify Reference Points and Standards
- Operationalize Indicators
- Construct Logs and Collect and Log Data
- Construct Portrayal Mechanisms

3.0 IMPLEMENT THE MEASUREMENT PROCESS

- Compare Reference Points to Indicators
- Test and Finalize Indicators
- Finalize Improvement Goals and Targets
- Deploy The Measurement Process

4.0 EVALUATE PERFORMANCE AND LINK TO ACTION

- Collect and Log Data
- Compare Data to Targets and Study
- Review Performance and Act
- Report to Senior Leadership
- Link Action to Planning/Maintain Documentation

PROCESS MEASUREMENT

DESCRIPTION: The process by which organizations establish and create process measures, collect data, and evaluate process performance.

USE THIS TOOL: When you want 1) physical evidence of workflow/activity accomplishment, 2) to know how a process is performing, and 3) to establish performance – standards gaps.

DEGREE OF DIFFICULTY: *Practitioner to Master Level.*

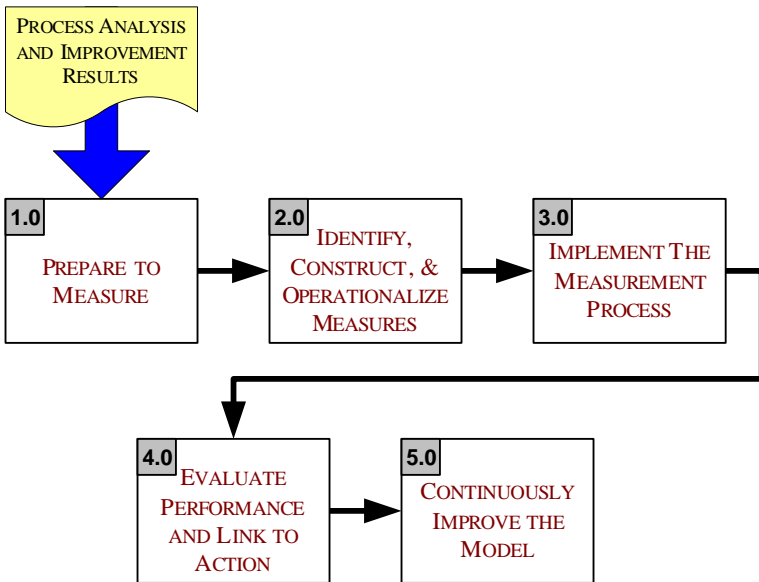
INTRODUCTION

This booklet provides guidance on process measurement – determining key measurement points, constructing appropriate metrics, collecting and comparing data, and using the resulting information to make better decisions. Process measurement is a process itself; in that it is not a single intervention, but a series of activities that provide a steady flow of data and information. Organizations wanting to improve must be able to measure process performance. Below is a list of the primary steps.

- Step 1.0** Prepare to Measure. Briefly covers establishing a process measurement team and preparing them for their assigned task.
- Step 2.0** Identify, Construct, and Operationalize Measures. Provides guidance on deciding what, when, and how to measure; constructing effective measures, and implementation.
- Step 3.0** Implement the Measurement Process. Measurement is a process that, once developed, must be implemented and deployed throughout the organization. This step explains how.
- Step 4.0** Evaluate Performance and Link to Action. During this step the organization begins collecting data, conveying and portraying it, and using the resulting information to make decisions.

Note: This booklet is the third part of a three part series on process effectiveness. The three booklets are designed to be used as standalone interventions, or in sequence to improve overall performance. It is important to note, however, that the three booklets do overlap to some degree, and that certain cross-booklet steps must be performed no matter which activity is undertaken.

PROCESS STEPS



Process Measurement Model

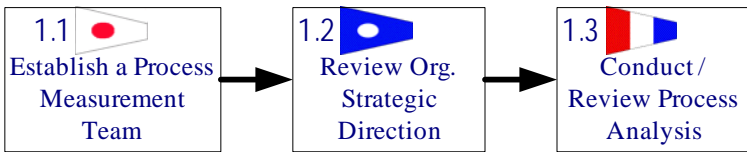
1.0 PREPARE TO MEASURE

When focusing on process measurement as a standalone activity, a process team (in this case a process measurement team) must still be established, organization strategic direction must still be reviewed, and the target process must still be analyzed (all of which are covered in detail in Field Guide, Booklet 9, Process Analysis). At the same time, measuring process performance absent an improvement intent, doesn't make sense. Why would an organization measure performance unless they wanted to improve? Consequently, teams preparing to measure, having analyzed the process, should consider process performance and improvement (covered in detail in Field Guide, Booklet 10, Process Improvement) prior to developing measures. With this in mind, the purpose of this step is to address these simultaneous and/or preliminary activities in the context of preparing to measure.

Note: Additional guidance on establishing teams, reviewing strategic direction, and analyzing processes is provided in Field Guide, Booklet 9,

Process Analysis. OPCs undertaking a process measurement initiative should review this guidance before proceeding. Additionally, if the measurement team is performing their duties as part of a continuing process improvement effort, they must also make themselves very familiar with the results, objectives, and intentions of these initiatives and teams. OPC's should refer to Field Guide, Booklet 10, Process Improvement in conducting these review activities.

DETAILED CHECKLIST		TOOLS
1.1	Establish a Process Measurement Team	Facilitation Skills
1.2	Review Organization Strategic Direction	Strategic Planning
1.3	Conduct/Review Process Analysis	Process Analysis



Prepare to Measure

1.1

ESTABLISH A PROCESS MEASUREMENT TEAM

As with any process-related activity, the first step in process measurement is to establish a process team (in this case, a process measurement team), if one has not already been established. Like process analysis and improvement teams, the make-up of the process measurement team is extremely important. Care must be taken to ensure the team members possess a propensity toward logic or management by fact, and have, at the least been previously introduced to measurement. Including team members that have an in-depth knowledge and understanding of measurement would be, of course, highly beneficial!



Not Detailed Here!
Refer to the:
*Process
Analysis
Booklet*

● **Management by Fact**

The following is an excerpt from the 2005 Baldrige National Quality Program, Criteria for Performance Excellence Booklet.

Organizations depend on the measurement and analysis of performance. Such measurements should derive from business needs and strategy, and they should provide critical data and information about key processes, outputs, and results. Many types of data and information are needed for performance management. Performance measurement should include customer, product, and service performance; comparisons of operational, market, and competitive performance; supplier, employee, cost, and financial performance; and corporate governance and compliance. Data should be segmented by, for example, markets, product lines, and employee groups to facilitate analysis.

Analysis refers to extracting larger meaning from data and information to support evaluation, decision making, and improvement. Analysis entails using data to determine trends, projections, and cause and effect that might not otherwise be evident. Analysis supports a variety of purposes, such as planning, reviewing your overall performance, improving operations, change management, and comparing your performance with competitors' or with "best practices" benchmarks.

A major consideration in performance improvement and change management involves the selection and use of performance measures or indicators. The measures or indicators you select should best represent the factors that lead to improved customer, operational, financial, and ethical performance. A comprehensive set of measures or indicators tied to customer and organizational performance requirements represents a clear basis for aligning all processes with your organization's goals. Through the analysis of data from your tracking processes, your measures or indicators themselves may be evaluated and changed to better support your goals..

1.2



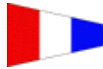
REVIEW ORGANIZATION STRATEGIC DIRECTION



Not Detailed Here!
Refer to the:
*Action Planning
and Process
Analysis
Booklets*

Once a measurement team has been formed, trained, and briefed, their first task is to review the organization's strategic direction. It is absolutely imperative that the team stay focused on this strategic guidance as they perform their task. The organization's strategic direction provides very clear guidance on what to measure, and how often. But, more importantly, why something should or needs to be measured (that is, why it is important to the organization and its success).

1.3



CONDUCT/REVIEW PROCESS ANALYSIS



Not Detailed Here!
Refer to the:
*Process
Analysis
Booklet*

The next thing the team should do, before doing any measurement-related development and design work, is review the results of any previously conducted As-Is and improvement analysis. And, if no previous analysis has been conducted, then the first thing they need to do is conduct this analysis (see note, below).

It may not be necessary to conduct the analysis quite to the degree and extent necessary were the team preparing to improve or reengineer the process, but still, a goodly amount of care and attention to detail must be achieved. Obviously, a lot depends on the complexity and criticality of the process, the degree of familiarity the measurement team has with the process, and the extent or scope of the measurement initiative.

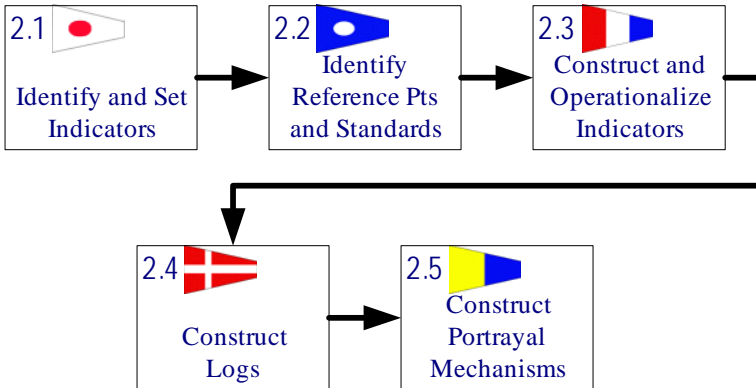
2.0

IDENTIFY, CONSTRUCT & OPERATIONALIZE MEASURES

Designing, developing, and implementing a process measurement system (or measurement process) is not unlike designing, developing, and implementing an organization-level measurement system (refer to Field Guide, Booklet 6, Organizational Measurement). The team must follow virtually all the same steps and deal with all the same issues and challenges, but, process measurement is much less complex and difficult, and the correlations between performance and customer requirements or standards are much clearer. The biggest difference between the two being, 1) the unit of focus – obviously a process is a much smaller unit of focus, and 2) the difficulty of identifying and constructing measures to gauge performance.

Process measures tend to be much more quantitative and specific, and much less qualitative. This is good news, as it makes your job as an OPC much easier, at least within the context of process measurement. A detailed task checklist and associated tools are provided below.

DETAILED CHECKLIST		TOOLS
2.1	Identify and Set Indicators <ul style="list-style-type: none"> • Understand What is Important to Measure • Identify Key Decisions Made by Process Managers • Clarify Information Needed to Make These Decisions • List the Data Needed to Create the Information • Identify Indicators to Obtain the Data • Set Performance Indicators and Label on the Flowchart 	Facilitation Skills Matrix Diagram Affinity Diagram Tree Diagram Flowcharting
2.2	Identify Reference Points and Standards <ul style="list-style-type: none"> • Find Out What Stakeholders Want, Need, and Desire • Negotiate Standards with Stakeholders 	Communications Principles Structured Interview
2.3	Construct and Operationalize Indicators	
2.4	Construct Logs <ul style="list-style-type: none"> • Design Logs to Capture and Track Indicator Data • Log Data 	
2.5	Construct Portrayal Mechanisms <ul style="list-style-type: none"> • Decide How to Convey Info., to Who, and How Often • Decide How to Portray the Information • Construct Portrayal Mechanisms – Charts, Etc. 	



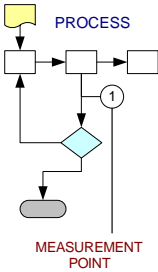
Identify, Construct & Operationalize Measures

2.1



IDENTIFY AND SET INDICATORS

The first step, once the process team has reviewed the organization's strategic direction and thoroughly analyzed the target process, is to identify performance indicators. Performance indicators are data points. A data point is made up from fact and meaning. Comparing an indicator to a reference point (defined below) makes information; information results in knowledge; and without knowledge manager's are not making decisions, they're guessing. Performance indicators convey the **VOICE OF THE PROCESS**. The voice of the process is the process telling the organization (or customer) how capable it is and at what level it is performing.



Refer to the Process Effectiveness Toolset (CD):

Functional Matrix Instruction and Template

– Use a matrix to ensure process indicators measure all aspects of process performance

Identifying indicators is similar to deciding what to measure at the organizational level, but simpler, as the team has a very discrete and detailed flowchart sitting in front of them to help them see and understand what and where to measure. The steps necessary to set indicators are:

- Scrutinize workflows and decide the important things to measure;
- Identify decisions managers make about the process and its stakeholders (i.e., determine what to monitor and track to ensure standards are being met);
- Clarify information needed to make those decisions;
- Identify data needed to create the information;
- Identify indicators needed to collect the data;
- Label indicators on workflow charts (use a circle).

2.2



IDENTIFY REFERENCE POINTS AND STANDARDS

Setting indicators is the first step in constructing measures, but it provides only half the equation. In order for indicators to be useful, the team must have something to compare them against – reference points and standards. Reference points (like performance indicators) are also data points. A reference point is the basis for making

Reference Points are customer requirements expressed numerically

Standards are reference points leaders have agreed to meet



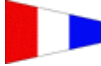
Refer to the Assessments Toolset (CD):

Structured Interview
Diagnostic Contract Sample

information from a performance indicator. The team determines reference points by learning about stakeholders and their needs. They learn about stakeholders from surveys and interviews. Reference points convey the **VOICE OF THE CUSTOMER**. The voice of the customer is the customer telling the organization what they want, need, and expect. To set indicators teams must:

- Surveys or interview stakeholders to determine what they want and to learn their needs and expectations;
- Work with stakeholders to improve products and services and negotiate standards to get that result.

2.3



CONSTRUCT AND OPERATIONALIZE INDICATORS



Refer to the **Organizational Measurement Booklet** for additional guidance on operationalizing measures

Operationalizing a performance indicator means putting it into a form with which the team can do business. This means taking the indicator created on paper and putting it into practice. It is one thing to say, we will measure such and such, but to actually do that is another thing. Data must be collected and logged, charts must be created and maintained, and the information must be conveyed to decision-makers. All of these aspects must be figured out, before the measure can truly be considered operational. The detailed steps necessary to do this are:

Operational Definition – A definition the team can do business with

- Develop an unambiguous description of the indicator and precise definitions of key terms;
- Determine the source and how often to collect data;
- Develop any equations needed to analyze the data;
- Decide how to convert the data to information and how it will be portrayed (e.g., graphically as a chart);
- Identify the accountable indicator owner;
- Identify desired outcomes expressed in terms of a positive or negative trend;
- Identify/establish a link between the indicator and the organization's strategic direction;
- Teach decision makers how to use the indicators.

2.4

CONSTRUCT LOGS



No need to get fancy, a log book is fine and sometimes most effective

Measuring process performance is different than measuring organizational performance in two important ways – the rate at which data and information change, and how often it makes sense to adjust the process. Organizational data change slowly. It may take up to a year to note an out of control trend requiring action. Process measures can change a significant amount weekly. Therefore, it is important to continuously collect data so that managers always have up to date information. Data is captured in log books that can take on any form and whose only requirement is that they meet the needs of the user and be appropriate for the indicator.

Measurement Notes

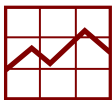
Indicators and reference points are worthless unless you can put them into practice by measuring, analyzing, and interpreting the data for conversion into information. The starting point is operationalizing them (i.e., putting them into a form with which the team can do business).

Teams should continually update their understanding of the product and service expectations stakeholders have, and how those expectations become, or became, standards.

Logs help the team to collect (keep, organize, and display) the data they will eventually convert to information – they are a tool. They lend consistency and constancy to the collection process.

2.5

CONSTRUCT PORTRAYAL MECHANISMS



Information portrayal can take on many forms. Much depends on who needs access and how often. In the case of a single manager or decision maker, a simple emailed chart may suffice. In other cases where whole work centers or departments need access, visibility boards may be more appropriate. This must be discussed with decision makers and a joint decision made. Care should be taken not to get too fancy, as the important thing is to effectively portray the information. Sometimes simple is best!

There are many portrayal options:

- *Line Chart*
- *Pie Chart*
- *Pareto Chart*
- *Run Chart*
- *Histogram*
- *Table*
- *List*

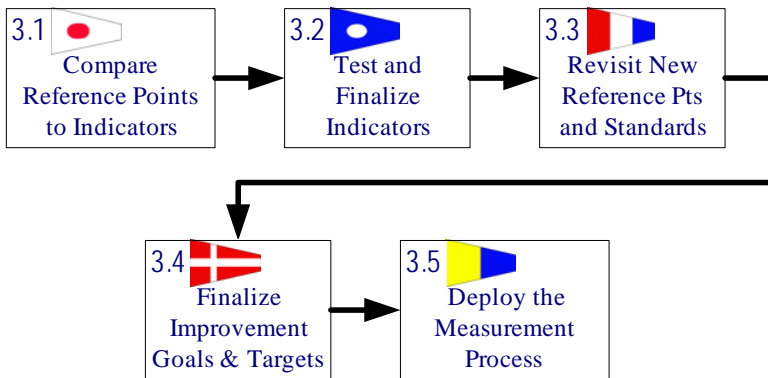
Note: the use of color and graphics can significantly add to readability, quick interpretation, and understandability. One such example is the use of red, yellow, and green circles, like stoplights, with red meaning danger and requiring immediate attention, yellow meaning caution, and green meaning all systems are go. There are many creative ways to portray data. Teams must decide:

- How to portray the data (e.g., as a graph or chart);
- What the chart axis will be (e.g., quantity and time);
- How to aggregate, plot, or list the data;
- How to color code and add impact to information;
- What medium to convey the information on.

3.0 IMPLEMENT THE MEASUREMENT PROCESS

This is the point in the process where the team actually starts using the indicators set/identified, and where they actually start seeing the rewards of their efforts. Up to now the team has worked to hear the voice of the process and the voice of the customer, and now it is time to compare the two to make information and see how the process is performing (compared to how customers want it to perform). This is what measurement is all about! A detailed task checklist and associated tools are provided below.

D E T A I L E D C H E C K L I S T		T O O L S
3.1	Compare Reference Points to Indicators <ul style="list-style-type: none"> • Compare Standards to Indicators • Establish Performance Gaps • Determine the Feasibility of Closing Gaps • Establish Initial Improvement Goals and Targets 	Facilitation Skills
3.2	Test and Finalize Indicators <ul style="list-style-type: none"> • Assess Indicator Usefulness and Validity • Establish New Indicators as Appropriate 	
3.3	Revisit New Reference Points and Standards	
3.4	Finalize Improvement Goals and Targets	
3.5	Deploy the Measurement Process <ul style="list-style-type: none"> • Provide Training to Process Users 	



Implement the Measurement Process

3.1

COMPARE REFERENCE PTS. TO INDICATORS

Note: there are no techniques, methods, or principles here; just logical thinking, and detailed work.

– Although a background in mathematics and statistics helps!

The team compares performance indicators (voice of the process) to reference points (voice of the customer) to make information and establish performance gaps. Closing performance gaps constitutes improved performance. Generally speaking, there are two ways to close performance gaps, through continuous or gradual improvement of the process, or through process reengineering. Which path the team takes depends on the size and criticality of the performance gap they working with. When the performance gap is wide and it is important to close it quickly, reengineering is definitely the path of choice – a radical change in the process is necessary, requiring outside the box thinking and an a drastic change in process structure. Short of this, and once this has been done, continual improvements are the order of the day.

AN INABILITY TO CLOSE THIS GAP

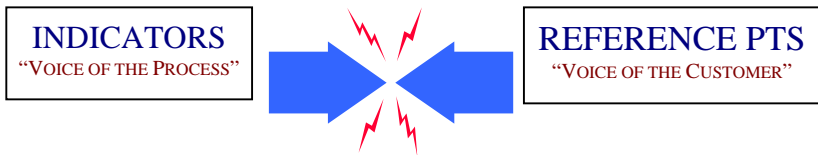
An inability to close this gap means one of two things. First, that this may not be a service or product the organization should be providing its customer – consider outsourcing to another organization that specializes in this area. And second, that the customer’s expectations are unrealistic, in which case the team need to go back to the

If the organization *can't meet the standard* – they may have to outsource to an organization that can!

– Focus on what the organization does best!

identifying reference points and standards step in this process to renegotiate with the customer. One way to determine which scenario is the case is to look and see what competitors are doing – if they are able to meet the customer's needs, the organization must also! – either reengineer again, or as recommended above – outsource.

Once identified, gaps are then used to establish improvement goals and targets. Below is a visual depiction of this comparison.



Construction Tips

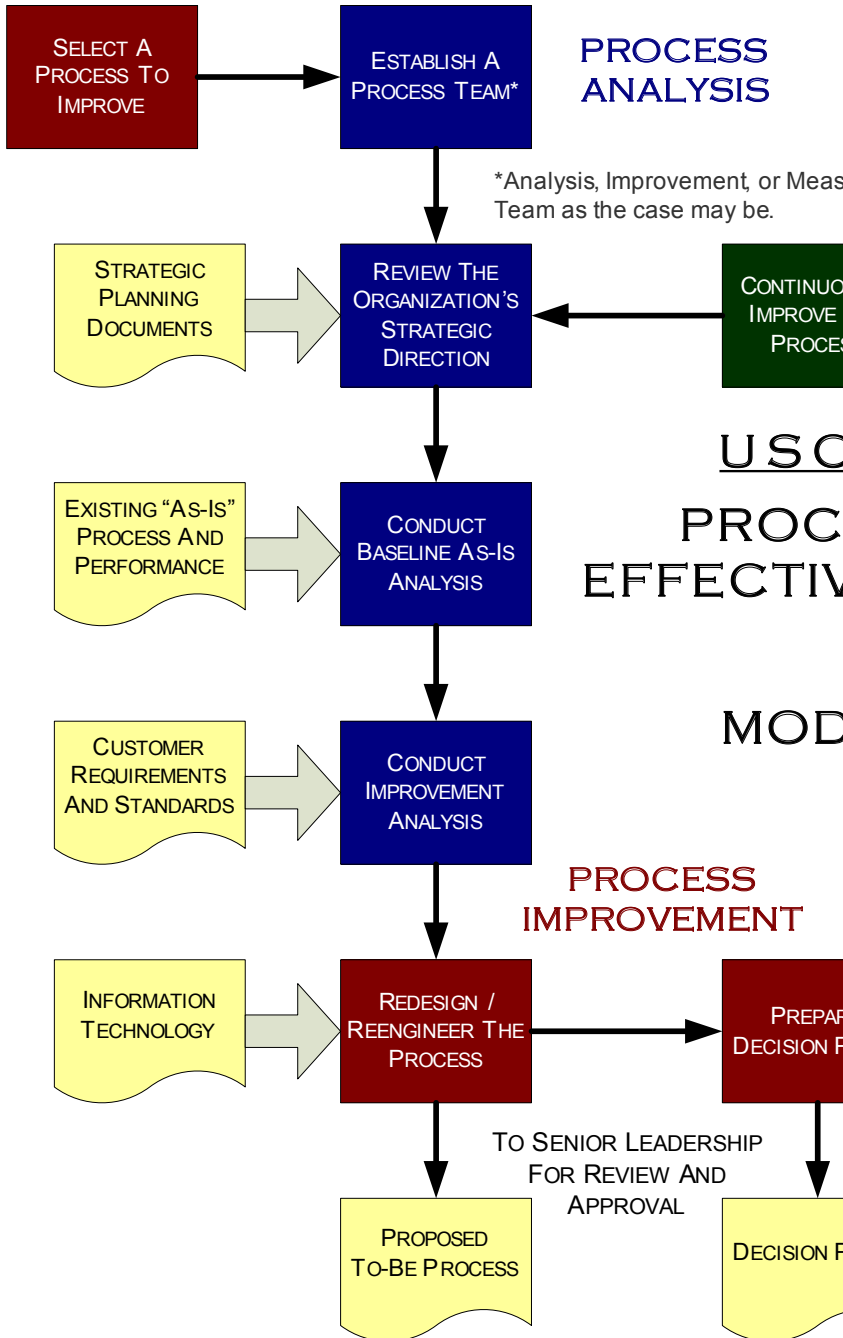
Productivity indicators tell the organization what they got out of an activity in relation to what they put into it.

Quality indicators tell the organization how well process outputs conform to specifications and standards (quality = conformance to standards).

Effectiveness indicators tell the organization how well an activity accomplishes its purpose (effectiveness = fitness for purpose).

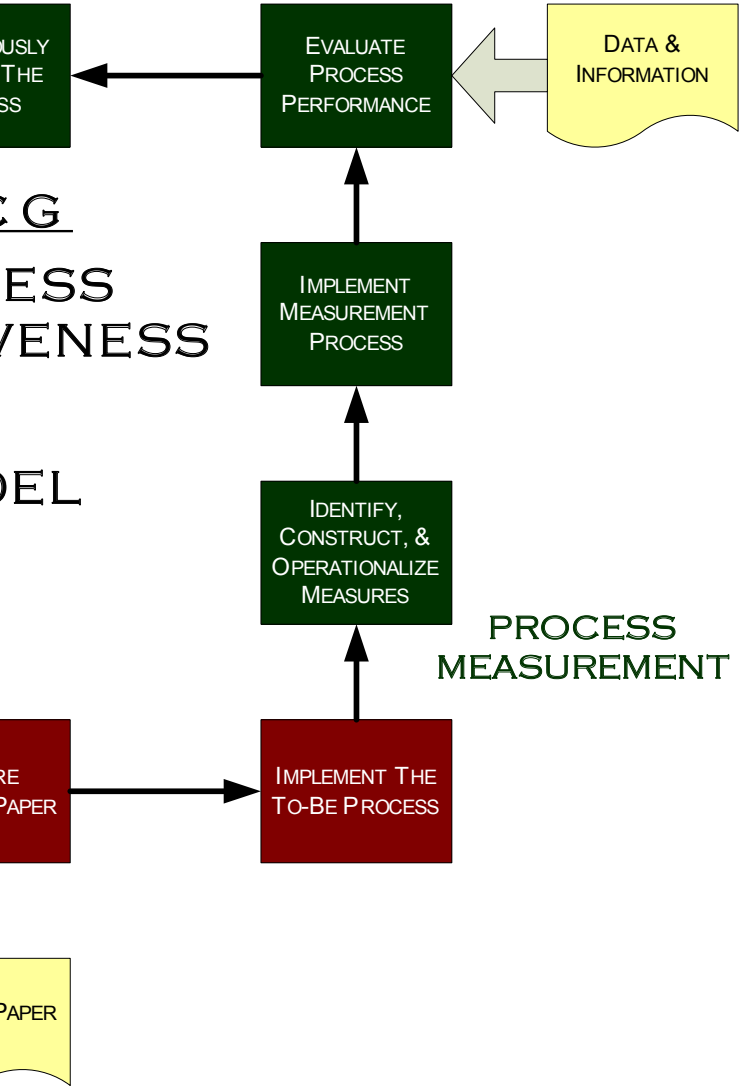
Efficiency indicators compare what resources (time and cost) the organization expects to consume and what was actually consumed.

Backlog indicators are a combination of quality and productivity – what percentage of work was completed, or not completed, on time.



OPC PROCESS EFFECTIVENESS MODEL

Measurement



3.2



TEST AND FINALIZE INDICATORS

What gets measured, gets done!

Be careful that the organization is not measuring “A” while hoping for “B”



Refer to the CG PIG:
Facilitation Skills

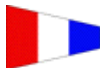
Don't throw good money after bad – ***if something isn't working, get rid of it!***

It is always a good idea to pilot test a new process or system before deploying it throughout the organization. Pilot testing, or partial roll-out, gives the measurement team a chance to see their measures in action and assess their validity (a valid indicator measures what it was designed to measure). It is easy to construct a measurement process and performance indicators on paper, and quite another to actually implement and have it work. Adjustments will be necessary as the team assess the organization's ability to actually collect the data, convey it to decision makers, and portray it in such a way that it is useful. Oftentimes difficulties will present themselves, users will push back against this added workload, and management will decide that some information just isn't worth the trouble.

There will also be times when managers realize that nothing is going to be done with the collected data or created information – there is just no interest, or the mechanisms necessary to study and act on the information just are not in place, and won't be anytime soon. And, finally, there will be occasions when managers realize that the measure constructed just isn't correct, that the team made a mistake and forgot to take something into account. Or, that they are measuring “A” when they thought they were measuring “B.”

All these scenarios can cause the measurement team to make adjustments prior to deploying the new measures and process. Testing and validating the indicators created and the process for collecting, conveying, and portraying data is part of the measurement team's duties – a very important, usually difficult, and often time consuming part!

3.3



REVISIT REFERENCE POINTS AND STANDARDS

Once indicators are finalized, the team must make sure that previously established reference points and standards are valid and still aligned with selected indicators (given

any changes made, above). Of course, with standards it is not a good idea to go back to customers and suggest to them that a standard previously negotiated has been rethought, and that the organization has decided it cannot meet it. Although it is undoubtedly better to do this and *eat crow* as they say, than to push forward and be held accountable for meeting an unrealistic standard.

As above, the team must try out the selected reference points and negotiated standard to see if they hold up in an operational setting. If they don't, they must be changed!

3.4

Goals - Broader than targets, they should be stated as a trend



Refer to the **Strategic Planning Booklet** for more guidance goal setting

FINALIZE IMPROVEMENT GOALS & TARGETS

Finally, once reference points and standards have been revisited, tested, evaluated, and agreed upon, the measurement team must finalize their process improvement goals and targets, which, of course, are based on the indicators they selected and the standards they negotiated. This is a very important step as the entire premise of the newly created measurement system is based on achieving these goals and targets. If the goals and targets are not what they should be, or impossible to achieve, then it may bring into question the validity and usefulness of the entire measurement process. Process managers and users should have to stretch to achieve improvement goals and targets, but they should not be set so far out as to be unrealistic.

3.5

DEPLOY THE MEASUREMENT PROCESS

Assuming all of the above steps have been successfully completed, the team is now ready to deploy its measurement process, or to put it into full operation. The design and development work of the team is coming to a conclusion and it is time to start handing the reigns over to the process users. This should be a fairly easy step, representing the culmination of a lot of hard work. Of course, if previous steps have been skipped or done half-heartedly, well, then, this step will be a real bear. This is not the time when the team wants to find out that there are problems.

PROVIDE TRAINING TO PROCESS USERS

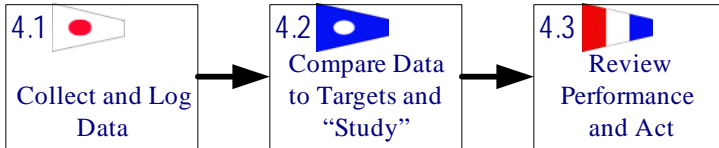
An important aspect of deploying the measurement process is providing training – formal classroom and on-the-job – to process users and decision makers. This is as important for the users that will be collecting and logging data, and conveying and portraying the information, as it is for those that will be evaluating (studying) and making decisions (acting) on the information. Many organizations will be new to management by fact and conducting study-act meetings will not come naturally to them. In these cases, significant training and hand-holding will be necessary.

4.0 EVALUATE PERFORMANCE AND LINK TO ACTION

At this point the measurement team may be thinking that its job is complete and that now the system will more-or-less operate itself. Unfortunately there is still much work to do as far as implementation goes. Once a measurement system or process has been designed and developed, tested and deployed, making sure that it becomes an integral part of how the organization does business is not as easy as it may seem. In fact, it is not unheard of or unusual for a newly deployed measurement system to become irrelevant at this point. If quality data is not collected and effectively conveyed and portrayed, and if decision makers fail to study and act on it, the system will quickly fall by the wayside. Generally speaking, however, the measurement team is playing more of an oversight role at this point. Although, their participation will quickly pick up again as the process is started again and another round of review, design, and development commences.

That said, the purpose of this step is to evaluate performance using the newly constructed and operationalized performance indicators. Senior leaders, as well as the process development team, want to know how the process is performing – whether actual outcomes are meeting desired outcomes, and whether the process is achieving its improvement goals. This is particularly true if the process has been recently reengineered and/or significantly improved. During this step the team collects and logs performance indicator data, compares it to performance targets, and uses the resulting information to solve problems and make decisions/plans for further process improvement. A detailed task checklist and associated tools are provided below.

DETAILED CHECKLIST		TOOLS
4.1	Collect and Log Data	
4.2	Compare Data to Targets and Study <ul style="list-style-type: none"> • Solve Problems 	Cause and Effect Diag.
4.3	Review Performance and Act <ul style="list-style-type: none"> • Report to Senior leaders • Link Action to Planning • Maintain Documentation 	Plan-Do-Study-Act Communication Principles



Evaluate Performance and Link to Action

4.1

COLLECT AND LOG DATA

Although this activity may seem fairly straight forward and simple, it is non-the-less very important, and often not as easy as the team thinks it will be. The biggest problem and obstacle here being – collecting and logging data takes disciplined and organized work. And, the data is not always as easy to obtain as the team would like it to be. For one thing, people often resist providing data if they believe it reflects poorly on their performance, and too, the data can often be vague and difficult to derive. For example, in logging customer complaints, there may be some confusion as to what constitutes a complaint, or in logging failures there will be differences of opinion in when something is too insignificant to include. And, finally, as mentioned above, it is very easy to get caught up in the day-to-day activities of just doing business – that is, getting the job done – that users either forget, or purposely put measurement aside in lieu of more important activities. They don't understand, yet, that measurement is now an important and vital aspect of their job!

4.2



Is the organization on target?

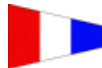


Refer to the CG PIG: **Cause and Effect Diagram**

COMPARE DATA TO TARGETS AND STUDY

Once collected, indicator data is then compared against reference points and standards to establish performance gaps. Gaps are then compared against improvement goals and targets to assess progress and accomplishment. These comparisons/evaluations are critical to making improvement-related decisions. If the process is not meeting stakeholder expectations (i.e., there is a large gap between the voice of the process and the voice of the customer), performance information can be evaluated to determine why. This constitutes the study portion of the Plan-Do-Study-Act (**P-D-S-A**) learning cycle (depicted, below, and described in greater detail on the accompanying Tools CD).

4.3



Refer to the Process Effectiveness Toolset (CD): **Plan-Do-Study-Act Instruction**

REVIEW PERFORMANCE AND ACT

Once studied, the information evaluated must be acted upon! Decisions must be made as to the results and implications of the data collected, information derived, and analysis performed. What will the process managers do to reverse negative trends, address performance gaps resistant to closure, and further deploy improvement strategies that have proven effective. This aspect of process measurement must be performed regularly, and in a disciplined and formal manner – it cannot be left to chance!

If the team doesn't complete the cycle, they have wasted their time – it is key to continuous improvement!

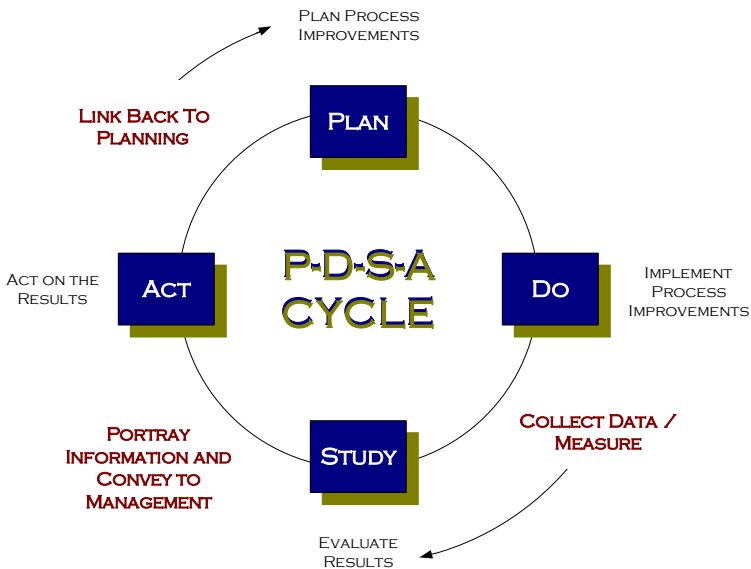
Planning and Doing will only take the team so far!

LINK ACTION TO PLANNING

This step links back to the beginning of the Process Effectiveness Model indicating the cyclic nature of the methodology. The team analyzes the process, plans improvements and implements them, studies (i.e., evaluates) their impact on the organization, and acts on the results by making another round of decisions/plans for process improvement. This completes the plan-do-study-act (**P-D-S-A**) learning cycle (refer to the diagram, below).

MAINTAIN DOCUMENTATION

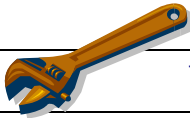
After having done all this work to design, develop, test, and implement process measurement system, the team needs to ensure the systems development history – the steps taken, obstacles overcome, analysis performed, decisions made, and lessons learned – is properly maintained and readily accessible for future teams and managers to benefit from. It is not unusual for leaders to look back years, or even months, after having made a decision and wonder, why did we do that. Once the measurement team is disbanded and they go back to their regular jobs, this corporate knowledge can be easily lost.



Plan-Do-Study-Act Cycle

A Note On Tampering

Making changes to a process too often, before definitive trends are established and the data show it to be out of control is termed tampering and in many ways can be more damaging and less productive than not measuring at all. Measurement masters must be intimately familiar with variation theory and statistical process control.



USEFUL TOOLS

The following tools - templates, forms, worksheets, calculators, slide decks, facilitator notes, etc. are included in the following references or on the accompanying compact disc ☺.

Tool	Reference
Facilitation Skills	CG PIG
Interrelationship Diagram	Memory Jogger Plus/II
Matrix Diagram	CG PIG
Plan-Do-Study-Act Instruction	☺ Process Effectiveness Toolset
SIPOC Chart (<i>Work as a Process</i>)	CG PIG
Cause and Effect Diagram	Memory Jogger Plus/II
Structured Interview Diagnostic Contract Sample	☺ Assessments Toolset
Team Charter Example, Questionnaire, and Template	☺ Stakeholder Effectiveness Toolset
Pareto Chart	Memory Jogger Plus/II



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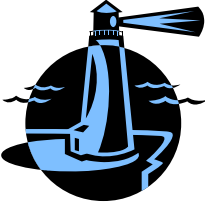
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TERMS AND DEFINITIONS



To achieve better process performance and reduce variability, the organization should consider approaches such as Lean Enterprise Systems, Six Sigma, or use of ISO 9000 standards.

Control: A process operating within a specific or limited range of performance or set of boundaries on a chart, is said to be in control. A process operating with excessive variation is out of control.

Convey: To convey measurement data or information means to transmit, transfer, or in some way get it to decision makers. Data and information can be conveyed by hand via a log book, verbally via a presentation, electronically via email or a web posting, or visually by way of a poster or board.

Data: Data are facts, numbers, and figures. They contain no meaning and provide no information when not compared to other data.

Indicator Owner: The owner of an indicator (see Process Owner, below). The indicator owner is responsible for setting the indicator, collecting data, logging, conveying, and portraying the resulting information.

Information: Data that is compared over time and in relation to other data conveys meaning or information. Information can be used for decision making whereas data cannot.

Improvement Goal: Broader than an improvement target, goals should be stated in terms of a trend (e.g., to reduce customer complaints).

Improvement Target: A specific quantitative level of performance being sought – to reduce the number of customer complaints from ten per year to three per year – with three being the target.

Fitness for Purpose: Also referred to as effectiveness. A measure of whether a product or service meets customers' needs (i.e., its purpose).

Operationalize: Putting performance indicators into a form with which you can do business. Including addressing/considering data collection, information conveyance and portrayal, and decision making.

Performance: A function of specific criteria depending on the unit of focus. In the case of an organization, performance has been defined as a function of: efficiency, effectiveness, innovation, quality, productivity, quality of work life,

and profitability (for a profit center) or budgetability (for a cost center). Process performance is commonly defined as a function of: product or service quality (error rate), fitness for purpose (usability or application), cycle time (delivery or response), quantity, cost, and value of outputs. Performance improvement focuses on improving these criteria.

Performance Gap: The difference, or gap, between the voice of the customer and the voice of the process. Between what customers want (i.e., identified requirements), and what you – your process or the organization – are providing them (i.e. actual performance). You compare performance indicators (voice of the process) to reference points (voice of the customer) to make information and establish performance gaps.

Performance Indicator: Performance indicators (like reference points) are data points. A data point is made up from fact and meaning. Comparing an indicator to a reference point (defined, below) makes information. Performance indicators convey the voice of the process.

Process: A set of interrelated or interacting activities that transform inputs into outputs. Processes are the steps and decisions involved in completing a value-adding activity.

Process Owner: The individual who is ultimately responsible and accountable for the process working properly. The process owner is the manager or leader who has control over the entire process from beginning to end. A process owner may directly lead the actions of a process improvement team or may decide to delegate the team leadership role to another person who is knowledgeable about the process. Whatever the case, it is very important for the process owner to stay informed about the team's actions and decisions affecting the process.

Portray: How you portray information is essential to its use in decision making and its ability to convey meaning. Like all information, it can take the form of text, visuals – bar and line charts, diagrams, etc. – or any other form of media, or even multimedia. The use of color and detail are critical, as is having sufficient data to make the information statistically significant.

Reference Point: Reference points are data points. A reference point is the basis for making information from a performance indicator. You determine reference points mostly from learning about your stakeholders and their needs. You learn about your stakeholders from surveys in the form of interviews and questionnaires. The indicators you decide to measure in your surveys are the ones that lead you to many of your reference points and many of your standards (defined, below). Reference points convey the voice of the customer.

Standard: A required or specified performance level. Standards are reference points you are committed to meeting.

Tampering: Making changes to a process too often, before definitive performance trends have been established and the data has shown the process to definitely be out of control is termed tampering.

Trend: Continuously increasing, steady, or decreasing performance over a period of time.

Voice of the Customer: The voice of the customer conveys the customer's requirements – needs, wants, desires, and expectations. Data provided by reference points and standards.

Voice of the Process: The voice of the process conveys process capability and performance. Data provided by performance indicators.



BALDRIGE FOCUS

What are your key performance measures or indicators used for the control and improvement of your value creation and support processes?

How does your day-to-day operation of these processes ensure meeting key process requirements (i.e., standards)?

How are in-process measures used in managing these processes?

How is customer, supplier, and partner input used in managing these processes, as appropriate?

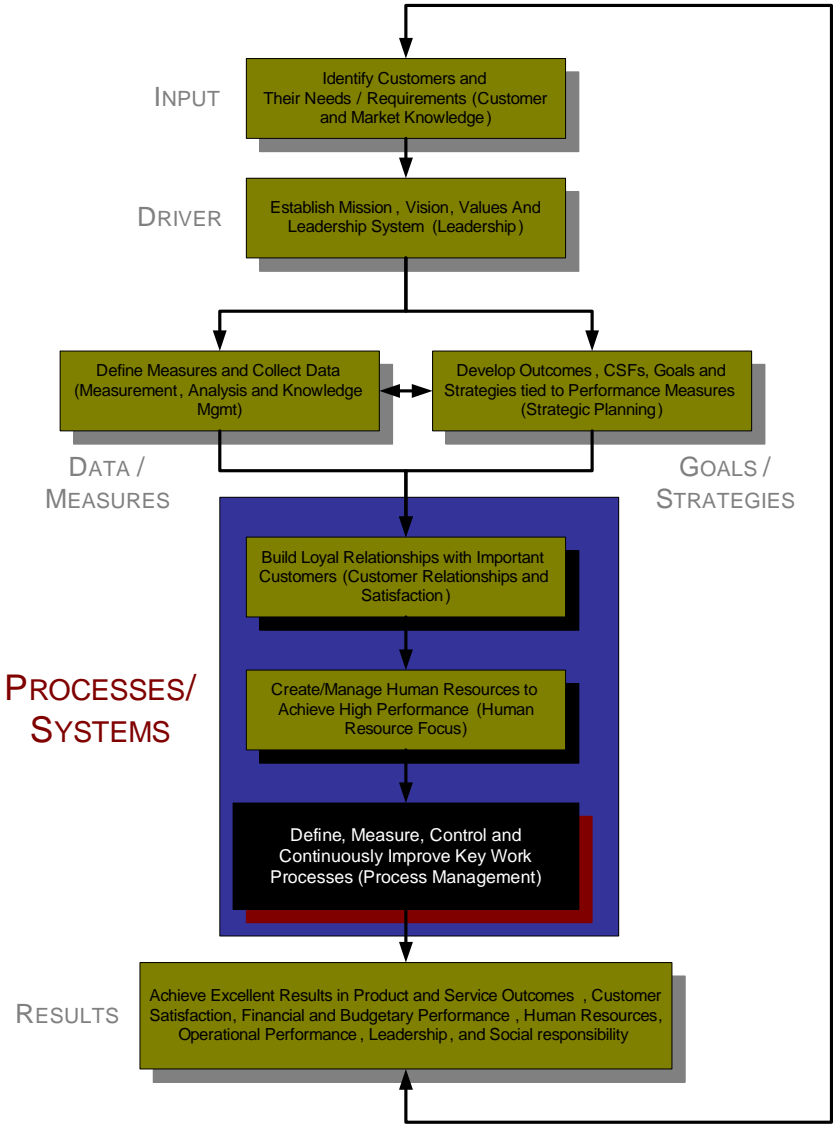
How do you minimize overall costs associated with inspections, tests, and process or performance audits, as appropriate?

How do you prevent defects and rework, and minimize warranty costs, as appropriate?

How do you incorporate cycle time, productivity, cost control, and other efficiency and effectiveness factors?

*The **Process Management Category** examines the key aspects of your organization's process management, including key product, service, and business processes for creating customer and organizational value and key support processes. This Category encompasses all key processes and all work units.*

BALDRIGE LINK



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