



NAC Executive Insights

Continuous Performance Improvement Process

Key Points

- Recommends and documents a Continuous Performance Improvement Process (CPIP), which requires a detailed assessment and customized approaches.
- Offers top level management systems for a business.
- Presents an example deployment flow chart to guide implementation of a specific work process.
- Discusses the foundation for deeper dive into the various management systems that comprise the Quality Management Plan-Do-Check-Act cycle.
- Summarizes 35 work processes detailed in companion Executive Insights.
- Emphasizes the importance of organizational leadership and alignment to the success of CPIP.

Introduction

This Executive Insight defines the Continuous Performance Improvement Processes (CPIPs) and is complemented by a series of Executive Insights that provide flowcharts for each of the various processes employed as part of a Plan-Do-Check-Act approach. These Executive Insights reflect the author's experience both in industry executive roles as well as consulting in this area.

This Executive Insight examines:

- What CPIP is all about
- The Continuous Performance Improvement Process (CPIP)
- Future expectations — vision/mission
- Know your business
- Management systems and detailed work processes
- Responsibility, authority and accountability (RAA)
- Performance and process metrics

What Is CPIP All About?

All organizations have a continuous challenge to improve their overall performance. To be effective this intervention needs to be planned, implemented, performance verified, and direction changed if performance improvement is not occurring. The Continuous Performance Improvement Process (CPIP) discussed in this Executive Insight provides examples of all the elements that need to be addressed. Organization, leadership, and alignment within the organization are clearly necessary. The elements outside the organization also must be understood and strategies developed to deal with the potential impacts of these external elements.

The approach presented in this Executive Insight and the companion Insights are a result of over 40 years of development in both company managed organizations and consulting assignments. It is applicable to most businesses.

The methods and processes described across these Executive Insights are not easy, cook-book applications. They require organizational effort to implement CPIP in specific companies and to have an impact on the desired improvements. This and the companion Executive Insights can be customized by an organization to accomplish the desired improvements.

The Continuous Performance Improvement Process (CPIP)

Frequently one hears “a picture is worth a thousand words.” This series of Executive Insights uses pictures, as work flow processes, to communicate and facilitate understanding of the concepts being proposed. Figure 1 (page 4) is an overall process flow chart of the continuous performance improvement process. The figure illustrates the specific initiatives that an organization must implement to have a comprehensive CPIP.

The effort required will depend on the areas of change to be addressed. If the effort is to focus on total organizational change substantial time and effort will be required. If a single improvement effort is selected such as safety performance considerably less effort will be required.

A quick review of the process indicates specific responsibilities in the organization. Clearly the desire to improve is driven by the organizations executive and includes:

- The decision to undertake performance improvement
- The definition of the organization’s vision and mission and the alignment of these throughout the organization.
- The development of the simplified view of the business so the internal and external influences on performance can be understood and the strategies to manage these influences are developed and understood throughout the organization
- The identification of desired areas of change. For high level changes, executive leadership is responsible for the identification of opportunities. If the improvement is at a lower level, operating employees at all levels may share in the responsibility. However, it is clearly the senior executive responsibility to select the areas of change and commission the improvement teams to complete the effort.

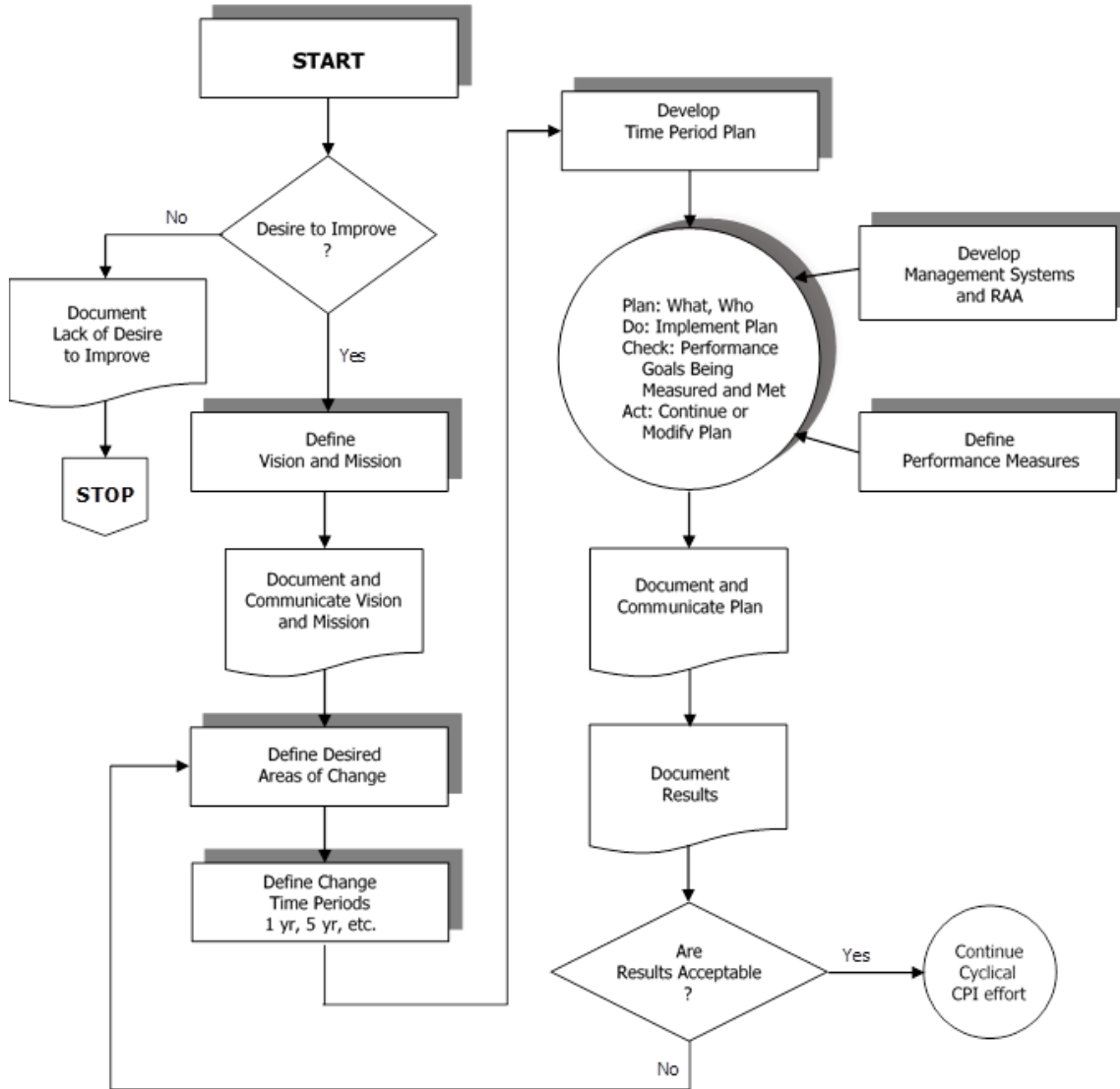
Once these decisions have been made the improvement teams initiate the Plan-Do-Check-Act cycle using management systems, responsibility and authority, and existing work processes. It is particularly important to note here the use of performance and process metrics to determine progress and, if desired improvement is not evident, to review (Check) and change the effort (Act).

It should also be noted that documentation of the effort and communication of the status of the change is also important to the members of the organization.

If the change is to be implemented, proper training and redefined management systems, work processes and RAA must be developed and integrated into the new way of doing business.

Figure 1

CONTINUOUS PERFORMANCE IMPROVEMENT – THE PROCESS



Future Expectations - Vision/Mission

The importance of this element of the CPIP effort is that it sends a clear message from the board of directors and the chief executives of the desired future state of the company. Clearly, if future goals are not set, it is difficult for the organization to know it has arrived. The vision/mission approach is adopted from Quality Management principles and defined as follows:

Vision — the manner in which one sees or conceives of something in the future or in simple terms:

- Define expectations of what the company looks like and how it conducts its business in the future.

Mission — operations carried out to effectively meet the planned program of the organization or in simple terms what the company gets paid to do:

- Satisfy customers need while meeting all other demands.

It must be stressed that the top leadership of the organization must develop the high level statements and assure alignment throughout the organization

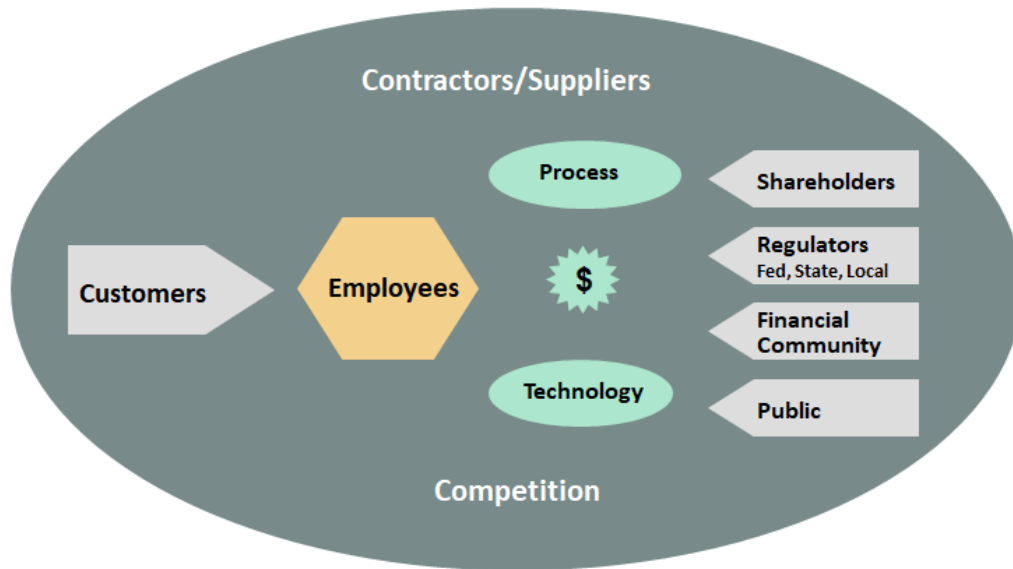
Know Your Business

A key first step in initiating CPIP is to thoroughly identify and understand the other individuals and/or organizations that have the potential to impact your results. Strategies would need to be developed to address any threats or effects that may come from these outside influences.

Figure 2 presents a simplified view of a business which indicates the elements that may impact business performance both internal and external to the company. Specific strategies to address these elements need to be developed, communicated, and implemented by the organization.

Figure 2

Simplified View of a Business



In the case of a business, it has customers and uses people, process, technology, and money to deliver what customers want. The financial resources generated from this effort fund the stakeholder rewards and all other financial needs. Clearly, outside elements—regulators, public, contractors/suppliers, and competition—impact the company’s performance. These influences need to be understood and strategies (management systems) developed to deal with the impacts.

Management Systems and Detailed Work Processes

Management systems are defined as the processes and procedures used to ensure that an organization can fulfill all tasks required to achieve its desired performance and to continuously improve performance. While the organizational structure will influence selection, Figure 3 (page 6) presents a generic set of management systems/work processes specifically developed for a pipeline transportation company. They are specifically presented in the quality management context of Plan, Do, Check, Act. The companion Executive Insights examine the various processes in more detail.

The “Plan” focus is both on longer ranging strategic issues and shorter time-frame operational issues. If one shares the view that employees are a company’s most important asset, then human resources, management, and supporting detailed work processes are a high priority. All of the management systems described in these Executive Insights apply to any business.

The “Do” focus is actually getting the business done. Of those processes outlined only commodity movement is specific to logistics businesses such as a pipeline company (although elements can be

found in mining and the natural resource sector) while the others apply to any business. Specific processes will be required for different sectors, for example “manufacturing steel” and supporting work processes will need to be developed by that organization.

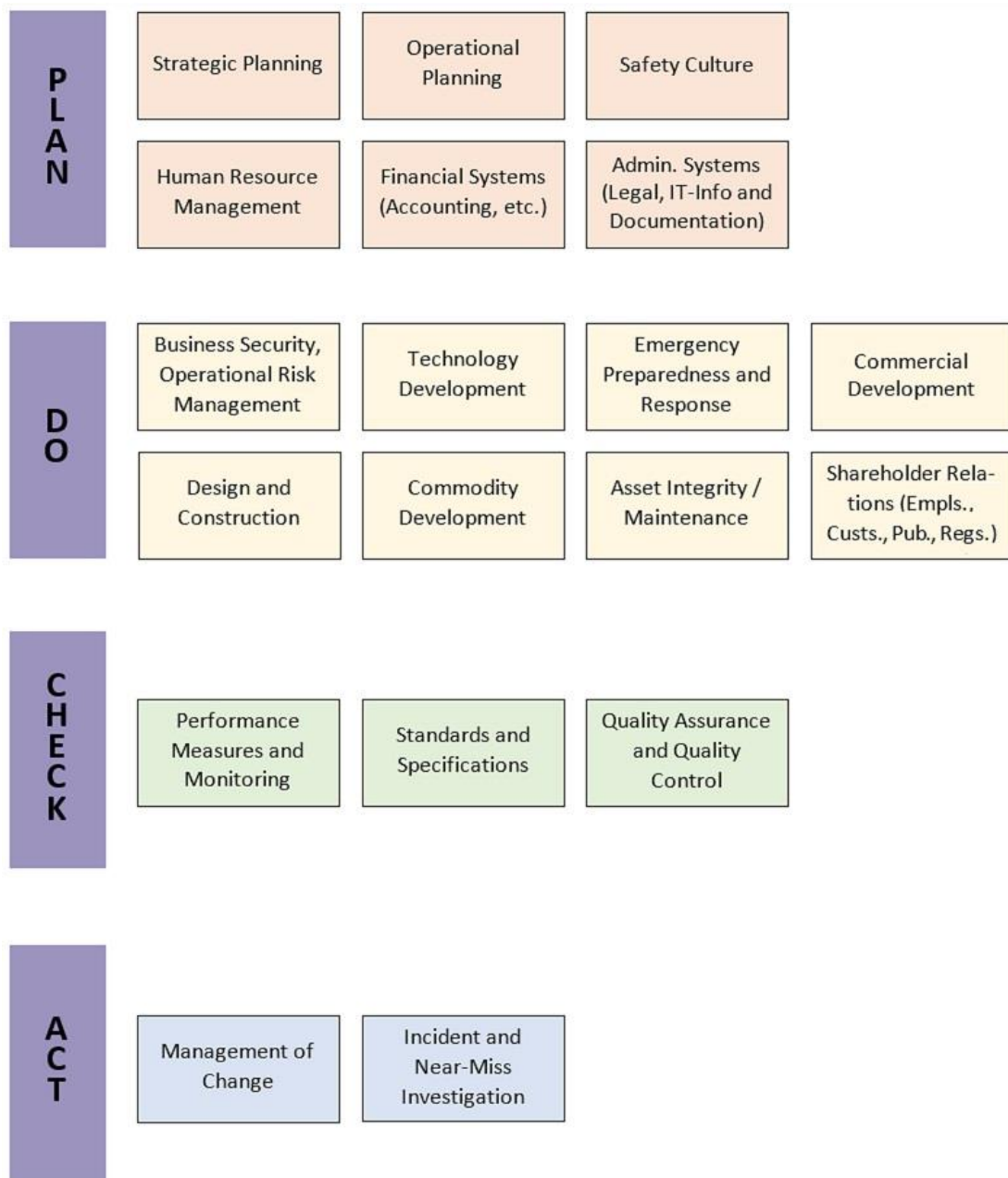
The “Check” phase determines if the organization has consistent standards and quality efforts to meet the performance expectations of the company. Here the existence of performance measures clearly defined for all members of the company and systematic reporting are critical.

The “Act” phase assesses if performance expectations are being met and employs the management system to get back on track if they are not. Management of change applies to all elements of the business. While incident and near miss investigation applies to safety related issues including employee safety, operational and public safety.

Application and implementation of these management systems requires specific, standardized work processes which are utilized throughout the organization. The companion Executive Insights provide 35 work processes that, like the management systems in Figure 3, can be adapted for any company in any business. These processes need to be documented and communicated throughout the organization. In particular, a process owner must be selected for each process and they must monitor process performance and lead any process modifications.

Figure 3

Management System for a Business



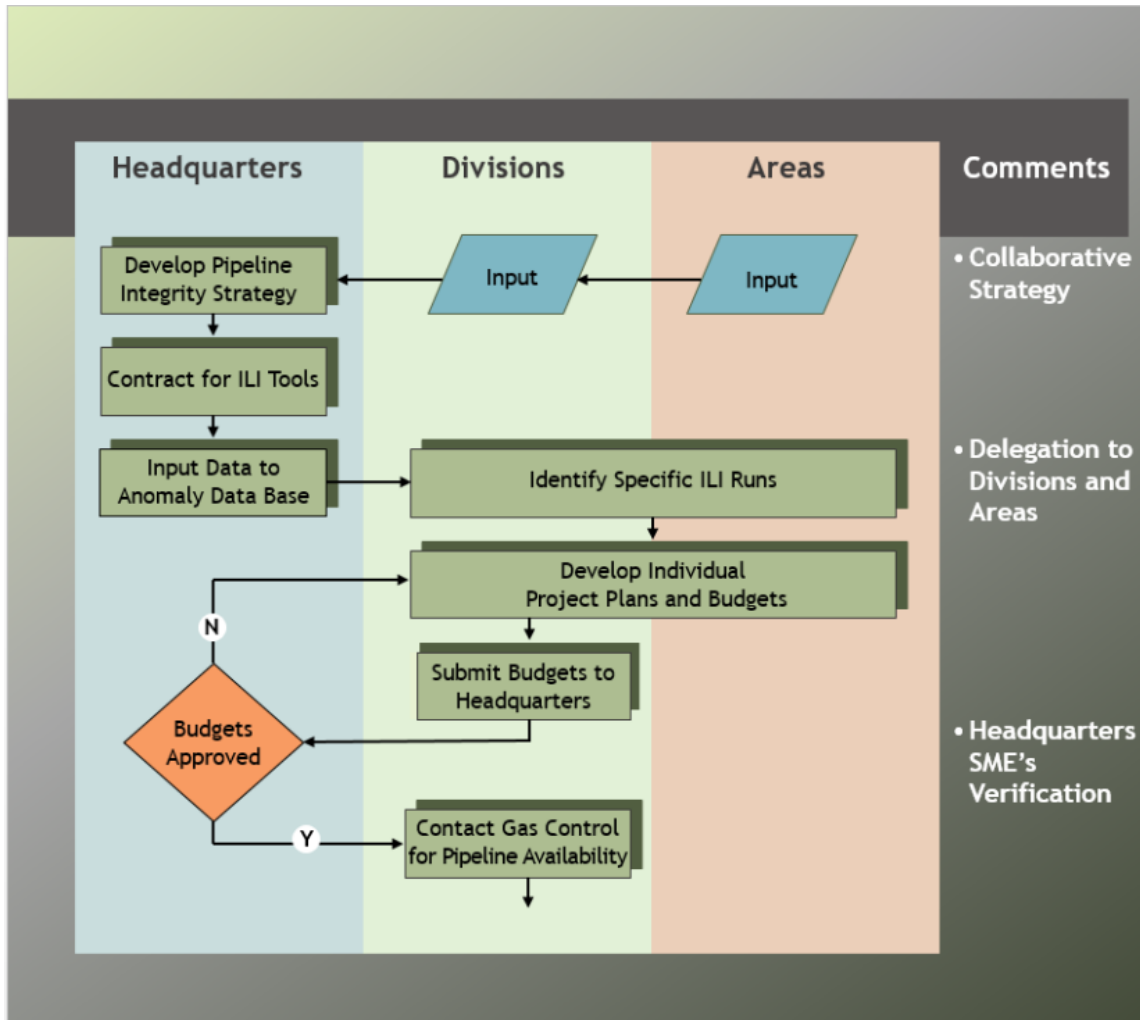
In most organizations, many individuals and/or organizational elements are involved in implementing work processes. If responsibilities and movement of responsibilities are not clear, there is a tendency for necessary actions to be overlooked. A deployment flow chart (Figure 4A) is a tool to assist in assigning and fulfilling responsibilities.

The example illustrated here was developed for a national gas transmission company, and focuses on pipeline integrity in a company with three organizational elements: headquarters, divisions, and areas.

The responsibilities shown are from strategy development to budget development and preparation for field implementation.

Figure 4A

Deployment Flow Chart

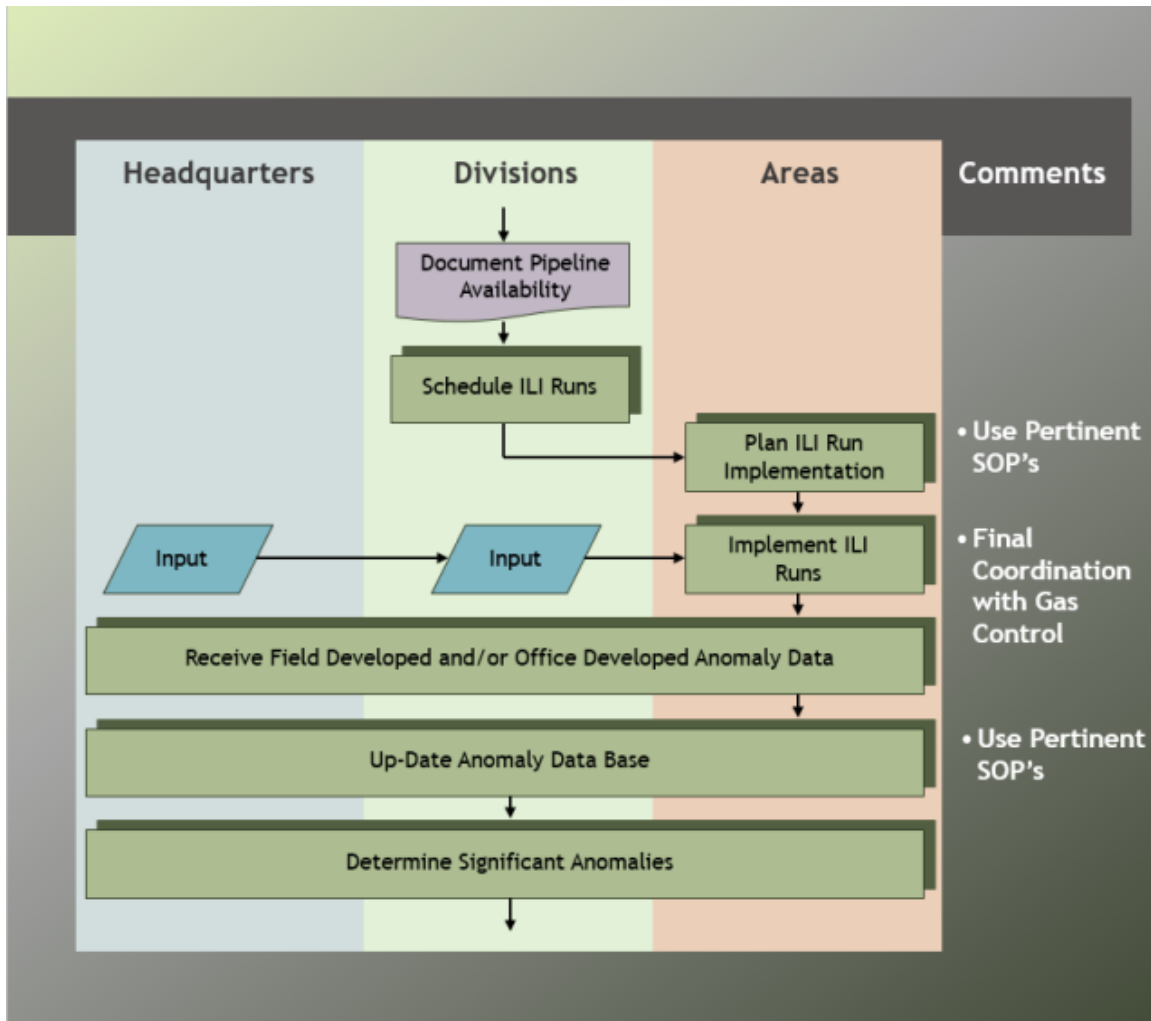


The delineation of the key responsibilities continued with a collaborative effort in determining the significant anomalies. Standard operating practices (SOPs) were utilized where appropriate.

(Note: "ILI" or In-Line Inspection is a common term in the Pipeline industry referring to the process for determining the condition of pipe's internal or in-line condition.)

Figure 4B

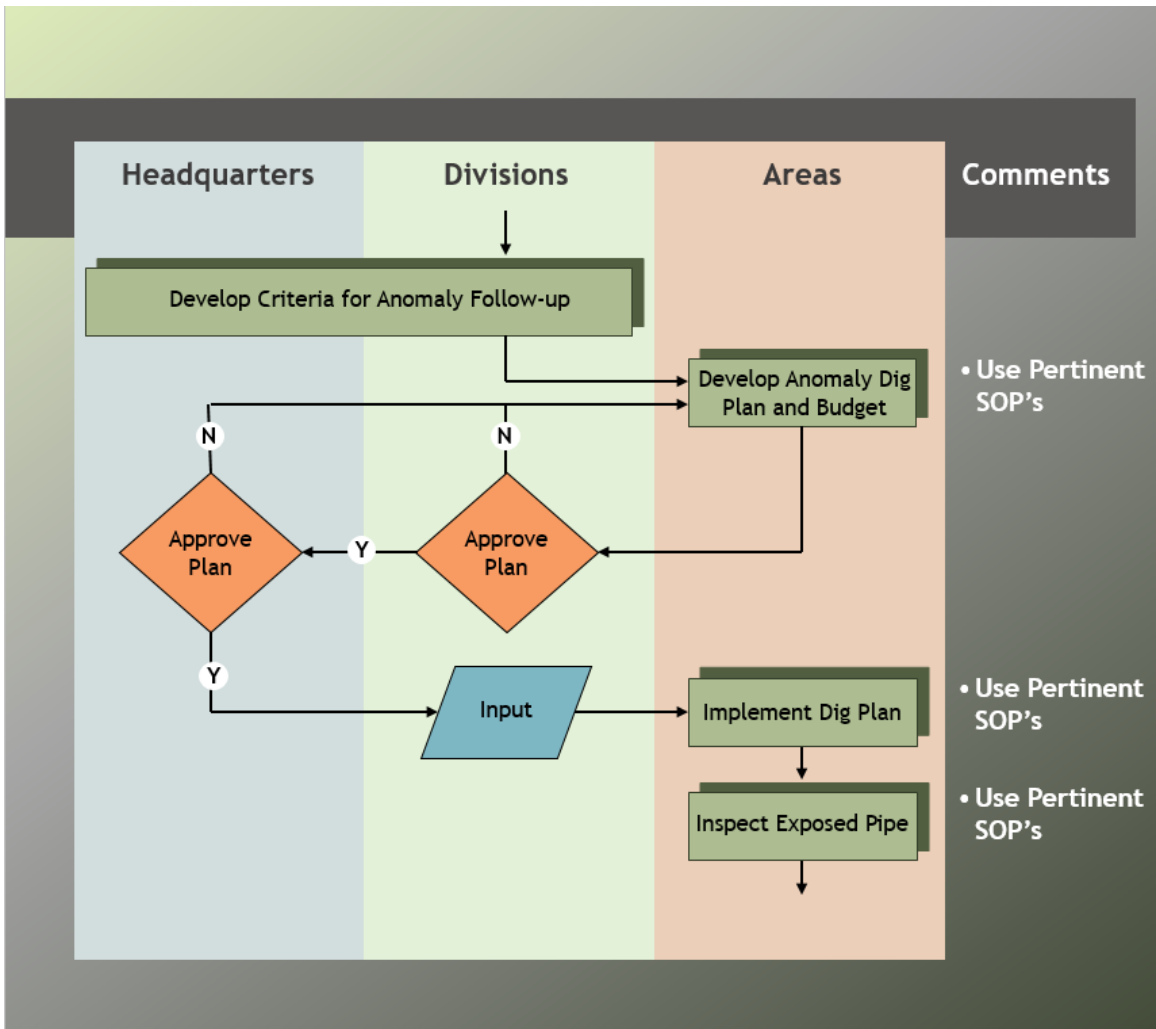
Deployment Flow Chart



The planning responsibilities of the headquarters and divisions are shown here, along with the areas' efforts to develop the specific dig plans and budgets. After approval by the divisions and headquarters, the areas implement the dig plan and the exposed pipe inspection.

Figure 4C

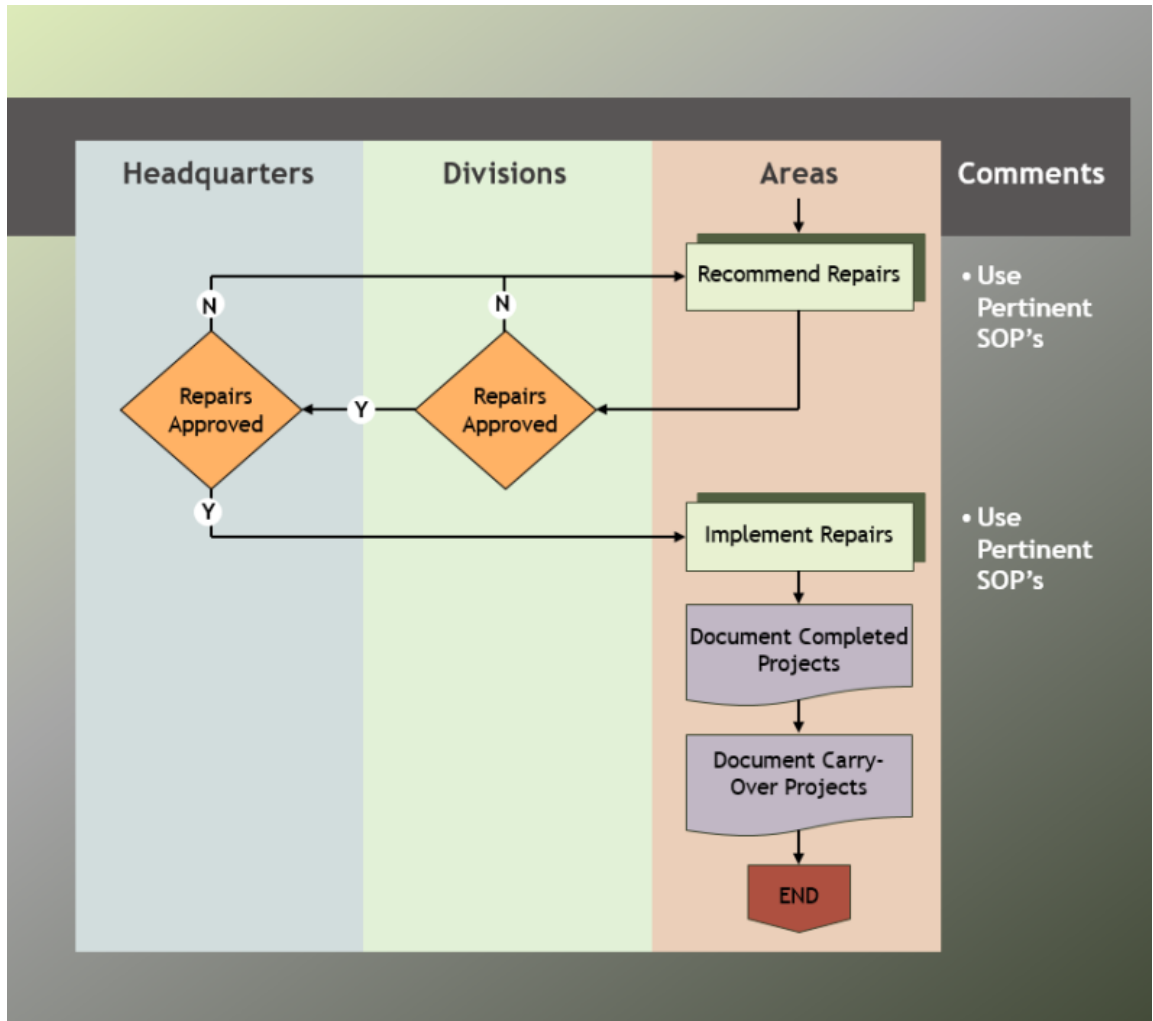
Deployment Flow Chart



The areas recommend repairs, and after approval by the divisions and headquarters, implement the repairs. It is also the responsibility of the areas to document the completed projects and to update the inline inspection database for carry-over projects.

Figure 4D

Deployment Flow Chart



Responsibility, Authority and Accountability (RAA)

It is critical for everyone in the organization to understand their responsibility, authority, and accountability (RAA) and the same for their fellow organization members.

- **Responsibility:** A duty, obligation or burden
- **Authority:** A power to enforce laws, actions, and processes that are assigned
- **Accountability:** An obligation to provide results as defined by clear performance metrics

It must be emphasized that all three of these need to be defined for each individual in the organization and clearly documented and communicated. Examples for effective RAA matrices for a company are shown in Figure 5. The positions column in each must reflect the organizational structure and cover all positions in the organization.

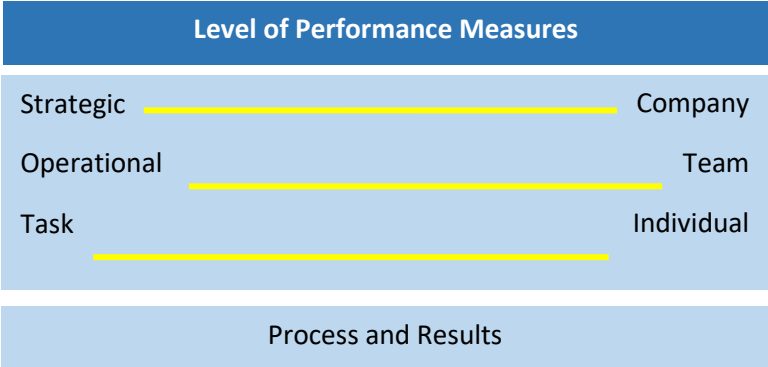
Figure 5

Example RAA Matrix

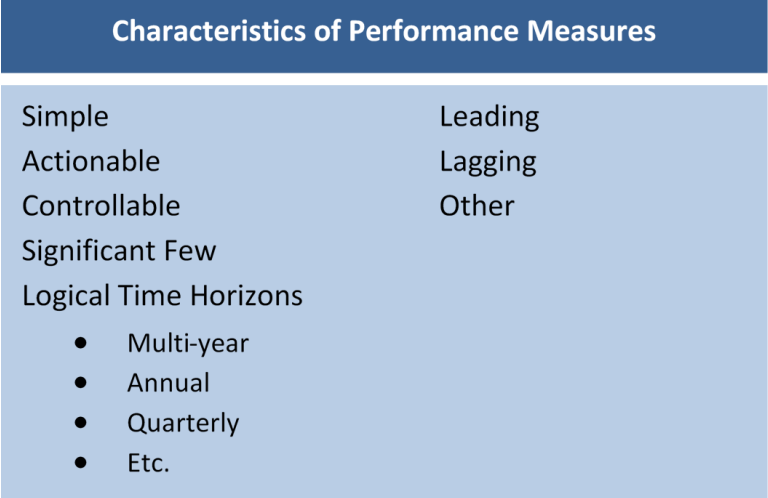
| POSITION | Responsibility | Authority | Accountability | Comments |
|--------------------------------|----------------|-----------|----------------|----------|
| Board and Executive Management | | | | |
| Other Corporate Officers | | | | |
| Senior Operating Management | | | | |
| Other Line Management | | | | |
| Staff Services | | | | |
| All Others | | | | |

Performance and Process Metrics

For purposes of this Executive Insight, performance expectations are defined as, “establishment of goals, objectives or behaviors that a company, teams and/or individuals must meet if the company is to be successful. In general, specific measurements (metrics) must be defined so that future progress can be tracked.” The nature of organizational structures causes us to recognize that there are levels of performance measures as follows:



It is also recognized that performance measures may meet a number of characteristics as:



The challenge for any company is to select the significant metrics, communicating those and providing necessary training so that individuals understand the importance of and use these metrics. An organization also needs to provide timely reporting of these measures in order to track that performance is in line with expectations. If not, intervention is required. Here again, the management of change process discussed earlier can be of value. Any change in the identified measures must then be communicated across the company with the new expectations clearly defined.

Conclusion

This Executive Insight presents a proven approach to Continuous Performance Improvement using Plan-Do-Check-Act processes developed for all businesses. The broad applicability of this approach and its particular relevance in engineering and construction is evident for both owner and provider organizations. A critical objective is the complete understanding of RAA by everyone in the organization.

Throughout this Executive Insight reference has been made to work processes that will be detailed in companion Executive Insights, summarized in Table 1.

Table 1

Detailed Work Processes by Plan-Do-Check-Act

Plan

- Strategic planning management system
- Operational planning
- Management sub-system: Administration
- Management sub-system: Financial
- Personnel Management sub-system
 - Compensate/discipline resources
 - Hiring
 - Identify resource requirements
 - Individual development plans
 - Resource availability assurance
 - Succession planning
 - Training and education
 - Personnel qualification

Do

- Asset integrity process
 - Design
 - Build
 - Maintain
- Commodity Movement Process (pipeline company example)
 - Defining operating limits
 - Operate, monitor and control
 - Schedule movements, maintenance, prevention and mitigation
 - Manage incidents
- Business risk management system
- Commercial development process
- Management sub-systems
 - Operation
 - Technology
 - Security management system

- Stakeholder relations process

Check

- Performance measurement system
- Regulatory compliance and industry best practices/standards management system
- System to identify pertinent regulations
- System to identify specific requirement

Act

- Incident investigation management system
- System to develop response plan
- System to implement response plan
- System to track and document progress
- Management of change system
- Performance measurement system

About the Author

Joseph W. (Joe) Martinelli is a charter member of the National Academy of Construction. He was president of Chevron Pipe Line Company before forming Performance Improvement Consultants in 1998, now PiPRO. Previously, he was the general manager of Chevron's Engineering Technology Department, vice president of Petro-Canada, and held numerous domestic and international positions with Gulf Oil. He is a former chairman of the Construction Industry Institute (CII) and was a Baldrige Quality Award examiner for three years.

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