Microsoft® Solution Accelerators

Continuous Improvement

A MOF Companion Guide

Version 1.0

Contents

Introduction

This MOF companion guide is written for service delivery managers and practitioners looking to:

- Understand what continuous improvement is and how to effectively take advantage of Microsoft® Operations Framework (MOF) content for successful improvement initiatives.
- Understand how to use audits, assessments, management reviews, and metrics to identify and initiate justified improvements.
- Define an approach to maturing services and processes using continuous improvement.

This guide steps through when and how to use continuous improvement to your benefit, for any role or authority level in the organization.

Continuous improvement is the discipline of identifying and implementing value added enhancements to services, processes, or the organization. A primary challenge facing organizations is to be able to adequately provide all existing services and still be agile and responsive to changing business needs. Sometimes, the need for change is obvious, such as when an acquisition is made or there is a significant shift in business strategy. Often, though, change is less obvious, evolving over time and with less specific direction. Organizations that effectively practice continuous improvement are more likely to detect the evolving needs and adjust course.

Consider the following scenarios:

- A recently implemented Microsoft System Center Operations Manager monitoring schema is generating too many notifications to the server support team, many of which do not require immediate attention.
- There has been a 30 percent increase in remote workers since a change in human resource policy supporting telecommuting, stressing the communication solutions designed a year prior to the policy change.

In each of these cases, there is an opportunity for improvement. The challenge is how the need for improvement is recognized, and who and how it is advocated for to ensure the needed improvements are implemented. In the case of the monitoring issue, the server team members themselves may have the capability to identify the need, request, authorize, and implement the change. With the increase in telecommuting, this issue may only be identified by monitoring and report analysis, or, in the worst case, analysis of a service outage. The changes required to the communication solution to effectively support the new demographics may be executive-level project sponsorship and approval.

For successful continuous improvement then you need to ensure there are:

- Mechanisms for improvements to be identified at any organizational level.
- Means to channel the opportunities into improvements
- Defined approach to implementing improvements with business value.

This paper provides guidance to address these challenges.

The concept of continuous improvement, the ongoing discipline of improving processes, services, or organizations in line with changing business needs, is based on W. Edward Deming's (http://deming.org/) cycle of improvement, shown in Figure 1.
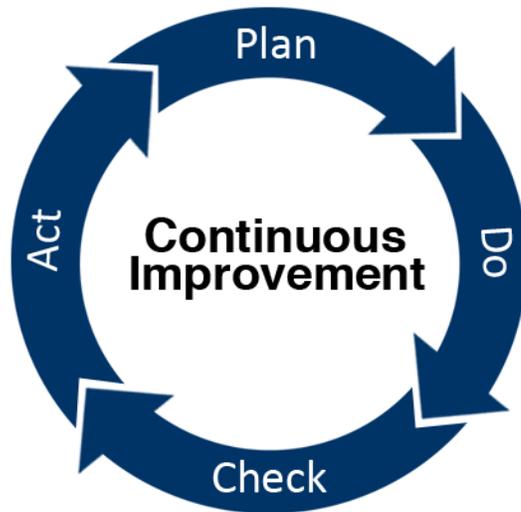
Figure 1. The Deming Cycle

There have been many adaptations of this basic cycle of Plan, Do, Check, Act (PDCA). The intentions of each aspect are:

- **Plan.** Define and plan the change.
- **Do.** Implement the change.
- **Check.** Monitor the change, analyzing the effectiveness of the change.
- **Act.** Adjust based on the analysis, initiating appropriate improvement activities.

With significant improvement projects, such as establishing a new service or process, all four stages of the Deming Cycle are used. With ongoing improvement, the focus is on the Check and Act stages to monitor, measure, review, and implement improvement initiatives. PDCA provides the basic approach to continuous improvement and can be applied on an individual, team, or organizational level.

As with any process, the PDCA cycle needs triggers in order to ensure the process is initiated. These are the mechanisms for ensuring improvement opportunities are identified. Triggers can be built into specific processes, such as a change review, or they can be planned periodic activities such as MOF management reviews. Metrics also provide important information that can trigger improvement activity. This guide will detail a variety of triggers, provide an approach to justifying improvements, describe the PDCA process, and highlight how MOF can be used to support continuous improvement by individuals, managers/teams, and organizations.

Intended Audience

The primary audiences for this guide are the people responsible for adopting service management principles in an organization. They range from C-level executives to managers to architects and other more technically minded leaders.

A secondary audience is end users, the people who are on the front line, actually using service management processes, tools, and products that embody service management.

Readers should ideally have some familiarity with the Microsoft Operations Framework (MOF) and a basic understanding of the concept of continuous improvement.

Expected Outcomes for Continuous Improvement

Continuous improvement, when effectively applied, can lead to the following results:

- Flexibility to adjust services and processes to address changing business circumstances.
- Improved efficiency, effectiveness, quality, control, and outcome attained from existing capability.
- Increased maturity of services and processes.

Continuous improvement can lead to identification of beneficial improvements of any size. It can result in something as significant as a new service, or recognize when an existing process or service is approaching end-of-life and will not continue to sustain target business results. It can't be relied on to compensate for poor design, but it is especially important for ensuring target results are achieved from service and process initiatives post- implementation. For example, a process can be designed to sustain a medium to high level of maturity, but an organization currently in a chaotic state, with a newly deployed process, will not suddenly perform at a medium or high level of maturity. After the process is deployed, continuous improvement activities will guide the participants, along with practice, to the higher level of process maturity. For more information on process maturity, see http://www.sei.cmu.edu/cmmi/start/.

Consider the example of a health insurance firm that needed to lower costs per subscriber and looked for ways to contribute to this reduction. With a development staff of several hundred, the organization knew they had opportunities to improve efficiencies. Performing an operations assessment, they determined that significant development resources were tied up in addressing incidents caused by previous changes. They were caught in a vicious cycle of change-incident-change. Development resources were tied up in this reactive work and unavailable for strategic and value-add projects. Although changes were recorded for audit purposes in a variety of databases, the timing, quality, and impact of changes was not managed.

The organization established Change and Configuration Management and embraced continuous improvement to improve the maturity level of the processes and supporting tools. The initial deployment of the Change and Configuration Management processes was critical, but the initial focus was just to get staff to participate in the process and record changes. Although this was a necessary step in the progress, the initial project itself would not have achieved the desired results without ongoing continuous improvement activities.

Once the staff was on-board with recording, the focus changed to improving impact analysis. Improvements in configuration data, assessment templates, and reporting led to greater use of the data to demonstrate the effectiveness of the changes. Over the next two years, they recovered thousands of hours of developer time, significantly increasing the percentage of development hours spent on strategic projects. Concurrently, the number of incidents caused by changes was reduced, improving service quality. The recording and assessment of changes was standardized and centralized, improving audit readiness and compliance. Significant quantifiable results were achieved by applying continuous improvement to initially establish the processes via an operational assessment and then to other continuous improvement activities to achieve the desired results.

Position of Continuous Improvement Within the MOF Service Lifecycle

The MOF service lifecycle encompasses all of the activities and processes involved in managing a service: its conception, development, operation, maintenance, and—ultimately—its retirement. MOF organizes these activities and processes into Service Management Functions (SMFs), which are grouped together in lifecycle phases. Each SMF is anchored within a lifecycle phase and contains a unique set of goals and outcomes supporting the objectives of that phase. The SMFs can be used as stand-alone sets of processes, but it is when SMFs are used together that they are most effective in ensuring service delivery at the desired quality and risk levels.

Figure 2. The MOF service lifecycle

Continuous improvement is not an explicit component of MOF, but it is an integral aspect of successfully applying MOF principles in an organization. Continuous improvement underpins the Manage Layer because, like the SMFs that make up the Manage Layer, it applies across all of the other phases of MOF. The management reviews, indicated by diamonds in the MOF lifecycle graphic, are primary facilitators of continuous improvement in the service lifecycle, aligning continuous improvement activities for each phase.

Before you use this guide, you may want to read the following MOF 4.0 guidance:

- MOF Overview: http://technet.microsoft.com/en-us/library/cc543224.aspx

- Manage Layer Overview: http://technet.microsoft.com/en-us/library/cc539509.aspx

- Team Model SMF: http://technet.microsoft.com/en-us/library/cc543311.aspx

- Management Reviews: http://technet.microsoft.com/en-us/solutionaccelerators/dd320379.aspx

The Structure of MOF Content

It is helpful to understand the structure of MOF content to better understand the variety of ways MOF can be used to support continuous improvement. The content is structured to address the needs of the Director/CIO, Manager, and individual contributor. For each role, MOF provides guidance to develop and sustain continuous improvement. Figure 3 illustrates the framework used to develop MOF content:

- The left column presents the MOF components that ensure the organization functions effectively as a whole to deliver and improve quality, cost-effective services, an effort best addressed by someone at a director/CIO level.

- The center column lists SMF-specific guidance on how to establish and enhance service delivery, an effort that typically requires at least a manager level span of control.

- The right column indicates the components and guidance that support the individual contributor.

Figure 3. The structure of MOF content

Note that each attribute of MOF, noted by the yellow rectangles, includes specific guidance for that attribute. The components of MOF can be used in whole or selectively to guide improvement initiatives. For example:

- A technology subject matter expert looking to improve deployment activities can reference the deployment SMF in the MOF Deliver Phase and review the activities, key questions, and considerations for potential gaps or improvement opportunities in the existing deployment activities.

- A new Policy Manager may use the manager attributes of the Policy SMF to detail the establishment of a policy SMF, customizing the content for the organization.

- A business may report dissatisfaction with a service; its CIO asks that an Operational Health Management Review be conducted.

MOF also provides navigation into the set of Microsoft assets that enable service management, including continuous improvement, noted by the blue band in Figure 3. For example:

- MAPS Toolkit (available at http://technet.microsoft.com/en-us/library/bb977556.aspx) provides a free, downloadable agentless tool that discovers your Microsoft environment and provides a host of analytics for you to see where gaps exist.

- Solution Accelerators (available at http://technet.microsoft.com/en-us/solutionaccelerators/default.aspx) provide additional guidance for improving specific services such as the SharePoint® Capacity Planning Tool.

- Understanding the structural model of MOF enables the effective use of MOF content when applied to continuous improvement. It is especially helpful when performing audits, assessments, or management reviews, as will be covered in additional detail later in this document.

Identifying Improvement Opportunities

Although continuous implies that improvement activities are constant, they are only constant in the sense that they can be initiated by anyone—individuals, teams, or at an organizational level—and at anytime. Continuous improvement then, like any process, requires a trigger that initiates the PDCA activity. Triggers help to ensure that the identification is made and the action is initiated. Without action, there is no value created from the identification.

Figure 4. Continuous improvement triggers

Motivations for continuous improvement can come from many different places. Specific examples of triggers or motivators for initializing improvement include:

- **Financial planning.** Cost-reduction requests so that organizations can stay competitive.
- **Strategic planning.** Business strategy that requires a new service be added to or removed from the Service Portfolio.
- **Metrics and reporting.** Management reports, scorecards, or dashboards that point to gaps in actual vs. desired results for services, processes, and service level agreements.
- **Service health.** Service health issues that are affecting or may affect business performance, such as outages, loss of data, unavailable services, and security breaches.
- **Customer surveys.** Issues with gaps between customer expectations and perceptions of services and between service specifications and actual service delivery.

- **Audits.** Variances in performance requirements to pass audits, such as for ISO/IEC 20000.
- **Assessments.** Variances in efficiency or effectiveness of performance as compared to industry standard such as MOF. For example, excessive staff time spent reacting to unplanned outages.
- **Management reviews.** Routine reviews that reveal gaps such as a routine release readiness reviews indicate gaps in the build, stabilize, and deploy activities.
- **Technology advances.** New service architecture available in the market that would significantly improve the service value and/or reduce costs.
- **Process and service maturity.** Opportunity to increase the efficiency, effectiveness, and responsiveness of services and processes.
- **Regulations.** Compliance to new or changed regulations such as Sarbanes–Oxley (SOX).

Consider your organization: How many of these triggers are used routinely or periodically? Are actions initiated as a result of these triggers? If many are in place, continuous improvement is likely a key aspect of organizational culture. If few are used to initiate improvement activities, the organization has a greater gap in establishing continuous improvement as a competency. Selecting a few or even just one of these is a means to establishing continuous improvement practices.

Although there are many possible triggers, there are a few significant ones that merit a more detailed review. These triggers can be used routinely or periodically and can vary in scale to support individuals, teams, and the organization. MOF is especially helpful in supporting these triggers:

- Audits
- Assessments
- Management reviews
- Metrics and reporting

Audits and Assessments

Audits and assessments are often the impetus for initiating improvement activities. Assessments provide a baseline for improvement, while audits verify control and compliance. Assessments are often conducted in advance of audits to plan for improvements that ensure audit readiness. These activities are performed periodically, perhaps annually or semi-annually. MOF provides a structure to support both audits and assessments for services and processes.

Table 1. Audits vs. Assessments

Attribute	Audits	Assessments
Focus	Compliance and control	Efficiency and effectiveness
Results	Pass/fail	Maturity rating and/or identified improvement opportunities
Approach	Requirements are established by governing body, regulations, or other recognized authority	Compares current state to baseline, framework (such as MOF) or other standard
Purpose	Ensures compliance and control	Validates past improvement initiatives and plans for future improvements
Next Steps	Failure usually requires remediation to ensure business compliance	Requires follow-up commitment of resources to prioritize, justify, and implement improvements

Audits

MOF provides the best practice goals, roles, outcomes, metrics, and process so you can determine how you compare to audit requirements. Actual audit criteria will come from elsewhere, such as ISO/IEC 20000 (http://www.iso.org/iso/home.htm), which defines international standards of service management.

For example, the ISO/IEC 20000 Change Management control processes objective is to ensure all changes are assessed, approved, implemented, and reviewed in a controlled manner. The Change and Configuration SMF can be used to establish a process that supports achieving these objectives. The Change and Configuration SMF provides specific guidance to ensure changes are controlled via the following activities:

- Baseline the configuration.
- Initiate the change.
- Classify the change.
- Approve and schedule the change.
- Develop and test the change.
- Release the change.
- Validate and review the change.

An audit ensures that each of these aspects is clearly defined and that there is a means to verify that each action is completed and measured. If an audit indicates that any of these aspects are not defined, verified, or measured, The Change Management SMF provides the guidance to establish the needed controls.

Even if certification is not the ultimate desired result, audits, based on a standard like ISO/IEC 20000, provide a systematic guide to identification of opportunities for improvement.

Assessments

MOF guidance reflects best practices and can therefore be used comparatively to both assess current state and to identify potential improvements. The MOF structure can be used to form the assessment guide. Each attribute can be compared to current state. Where the current state differs from the MOF content, the content can be used to structure the recommendations for improvement. For example, when assessing a Service Monitoring and Control (SMC) SMF, consider all the aspects of the content:

- Are the **goals** clearly defined for SMC?
- What **roles** are required to effectively fulfill SMC activities?
- What are the desired **outcomes**? Are they **measured** and reported on?
- Is there a defined **process**? Is it effective at **achieving the goals** of SMC?

If any of these questions identify gaps in the SMC process, the specific guidance in the MOF content will provide the basis for the improvement plan. If there are no clear outcomes and measures, the MOF content suggests appropriate options. If there is not a defined process, MOF provides a basic process flow that can be adapted.

As mentioned earlier, assessments are sometimes used as a tool to prepare for future audits. They also provide a point-in-time perspective of a process or service that can then later act as a baseline to understand if the improvements implemented achieved the desired results.

Management Reviews

MOF management reviews organize the significant improvement considerations within each MOF phase. They ensure systemic, planned improvement, and establish the improvement as a managed priority. Management reviews save time and ensure routine examination of service management concerns. Each management review has a different purpose, appropriate for the objectives of the phase in which it resides, and either helps to identify improvement opportunities or prevent potential operations issues. Over time, as the reviews are conducted and appropriate actions are taken as a result, improvement benefits are realized and habits of continuous improvement are formed by the staff. The discipline created by consistent review/action/benefits builds and sustains an organizational capability of continuous improvement. Table 2 lists all six management reviews (MRs) in order.

Table 2. MOF Management Reviews

Management review	Description
Portfolio	This MR focuses on proposed service changes and the current mix of projects and services being built and in production. The ultimate outcome of the Portfolio MR is the initial project charter.
Project Plan Approved	This MR focuses on finalizing the scope of a delivery project. It signals a complete review of key project plans and the readiness of the project team to move on to the development of the solution.
Release Readiness	This MR focuses on the readiness of a new or improved service to be deployed; it results in a go/no-go decision about whether to deploy the release.
Policy and Control	This MR—performed at least biannually—evaluates the effectiveness of the policies and compliance controls in place across the service management lifecycle. The Policy and Control MR should identify requests for changes that will improve the management and enforcement of policies as well as improve the management of risk.
Operational Health	This MR provides a structure for reviewing and analyzing results and taking action to improve performance. It might result in requests for changes or improvements in existing services, as well as changes to service level agreements and operating level agreements.
Service Alignment	This MR focuses on understanding the state of supply and demand for services and directing investments to make sure that the business value of the service is realized. It is responsible for officially proposing new services, making changes to existing services (such as service improvements) that are larger than standard changes, and decommissioning features and services.

Consider an organization with an established email solution based on Microsoft Exchange 2007. Since the original establishment of the solution, the workforce habits have shifted significantly towards mobile computing, with a greater percentage of users accessing the service from mobile devices. In addition, the business has recognized communications as a critical business service and has recently updated the client communication process.

An Operational Health Review was conducted, leading to several recommendations to enhance this communication service, utilizing capabilities in Exchange 2010 and Office Communications Server, which resulted in:

- A simplified approach to high availability and disaster recovery better supporting the mission-critical service.
- Improved user experience including voice-to-text conversion for voice-mail messages, a seamless experience among asynchronous communications (such as email, voice mail, and calendaring), and synchronous (real-time) communications and employees' presence information—such as "busy," "in a meeting," or "out of office"—is automatically updated based on the meetings and appointments stored in their Exchange calendars.
- Archiving, granular multi-mailbox search, and legal hold eased regulatory compliance and discovery.
- Savings in storage costs.

In addition to the technology deployed, a significant training and change initiative was instituted to build employees' habit of keeping their calendars updated to ensure accurate and consistent reflection of their presence information for clients. This organization could have continued to use the existing Exchange solution, but the routine activity of conducting a review of the quality of service being delivered triggered the improvement initiative, resulting in tangible savings and improvements for support, the users, and the business.

Measurements and Reporting

Measurement and reporting are critical to the practical application of continuous improvement. Improvement requires a commitment of resources, so it is appropriate and expected that the organization demands accountability for achieving results. The most effective way to communicate successful improvement is via quantifiable results. Doing this requires planning during the early stages of the improvement process. There is a distinct relationship between the desired outcomes of a process or service and establishing the means to analyzing whether the outcomes were achieved. Figure 5 details this relationship.

Figure 5. Outcomes to analysis

There is a sequential relationship that is important to recognize for successful metric planning. Agreeing on the desired outcome, measurements, baseline, and target prior to the start of an improvement initiative is critical to evaluating success after the initiative is complete. Too often this is over looked and the opportunity to baseline is lost. Passing this information to the planning activities enables the check and act phases to reflect the intended results of the improvement. However, determining appropriate measurements can be a challenge. To assist with this, MOF provides significant guidance in selecting appropriate metrics—each SMF contains outcomes and measures, which can be used to set targets. Consider, for example, the Reliability SMF (http://technet.microsoft.com/en-us/library/cc506069.aspx). Table 3 details each aspect of the outcomes to analysis relationship and an example based on a Reliability SMF outcome.

Table 3. Measurement and Reporting Guidance

Measurement and reporting	Guidance	Example based on the Reliability SMF

Measurement and reporting	Guidance	Example based on the Reliability SMF
Outcome	- The desired effect of the planned improvement - If achieved, the improvement would be considered a success - This should be defined early and act as a guide for planning and desiging the improvement initiative	Improve service availability to users
Measurement	- Data that represents achievement of the outcome - Can represent a tangible results (that is, plan is produced), or be numeric such as a count or percentage - Select a measurement that can be collected effeciently (that is, automated) and cost effectively - May require that measurements for individual components be identified, then consolidated to measure the outcome - Consider the appropriate form of the measurement; percentiles are often more meaningful than averages when data is not normally distributed. Counts can be more meaningful than percentiles when occurrences are low; indicating expected variances establishes a normal range for the measurement	A reduction in the number of service failures
Baseline	- The current state of the measurement, prior to the implementation of the change - May require manual data gathering in order to estabish - When manual data collection is not an option, anecdotal baselines may suffice	The number of service failures in the previous 6 months per the incident tracking tool, Service Manager (http://www.microsoft.com/systemcenter/en/us/service-manager.aspx) (that is, 4 service failures in six months)
Target	- Desired state of the measurement after the improvement has been implemented - May be within a certain time period (for example, achieve 50 percent reduciton in service outages within six months) - If achieved or surpassed, the improvement will be considered a success - May not be the final desired end state but may be used to define success within a time period	Reduce the number of incidents by 75 percent within 6 months (that is, no more than 1 service failure in the next 6 months)

Measurement and reporting	Guidance	Example based on the Reliability SMF
Monitor	• Gather the measurement data • Automated data gathering is desired for accuracy, completeness and consistency	Record all service failures in Service Manager, collecting the data required to support the reporting
Report	• Report on the progress toward the target • Dashboards and/or scorecards can be used to communicate the results in appropriate time periods (on demand, daily, weekly, monthly, and so on) and to flag statistically significant changes and/or variations	Establish a report to indicate the number of service failures monthly, and during the past six months.
Analyze	• Is the measurement trending toward the desired result? • If so, is the pace appropriate and expected to continue at a pace to achieve the desired results? • If not, why not? What needs to change to achieve the target?	Note the trend based on the report data. If target is being attained, why not and what can be done about it?

Dashboards and Scorecards

A common challenge when selecting measurements and targets is that often organizations do not invest in the resources needed to obtain usable information from collected data. Using Service Management suites can assist in addressing this challenge. Two tools that make monitoring easier are dashboards, which are live representations of information at a point in time, and scorecards, which are utilities that present a stakeholder view of the achievement of outcomes and measures. Individual improvement activities may be best monitored with a dashboard, while scorecards are often used to communicate the most important organizational improvements to CIO/Directors and/or to the business. Consider the approach below illustrated in Figure 6.
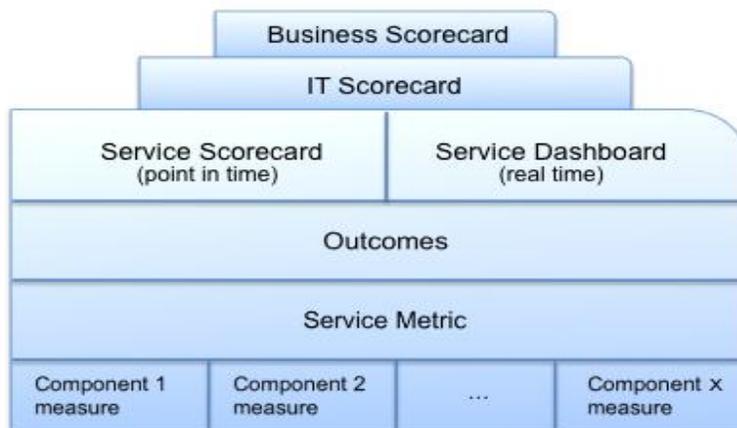
Figure 6. Scorecards and dashboards

Measurements are often gathered on the individual components of a service. They provide important information to the technical staff responsible for managing those components, but when they are combined for a service view, the information is more valuable for understanding the user experience with the service. The service metric should indicate if the desired outcome of the service is achieved. The outcome performance viewed in real time is referred to as a dashboard.

Scorecards provide a view at a specific point in time and often in relation to the historical performance of the service. This view, or a part of it, feeds into the IT scorecard, and then into the business scorecard. Understanding and planning for this connection from the business to the specific performance of individual technical components ensures the desired results from the technology investment.

Microsoft provides resources to gather data and report on dashboards and scorecards. The sample dashboard below is from the Microsoft Application Virtualization Dashboard solution accelerator (http://technet.microsoft.com/en-us/library/ff424455.aspx), which helps you monitor virtualized software applications across your organization. The dashboard's built-in charts, gauges, and tables let you track any APP-V dataset in near-real time, so you can easily stay on top of the usage, health, and compliance of all your virtualized applications.
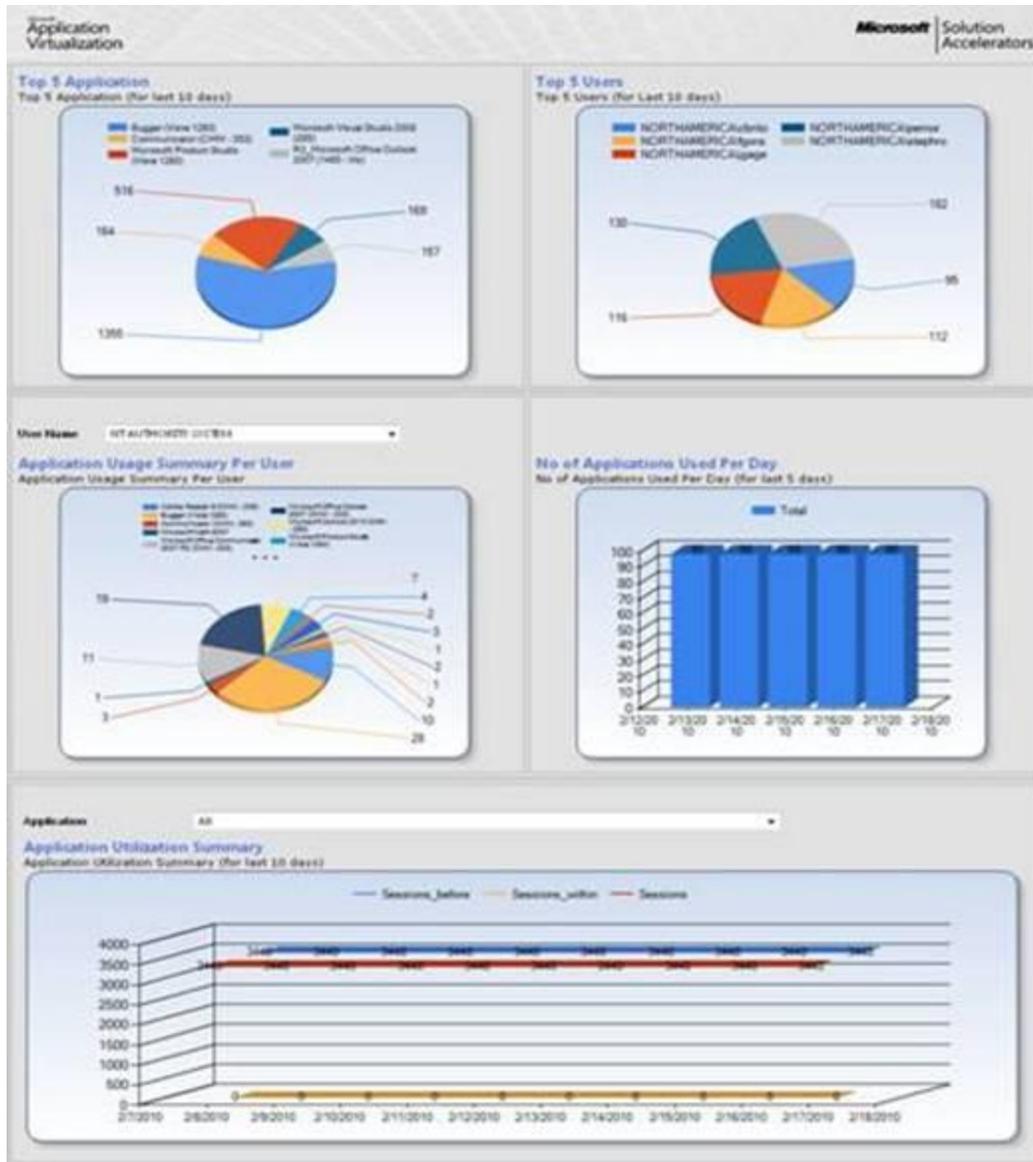
Figure 7. Microsoft Application Virtualization Dashboard

Scorecards can be created with relevant information for individual contributors, managers, and CIO/Director-level personnel. Each of these stakeholders is interested in a unique presentation of the data so that it is most relevant to their objectives. The information presented may be used to support:

- **Planning.** Such as understanding call volumes on an hourly, daily, and monthly basis for Service Desk staffing.
- **Service level agreements (SLAs).** To understand if the agreements are being achieved.
- **Motivation to support organizational change.** Certain metrics may be emphasized to establish the new behavior as a priority (for example, the percent of changes implemented during a planned release will be emphasized as an organization seeks to establish adherence to the release schedule and reduction of emergency changes).

- **Achievement of goals and objectives.** Especially important if individual and/or team compensation is tied to achievement.
- **Validation.** For example, to validate that changes were successful would require a list of changed configuration items.

Creating effective scorecards requires planning and understanding the stakeholders' needs. Each stakeholder group needs to be identified and then be consulted to determine which of the above information is most relevant for them. Then the following information needs to be obtained:

- What measurements will be used to support that information?
- Where/ is the data available and/or what tool will be used to obtain it?
- If the data is not currently collected, is there a cost-effective means to collecting it? If not, what alternative measurements/data could be used?
- What is the frequency of processing the data? Hourly, daily, weekly, or monthly?
- What format is required for the output?
- What tools and systems can be used for processing the data?
- How will the accuracy of the processed data be evaluated?
- This information is then used to design the scorecard and dashboards that support each stakeholder's view.

Justifying Improvement Initiatives

Some improvement initiatives are so straightforward or easily implemented that no formal justification is required. If the improvement affects an asset under change control, then the justification will align to the significance of the change and/or the risk introduced by the change. Significant improvement opportunities will require greater analysis and justification based on scope and required resources. This is especially true when several initiatives are under consideration but there are limited resources to plan and implement the improvements. Clearly defined problem/opportunity statements ease the communication and approval process for improvements. Each improvement opportunity should be evaluated using these criteria:

- What is the gap that triggered the improvement idea?
- What evidence is there that the gap exists?
- What is the impact of the gap on the business (for example, cost, customer, or compliance impacts)?
- What is the proposed improvement recommendation?
- What is the estimated investment in time, money, and assets?
- What is the expected return from the improvement? Over what time period?
- What is the cost or risk of not taking action?

Next, evaluate the opportunities, considering their degree of difficulty. The evaluating team needs to define the ratings based on organizational standards. The general example below can be made more specific by adding costs, resource hours, and risk definitions relevant to the organization. For example, the degrees of difficulty may be defined as:

- **Low.** Fast, inexpensive, low/no resources, low/no risks.
- **Medium.** Some time, resources, and risk involved.
- **High.** Long duration, expensive, resource intensive, high risk endeavor.

Then consider the relative impact to the business. This differentiates the opportunities based on the value expected to result from the initiative. They can be made more specific by adding financial, efficiency, quality employee, or customer satisfaction results to the general descriptions below:

- **Low.** No or minor impact to business results.
- **Medium.** Some impact on business results.
- **High.** Significant competitive, business, or cost savings anticipated.

When several opportunities are considered at once, these factors can then be weighted together in order to prioritize the initiatives:

- Opportunities with a low degree of difficulty and medium or high impact are clearly improvements worth pursuing.
- Those with a medium to high degree of difficulty and low impact should generally be discarded or re-worked.
- Those with medium to high degrees of difficulty and medium to high business impact may require additional analysis, especially when resources are constrained.

Consolidating the opportunity statement, degree of difficulty, and business impact results leads to a simple table approach for analysis and priority ranking. Sample degree of difficulty and business impact ratings are included to demonstrate how to use the table.

Table 4. Opportunity Statement Analysis with Sample Ranking

Opportunity statement	Degree of difficulty (H/M/L)	Impact to the business (H/M/L)	Score	Rank
Statement #1	H	L	HL	Discard or rework
Statement #2	M	M	MM	3
Statement #3	L	H	LH	1
…				
Statement #X	M	H	MH	2

This initial analysis results in identifying those proposals that need to be channeled into the organization's process for project approval and scheduling. The project approval process may require a more extensive business case. The opportunity statements created can create the foundation of that business case, but may require more rigorous analysis of costs and benefits.

Approach to Continuous Improvement: Plan/Do/Check/Act

With a clearly defined opportunity statement, expected outcomes, and measurements identified, the improvement planning can begin.
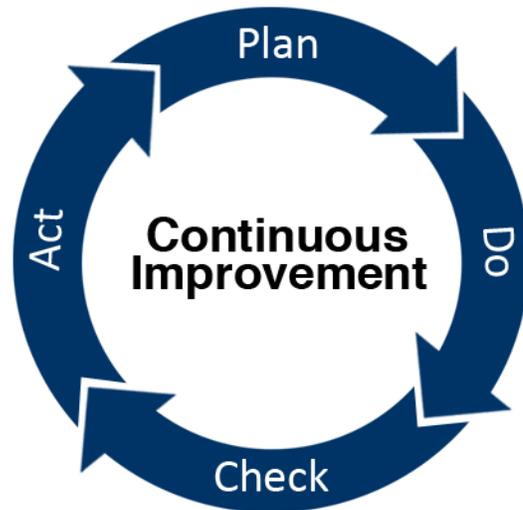
Figure 8. Continuous improvement: Plan/Do/Check/Act

Approach: Plan

Continuous improvement projects should follow the best practices for planning projects. Such discipline ensures accountability for the anticipated results and supports the successful application of organizational change concepts. MOF provides explicit guidance for project planning in the Project Planning SMF (http://technet.microsoft.com/en-us/library/cc543357.aspx). In general, the plan should include the following:

- Who is responsible for the project and associated tasks.
- Start and end dates for each task and the project overall.
- Milestones.
- Completion criteria.
- Current status of project.
- Next steps.
- Schedule of upcoming status reviews and adjustments.

The plan can be consolidated, presented, and managed using Microsoft Office Project (support resources are available at http://www.microsoft.com/project/en/us/default.aspx).

Depending upon the change, the appropriate subject matter resources should be referenced to ensure all key project tasks are accounted for. Consideration should be given to:

- MOF service lifecycle content.
- Technology references (for example, System Center Service Manager 2010).
- Organizational best practices for project planning.
- Measurements and reporting.
- Organizational change issues.

Organizational Change Plan

The organizational change plan is an important aspect of the overall project plan. The organizational change plan ensures the planners have thought through the aspects of personnel change inherent in the project. It considers the thinking and behaviors needed for the change to take place and the outcomes to be achieved. A complete organizational change plan should include a communications plan and a training plan. Each of these is covered in more detail here.

Continuous improvement implies that there is ongoing change in an organization. The idea of ongoing change implies that staff must be open and adaptable to changing work practices, tools, processes, and services. But it is often said that change is hard for people. So how, then, do you enable the organization to embrace continuous improvement? Understanding the discipline of organizational change is critical.

In their most recent book, *Switch: How to Change Things When Change Is Hard*, Chip Heath and Dan Heath provide insight to what individuals need to do to change. Our minds have a basic conflict, a conflict between the rational mind (the planner) and the emotional mind (the doer). The authors use an analogy, first introduced by Jonathan Haidt in *The Happiness Hypothesis*, of the emotional mind as an elephant, and the rational mind as the rider. The elephant can be difficult to control by the small rider, but when the elephant is inspired, there is passion. The passion needs direction that the rider provides. The rider requires energy to steer the elephant. Routine activities require less energy from the rider because the elephant complies. But often the elephant and rider don't agree, and it takes careful supervision by the rider to steer the elephant in the preferred direction; eventually the rider becomes worn out and the energy of the elephant prevails. Change is hard because of this resulting exhaustion. Both the elephant and the rider are important and needed for change.

In order to establish new practices, there needs to be an appeal to the emotional mind and the rational mind, the rider and the elephant. The rider needs direction, the elephant motivation and together they need to be pointed down the right path.

Consider the example used earlier regarding the organization establishing a Change and Configuration process. More than 25 percent of staff hours were devoted to re-work caused by changes, limiting the amount of time available for planned and strategic development work. The business was demanding more value-add work and budgets were contracting. It was critical to reduce this overhead caused by poor changes. Defining the process was a relatively straightforward exercise, but getting the staff to comply was daunting as the staff self-described the organization, with long-tenured employees, as very slow to accept change. The organizational change needed to be explicitly planned. The plan needed to address the needs of both the emotional mind and rational mind. Recognizing this helped the organization get started down the path of change and stay on it to attain the desired results. Table 5 provides guidance on how to achieve this.

Table 5. Organizational Change Planning Example

Organizational Change Aspect	Example
Rational appeal (Direct the rider)	• Point out that this has already been accomplished at some level. For example, was there a recent project that did a good job of planning, communicating, and testing the technology changes? Look closely at this project to see what the team did that led to the effective communication, testing, and planning. • Set specific short term objectives to initiate the change. Consider what you need to do to get the team moving in the right direction. For example, record all changes in a central place, such as Service Manager, at least one week prior to the change implementation date, and perform an impact assessment for each change. • Define the outcome. The long-term objective is no incidents caused by changes. Doing so will lead to less frustration and more time to do work the staff and the business values.
Emotional appeal (Motivate the elephant)	• Find the emotion. Remind the staff of the negative feelings associated with the service outages and the frustrations of unplanned work. While still fresh in the staff's memory, this motivates the emotional mind • Simplify the change. Error-free changes in a large, highly complex technology environment are a virtuous ideal, but difficult for staff to embrace because it is an overwhelming challenge. Instead, define specifically what types of changes need to be recorded and conduct impact assessments. This initial scope is specific and tangible. • Instill an identity. The team feels the embarrassment and stress of having to explain the recent outages, which is not something they feel good about or want to identify with. Instead, instilling an identity of success based on changes done right the first time is relevant to their professional identities.
Provide direction (Shape the path)	• Make it easy for the staff to comply with the change. For example, a simple interface, such as with Microsoft Service Manager, to record the change makes it easy to communicate. The establishment of a configuration management system allows the staff to pull a report that provides impact information to support the assessment. • Remove barriers that make it more difficult to change. The current meeting schedule was not in line with the need to communicate and review the changes prior to their release. The weekly meetings reviewing projects, identifying changes, reviewing and approving changes, and release planning were streamlined and re-ordered to better facilitate the earlier submission of changes. • Use positive peer pressure. For example, each week prior to the change meetings, the team received a report of the planned changes. When changes were recorded with less than a week's notice, they were flagged for review to understand why they were not recorded sooner. The submitter of the change needed to justify the late submittal to the Change Board. After a few individuals did this, it became evident that most of the organization was on board with getting changes in the system in a timely manner.

Explicit planning for the organizational change early in the continuous improvement process allows the project plan task lists to be shaped to ensure success. It also provides the understanding needed to plan for project communications and training.

Communications Plan

A communications plan ensures that all the appropriate stakeholders are identified and the appropriate communications are planned in order to address each stakeholder group's concerns. Table 6 describes the key considerations for each communication.

Table 6. Communications Plan

Consideration	Definition	Guidance
Who is the messenger?	This is the person who will deliver the communication.	Align the messenger with the message; consider the target audience, the appropriateness of the role, and credibility of the messenger.
What is the message?	This is the content of the communication, defining the purpose and objective of the message.	Tailor to the target audience; communicate the benefits specific and relevant to that audience.
Who is the target audience?	This is the individual or group for whom the message is intended.	Messages should be tailored for each target audience; the message, messenger, method, and timing may all vary for each target audience.
Timing and frequency?	Defines the specific day and or time communication will be delivered and then when it will be repeated or reinforced.	Plan and execute your communication in a timely manner. For communication to be effective, it takes more than a one-time message; consider the sequence of communication between stakeholders if all will not receive the message simultaneously.
Method of delivery?	Defines the format of the delivery; email, meeting, Webinar, in person, and so on.	Consider the sensitivity of the message. If two-way communication is required, choose a method that facilitates that; consider the effectiveness of the media in the individual organization (that is, email is effective in some organizations, less effective in others).
Feedback mechanism?	Define a method for the target audience to respond to or react to the message.	In a two-way forum, provide a structure for submitting and handling questions. In a one-way method, provide contact information for submitting feedback or the name of an individual to contact for questions.

Training Plan

The training plan considers the gap between how the organization operates prior to the change, and what behaviors/skills will be needed after its implementation. Training to develop the skills, understand the process, or effectively operate a tool may be required. Each stakeholder group should be evaluated for what skills, information, and experience they will need prior to the implementation. Appropriate training can then be planned and scheduled to support the implementation. Consideration should be given to the timing of the training; training too soon before the change is actually implemented may have little impact as the skills gained are not reinforced quickly enough and thus are lost. Just-in-time training is optimal, but can present a scheduling challenge, especially for more significant changes with large numbers of stakeholders to train. Consideration should be given to non-classroom training delivery options, such as e-learning and virtual training. The following table provides additional guidance for creating a training plan.

Table 7. Training Plan

Consideration	Definition	Guidance
Title	Course title, description, and/or number	Use distinct titles and/or course numbers, especially when there will be multiple courses or variances in the courses offered
Goal	The purpose of the training	What is the ultimate objective of the training? What is the most significant outcome for the participants?
Objectives	The specific skills or knowledge the attendees will attain from the course	What are the behavior changes, new skills, resources, and knowledge the attendees will attain from participating in the course? Consider: • Roles and responsibilities • Accessing and/or using a new service or process • Technology skills • Policies and procedures
Audience	The stakeholders for whom the course is designed	Consider the perspectives and level of detail needed by each stakeholder group. Separate those stakeholder groups needing either a higher or lower level of detail. Consider what they need to know, and what is important to each group.
Prerequisites	Any skills, training, reading, or certifications required by the course attendees prior to participating in the course	It is beneficial to provide some pre-work if there is variance in the experience of the attendees participating.
Format	How the training will be delivered	Consider online, e-learning, self-paced, virtual as well as classroom. Note also if there will be lecture or hands-on training for a specific service or tool.
Length	The number of instruction hours and duration of the course	Course may be delivered in entirety, or broken into modules delivered over a period of time, or self-paced.

Consideration	Definition	Guidance
Schedule	When the course will be available for delivery and/or course schedule	When will course be available for delivery and, if instructor led, when will specific sessions be delivered? Provide sufficient time for enrollment and scheduling so stakeholders can participate. Also consider if all stakeholder groups can attend simultaneously or if multiple sessions will be needed to accommodate operations (that is, all Service Desk Analysts would not be available to attend the same instructor-led course and still cover the service desk duties).
Outlines	High-level course content	High-level details of the course content, at the module level of detail.
Validation	A method for confirming that objectives have been met	May be in the form of a quiz, a certification exam, a set of role playing or paper-based exercises to complete, and so on.

The tasks identified in the organizational change, communications, and training plans should all be rolled into the master project plan. A MOF management review, Project Plan Approved, acts as a checkpoint before proceeding to the next phase of continuous improvement (http://technet.microsoft.com/en-us/library/cc543357.aspx). The Project Plan Approved management review helps to ensure that all key planning tasks were completed and the implementation phase tasks are planned and appropriately timed and resourced, increasing the likelihood of success for the improvement initiative.

Approach: Do

Once the planning has been completed, the planned improvement needs to be implemented, or deployed. For significant improvements, this phase can last for several months or longer. In these cases, the MOF Deliver Phase provides significant guidance for the successful implementation of continuous improvement initiatives. The Deliver Phase provides the processes and disciplines needed to successfully deploy services and processes into the environment. The guidance for Build, Stabilize, and Deploy apply at this point in the continuous improvement initiative.

The organizational change plan activities will coincide with the process and technical activities in the project plan. If resistance is detected to the change activities, consider the following possible causes:

- Is it due to emotional issues? If so, how can the appeal be strengthened or the change made easier?
- Is it due to logical issues? Has the vision been articulated, and are there specific steps to initiate the change that the staff can rely on?
- Is there a clear path? Are there any organizational barriers or conflicts to the change?

The initial organizational plan may require adjustments as the project proceeds. Listen to the participants in the change, and make appropriate adjustments.

As the time to implement the change approaches, it is helpful to ensure clarity of roles and responsibilities for the new state. The RACI chart is an effective tool to communicate the changes in responsibilities.

RACI stands for:

- **Responsible.** Those who ensure an activity/task is completed.
- **Accountable.** Those who ensure that results are achieved.
- **Consulted.** Those whose opinions are sought.
- **Informed.** Those who are kept up to date on the progress or task.

RACI, typically presented in table format, helps provide clarity on who does what after the change is implemented. It is an important complement to the communications and training plans. It is usually created during the Do phase because the decisions and information required for RACI are often not available during the planning phase.

Table 8. RACI Example

	Director Service Management	**Service Level Manager**	**Problem Manager**	**Security Manager**	**Procurement Manager**
Activity 1	RA	C	I	I	C
Activity 2	A	R	C	C	C
Activity 3	I	A	R	I	C
Activity 4	I	A		R	I
Activity 5	I	I	A	C	I

Once the project implementation tasks are completed and the change is considered ready for deployment to operations, the MOF Release Readiness management review (http://technet.microsoft.com/en-us/library/cc526658.aspx) helps to ensure a quality release and successful operations.

Approach: Check

Once the improvement has been deployed, it becomes an aspect of operations. Now monitoring begins to support the analysis of whether the improvement is achieving the desired results. The measurements established during the planning process enable the analysis to take place. While the initial identification of benefits is an estimate of those likely to be realized by the proposed improvement initiative, there is also a need to measure the benefits actually achieved. These measurements attest to whether the improvement activity achieved the intended outcomes and should indicate whether:

- The improvements were realized.
- The benefits arising from the improvements were achieved.
- The target return on investment (ROI) was achieved.
- The intended value-added was actually achieved.
- The outcomes of the preceding points lead to the evaluation of further process improvement actions.
- Enough time has passed before measuring the benefits.

Other questions to ask include:

- Are there any clear trends? Are they positive or negative?
- Are changes required?
- Is the organization or group operating according to plan?
- Are corrective actions required?
- Are there underlying structural problems?

Ensuring adequate time for the Check phase is an important aspect of effective continuous improvement. The staff will need time to absorb the change, practicing, making mistakes, and building the habits that lead to maturing processes and services. Establishing a regular schedule of reporting and review meetings is important for ensuring the desired outcomes are being achieved and that corrective actions can be identified and planned for. In order to accommodate success at this phase, it is important to make the right information, appropriate for each role, available and easily accessible. Dashboards and scorecards, described earlier, can assist with this.

Approach: Act

During this phase, consider whether the improvements are on track. If they're not, what adjustments need to be made? Assess the progress against the common risks of improvement initiatives:

- Was the improvement target overambitious?
- Did the change address the right combination of service, process, and people?
- Was appropriate technology used?
- Was training and knowledge transfer adequate?
- Were organizational change considerations applied successfully?
- Were appropriate resources allocated?

At this point, are any course corrections necessary? Does the staff need more opportunity to absorb the change or should action be taken to correct course? Often during an implementation, despite everyone's best efforts, a factor surfaces that requires attention and correction. Making these corrections ensures the longer-term success of the improvement.

When a change initiative project is completed, often the players move on to other projects and activities. It is important to plan post-project reviews prior to the dissemination of the team. Once in operations, the triggers identified earlier once again play the key role in identifying potential improvements. The cycle begins again when these triggers lead to improvement opportunities.

Note that much of the continuous improvement activity occurs within the Check and Act phases. When improvements are identified at the individual and team level and do not require significant resources or formal justification, actions can be taken to adjust and improve. When significant improvements, improvements that involve other stakeholders, or more improvements are identified than the existing resources can support, the cycle begins again.

Continuous Improvement Roles and Responsibilities

Since all roles can contribute to or participate in continuous improvement, it is most efficient to think of the responsibilities in terms of individuals, managers, and directors. While some changes require organization or team-wide effort for success, individual contributors do not have to wait for an organizational or team-level effort to benefit from continuous improvement. Similarly, managers and teams can apply continuous improvement within their circles of influence. Director-level continuous improvement programs should be reserved for issues that require them.

Table 9. Continuous Improvement Roles and Responsibilities

Contributor/ Role	Responsibilities	Example MOF Team SMF Roles
Individual	• Identify and communicate potential improvement opportunities within scope of responsibilities and as a stakeholder in the team and organization's success • Initiate improvement activities within scope of responsibilities • Communicate obstacles to achieving individual, team, and organizational goals • Participate in assessments, audits, reviews, and surveys as applicable	• Developer • Tester • Customer Service representative • Problem Analyst • Operator • Administrator
Manager	• Identify, consolidate, prioritize, and communicate feedback on potential improvement opportunities at the team level • Provide resources, support, incentives, and recognition to team members to identify, justify, and implement improvements • Communicate and/or sponsor improvement opportunities outside the team's responsibilities to appropriate stakeholders • Facilitate the removal of barriers to team's success in implementing improvements • Lead and/or participate in assessments, audits, reviews, and surveys as applicable • Produce, review, and analyze measurement reports for potential signs of improvement opportunities. Distinguish normal variation from statistically significant changes in performance parameters • Identify and recommend information, tools, and resources needed to support continuous improvement activities throughout the service lifecycle	• IT Manager • Operations Manager • Technology Area Manager • Supplier Manager • Customer Service Manager • Program Manager • Monitoring Manager

Contributor/ Role	Responsibilities	Example MOF Team SMF Roles
CIO/Director	• Establish an organizational vision and culture that enables continuous improvement • Provide resources, support, incentives, and recognition at the organizational level to identify, justify, and implement cost and business-impact justified improvements • Communicate and/or sponsor organizational improvements to the business • Facilitate the removal of barriers to the organization's success in implementing improvements • Sponsor assessments, audits, reviews, and surveys as applicable • Ensure measurement reports are produced, reviewed, and analyzed for potential improvement opportunities • Sponsor information, tools, training, and resources needed to support continuous improvement activities throughout the service lifecycle	• IT Executive Officer

In addition to the general responsibilities detailed above, certain roles have more significant influence on continuous improvement as defined in the MOF Team SMF. For example:

• A primary goal of the **Customer Service Manager** is to effectively and efficiently decrease incidents and incident solutions, analyzing incident data to identify opportunities for eliminating incidents or reducing their frequency.

• The **Monitoring Manager** role is crucial to supporting the measuring and reporting needed to facilitate continuous improvement, ensuring that the right data is collected.

• The **Service Level Manager** ensures effective service delivery within specified SLAs, using the metrics to determine if there are any gaps between actual performance and agreed levels of performance and initiating corrective actions when performance is degrading or insufficient.

A review of all the roles as defined in the MOF Team SMF indicates most have some aspect of continuous improvement, either within the specific accountability or in broader support of continuous improvement. The Team Model role descriptions and guidance in the Team SMF can be used to ensure an organization's formal role and job descriptions support the expectation that continuous improvement is a basic requirement. This integration of continuous improvement into the formal human resource practices of an organization further enables the building of continuous improvement as an organizational capability.

How to Get Started

MOF provides the framework and guidance for practicing continuous improvement. Used consistently in complement with audits, assessments, management reviews, and metrics, MOF provides a systemic approach to identifying improvement initiatives. Justified improvements can be successfully implemented using the PDCA approach. To get started on enhancing your organizational capability for continuous improvement, consider the following courses of action:

- Get the complete suite of MOF content and complementary guidance at www.microsoft.com/MOF.
- Plan a management review. The Operational Health Management Review is an ideal one to identify potential opportunities for improvement, especially if the organization is new to formal practices for continuous improvement. Alternatively, select another management review or perform an audit or assessment on a service or process.
- Review the roles and responsibilities for continuous improvement using the Team Model and the guidance provided in this document to plan for appropriate activities at each level and role.
- Identify an improvement(s) to implement, using the PDCA model.

Feedback

Please send comments and feedback to MOF@microsoft.com. To keep current with the latest releases and beta review programs, please subscribe to our newsfeed on the MOF home page.

Appendix: Key Terms

Table A-1 gives the definitions of key terms found in this guide.

Table A-1. Key Terms

Term	Definition
assessment	Point-in-time appraisal of the state of effectiveness and efficiency of a process, service, or organization. Assessments often are based on internal or external benchmarks used for comparison to the current state. Assessments are aimed at establishing a baseline for action to improve efficiency (achieving results without resource waste) and effectiveness (how well outcomes are achieved). Contrast with Audit.
audit	Evaluation of a process, service, or organization to ensure actual practices are documented, are compliant with relevant regulatory requirements, and meet defined control objectives through direction, monitoring, measurement, and management. Audits are aimed at establishing a baseline for action to improve compliance and control (that is, helping the organization ensure that it has documented what it says it is doing, is doing it, and can provide evidence that it is being done). Contrast with Assessment.
continuous improvement	The ongoing discipline of improving processes, services, or organizations to ensure optimal efficiencies, effectiveness, compliance, control, and outcomes in line with changing business needs.
management review	Internal controls that provide management validation checks, ensuring that the goals are being achieved in an appropriate fashion and that business value is considered throughout the service management lifecycle.
organizational capability	Organization-specific competencies that provide competitive advantage and enable an organization to achieve goals. The greater the capability is, the more difficult it becomes for competitors to achieve. Capability is the ability to transform resources through activities into outputs. Given the same set of resources, organizations with higher capability can produce higher quality outputs, or produce the same outputs more effectively and efficiently, with better compliance and control.
organizational change	Practice of leading personnel to change the way they think or act regarding a specific aspect of organizational practice or culture in order to achieve desired business results and behaviors that can be sustained over time. The focus is on the human aspect of understanding, justifying, aligning, and changing individual behavior to achieve the desired organizational-wide behaviors. This is typically accomplished by removing barriers and providing enablers to the desired outputs and behaviors.

Continuous improvement relies on assessments and audits to establish baselines for improvement. MOF management reviews can be used as routine point-in-time checks that trigger the improvement process. When practiced consistently, continuous improvement becomes second nature—the rudiments are already learned, so the practitioner can focus on the object of improvement. When continuous improvement does become second nature, an organizational capability is established. Organizational change is the means to establishing the capability, motivating people to adopt the continuous improvement thinking and behaviors that lead to sustained, desired business results.

Acknowledgments

The Microsoft Operations Framework team acknowledges and thanks the people who participated in the development and review of *Continuous Improvement: A MOF Companion Guide*. The following people were either directly responsible for or made a substantial contribution to the writing and development of this guide.

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