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1. PURPOSE. The purpose of the Enterprise Information Technology Service Management (ITSM) Knowledge Management Process Guide is to establish a documented and clear foundation for process implementation and execution across the Marine Corps Information Environment (MCIE). Process implementation and execution at lower levels (e.g., Regional, Local and Programs of Record) must align and adhere to directives and schema documented within this guide. The use of this guide enables USMC Information Technology (IT) activities through promoting standardization of work instructions and operating procedures across a continuum of document specificity.

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Enterprise IT Service Management
Knowledge Management
Process Guide

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Enterprise IT Service Management Knowledge Management Process Guide

1.0 INTRODUCTION

1.1 Purpose

The purpose of this process guide is to establish a documented and clear foundation for process implementation and execution across the Marine Corps Information Environment (MCIE). Process implementation and execution at lower levels (e.g., Regional, Local and Programs of Record) must align and adhere to directives and schema documented within this guide. The use of this guide enables USMC Information Technology (IT) activities through promoting standardization of work instructions and operating procedures across a continuum of document specificity as represented in Figure 1-1.

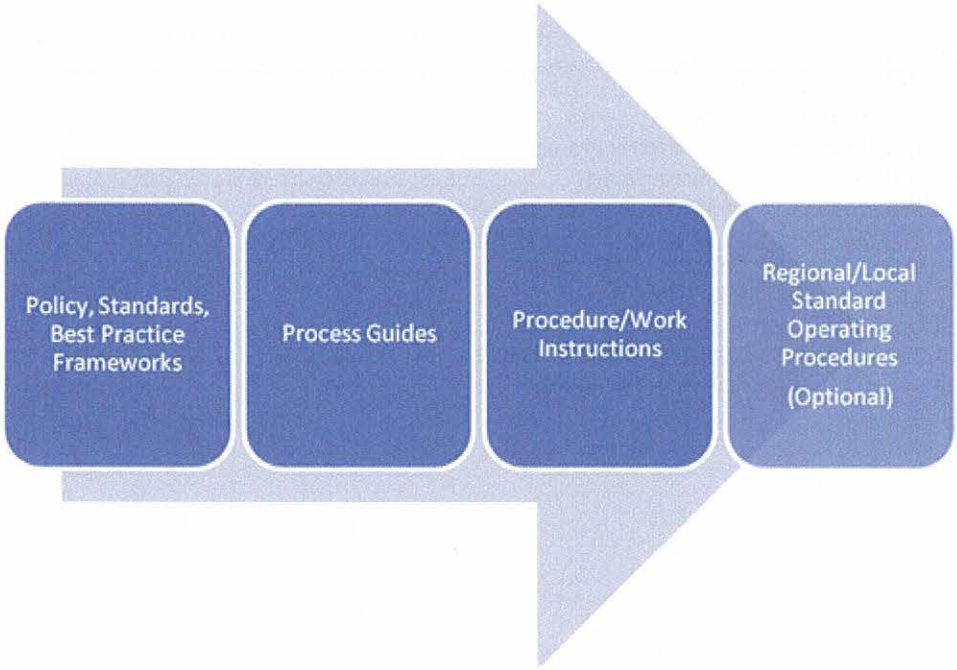

Figure 1-1. Process Document Continuum

1.2 Scope

The scope of this document covers all services provided in support of the MCIE for both the Secret Internet Protocol Router Network (SIPRNET) and the Non-Secure Internet Protocol Router Network (NIPRNET). Information remains relevant for the global operations and defense of the Marine Corps Enterprise Network (MCEN) as managed by Marine Corps Network Operations and Security Center (MCNOSC) including all Regional Network Operations and Security Centers (RNOSC) and Marine Air Ground Task Force Information Technology Support

Center (MITSC) assets and supported Marine Expeditionary Forces (MEF), Supporting Establishments (SE) organizations and Marine Corps Installation (MCI) commands.

Table 1 depicts the various layers of document design. Each layer has discrete entities, each with their own specific authority when it comes to promulgating documentation. This enterprise process operates at Level B, sub processes such as procedures and work instructions are not included within the scope of this document.

Table 1: Document Design Layers

	ENTITIES	DOCUMENTS GENERATED
LEVEL A	Federal Govt DoD DoN CMC/HQMC	Statutes/Laws DoD Issuances DoN Policies Marine Corps Orders/IRMS
LEVEL B	HQMC C4 MCNOSC MCSC	MCOs IRMs (Process Guides) Directives MARADMINS
LEVEL C	RNOSC MITSC	Regional Procedures Work Instructions
LEVEL D	MCBs POSTS STATIONS	Locally Generated SOP's

1.3 Process and Document Control

This document will be reviewed semi-annually for accuracy by the Process Owner with designated team members. Questions pertaining to the conduct of the process should be directed to the Process Owner. Suggested changes to the process should be directed to USMC C4 CP in accordance with MCO 5271.1C Information Resource Management (IRM) Standards and Guidelines Program.

2.0 PROCESS OVERVIEW

2.1 Purpose, Goals and Objectives

The U.S. Marine Corps views Knowledge Management (KM) as a holistic organizational goal, containing many different, yet interrelated aspects such as strategy, culture, process, technology, performance and learning. The goal is for KM practices and principles to be operationalized and institutionalized within all organizations and programs across the enterprise, including IT. In accordance with MCO 5400.52, the Combat Development & Integration (CD&I)/Marine Corps Combat Development Command (MCCDC) is the Advocate for KM in the Marine Corps. The process ownership (i.e., accountability) for Knowledge Management specific to ITSM comes from the Headquarters Marine Corps (HQMC) C4 who is strategically partnered and aligned with CD&I in order to leverage and incorporate KM practices to enable effective Enterprise ITSM operations.

The scope of ITSM Knowledge Management in this Process Guide is focused specifically on knowledge to support delivery of IT Services, as shown in Figure 2-1 below. The ITSM Knowledge Management is targeted beyond individual IT teams on the more holistic management of ITSM knowledge artifacts across all IT teams. It is relevant to all service management life cycle phases and processes because it provides secure and controlled access to ITSM data, information and knowledge that is needed to manage and deliver services. The scope of Knowledge Management in this Process Guide does not extend beyond IT Service Management. As mentioned above, there are other broader enterprise Knowledge Management initiatives that are setting strategy for USMC.

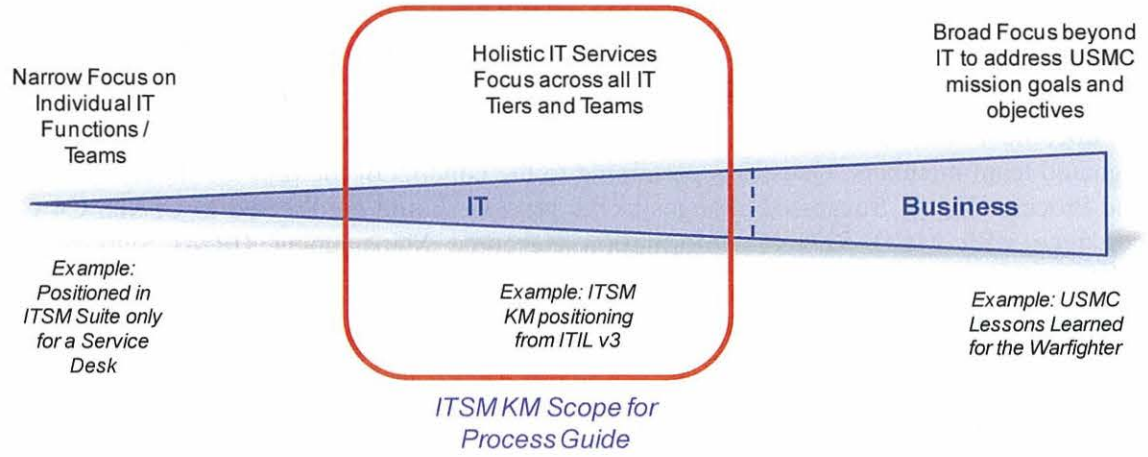

Figure 2-1. Positioning of ITSM

The purpose of IT Service Management (ITSM) Knowledge Management is to leverage shared information and experience to ensure the right information is delivered to the right person or place at the right time in order to enable informed decisions on IT services.

The objectives of ITSM KM include:

- Improve the quality of management decision making by ensuring that reliable and secure ITSM data, information and knowledge is available throughout the service life cycle
- Gather, analyze, store, share, use and maintain ITSM data, information and knowledge throughout the service provider organization, i.e., the USMC ITSM organization which is a virtual community composed of regions, installations, acquisition organizations, governance and policy organizations across multiple chains of command
- Enable the service provider organization to be more efficient, improve quality of service, increase satisfaction and reduce the cost of service by reducing the need to rediscover knowledge
- Ensure that service provider staff have a clear and common understanding of the value their services provide to the customers and the ways in which benefits are realized from the use of those services
- Maintain a Service Knowledge Management System (SKMS) that provides controlled access to ITSM data, information and knowledge that is appropriate for each audience

As depicted in Figure 2-2 below, when ITSM KM is successful, operational users and other stakeholders are able to make correct judgments and decisions using available ITSM data, information and knowledge. Conversely, sub-optimal decisions are made when stakeholders are forced to make decisions based on data or information alone.

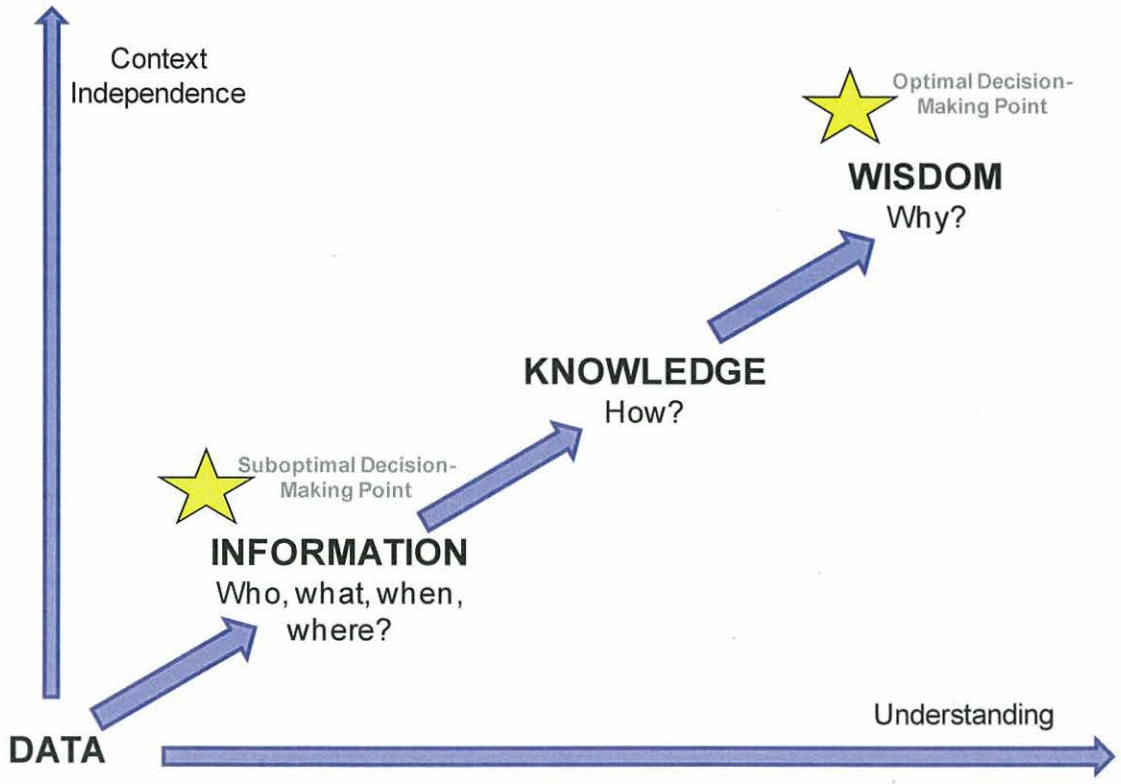

Figure 2-2. Path from Data to Wisdom

In this document, the ITSM KM process is described using roles and responsibilities, process business rules, high level process flow, key process interfaces and process performance indicators that USMC will implement. The IT processes and business rules within this document support delivery and consistent service improvement to ensure quality of IT services for all USMC IT users.

The Enterprise ITSM KM Process Owner ensures that the MCIE IT Service Management community can collect, analyze, store and share information, situational awareness and knowledge affecting the IT community. The process owner's mission is to ensure MCIE accessibility and reliability of information for operational users and reduce the need to rediscover knowledge; as well as facilitate the exchange of operationally relevant information and expertise in order to maintain and enhance MCIE ITSM processes and functions.

2.2 Relationships with Other Processes

All IT Service Management processes are interrelated. The Enterprise ITSM processes in Figure 2-3 were selected due to the strength of the relationships and dependencies between them and the degree to which they underpin USMC near-term objectives. While any one of the ITSM processes can operate in the presence of an immature process, the efficiency and effectiveness of each is greatly enhanced by the maturity and integration of all ITSM processes. Figure 2-3 depicts key relationships that exist between ITSM KM and the other ITSM processes.

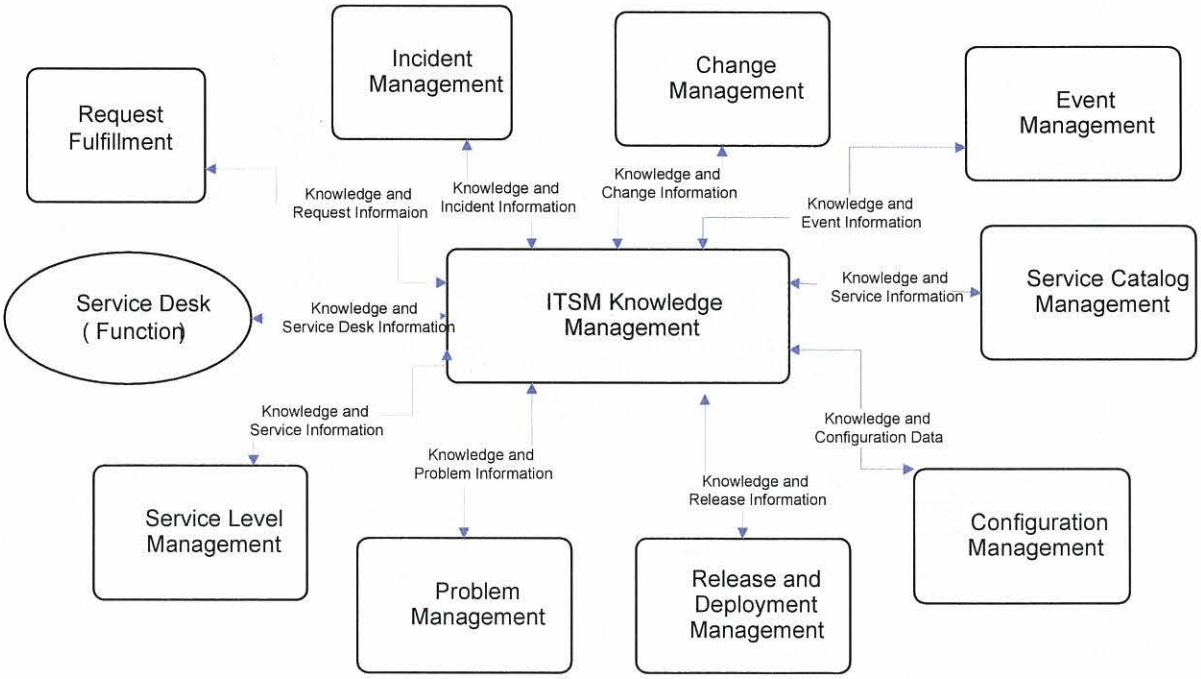

Figure 2-3. ITSM KM Relationships with other Processes

The following list contains descriptions of the ITSM KM relationships (inputs or outputs) depicted in Figure 2-3.

Service Desk (SD) Function

- Knowledge: ITSM KM integrates with Service Desk so that end-users using IT self-service and all tiers of IT support responding to Service Desk activity can leverage ITSM KM for similar activities with solutions.
- Service Desk Information: Service Desk support provides information into the SKMS which becomes widely reusable knowledge. For example, workarounds or resolutions can be captured by the Service Desk team for reuse.

Request Fulfillment (RqM)

- Knowledge: Provides ITSM information for fulfillment of requests, along with broader knowledge and guidance for related service considerations.
- Request Information: Request records, history, status and relationships are provided to the ITSM KM process for insights and broader connection to other processes.

Incident Management (IM)

- Knowledge: Standard methods for addressing incidents are documented in Knowledge Artifacts, ensuring efficient and effective resolution of incidents. Careful documentation of steps needed to resolve incidents can result in lower tier analysts being able to resolve incidents, reducing overall costs.
- Incident Information: All data, metrics and information useful for Incident Management activities must be properly gathered, stored and accessible.

Change Management (ChM)

- Knowledge: Provides information for history, impact and risk analysis to assist with change assessment.
- Change Information: Provides information available regarding Enterprise Change Advisory Board (EntCAB) schedule, agenda, members and decision documents. ChM can also inform the status of changes implemented so that related services and Knowledge Artifacts can be updated.

Event Management (EM)

- Knowledge: Provides information for relationships, impact and integration with other processes and services.
- Event Information: Event data is important input for providing trend analysis and identification knowledge data to assist within proactive Problem Management and Incident Management.

Service Catalog Management (SCM)

- Knowledge: Provides information to support decisions on services, the service catalog content and consumption of services.
- Service Catalog Information: The service catalog along with supporting service information is provided to ITSM KM (e.g., service definition, customers, service tiers, etc.).

Configuration Management (CfM)

- Knowledge: Supports the Configuration Management System (CMS) by linking new and updated Knowledge Artifacts to configuration items.
- Configuration Data: Configuration data, present in the CMS, enables effective decision support and reduces the risks that arise from the lack of proper control of data.

Release and Deployment Management (RDM)

- Knowledge: Provides information on release relationships/integrations with other processes. This includes integration with the definitive media library (DML) to understand licensing and usage requirements.
- Release Information: Provides notice of release activity, outcomes, schedules and detail.

Problem Management (PbM)

- Knowledge: Reliable and accurate information retrieved from the SKMS database is essential to the Problem Management process. PbM staff will be key users and contributors to the Known Error Data Base (KEDB) and the Solutions Database. They are also responsible for ensuring that the information contained in the KEDB and Solutions Database is accurate, timely and uniformly presented across the enterprise.
- Problem Information: Updates and edits of the articles presented in the KEDB will be key to ensuring that the operational forces receive information that is not only dependable but can be used to resolve issues more quickly. This will reduce incident closure times and ensure that customer satisfaction is enhanced. Entry of data into the KEDB and the Solutions Database will be restricted to specific personnel that have received proper training in the content, format and criteria for creating and maintaining Known Errors and Solutions.

Service Level Management (SLM)

- Knowledge: Provides insights to performance, changes in services and makes information available to the service stakeholders.
- Service Knowledge: Existing Service Level Agreements (SLAs), Service Level Requirements (SLRs), Operational Level Agreements (OLAs), Operating Level Objectives (OLOs), Underpinning Contracts (UCs) and past service reports and other historical service information used as input for SLM decisions for a service.

2.3 High-Level Process Model

The following Figure 2-4 illustrates the high level process model for ITSM KM. See Section 4.0 for complete descriptions of the sub-process activities.

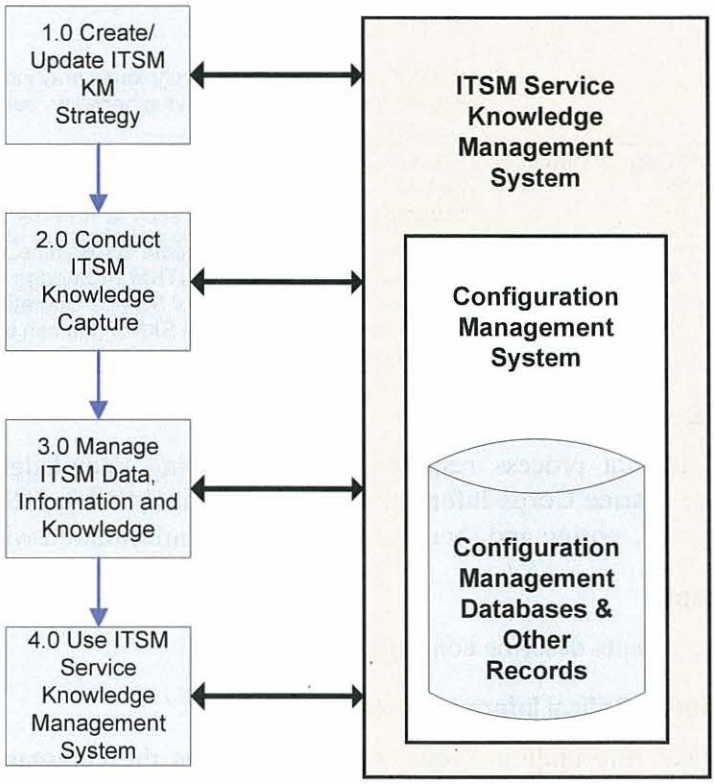

Figure 2-4. High-Level ITSM KM Process Model

Table 2 contains descriptions of each sub-process. Each sub-process number is hyperlinked to its detailed description in Section 4.0, Sub-Processes.

Table 2. ITSM KM Sub-Process Descriptions

Number	Sub-Process	Description
1.0	Create/Update ITSM KM Strategy	An ITSM KM strategy is required for life cycle guidance. The strategy view should cover direct IT staff, users, third party support and others likely to contribute or make beneficial use of the knowledge. The strategy should address the governance model, organizational roles and responsibilities, funding, policies and processes, technology and performance requirements.
2.0	Conduct ITSM Knowledge Capture	During the ITSM KM service life cycle the USMC needs to focus on retrieving, sharing and utilizing their knowledge through problem solving, dynamic learning, strategic planning and decision making. To achieve this, ITSM knowledge needs to be available to other parts of the organization at specific points in the life cycle. Its format must be applicable for those using it and achieve a positive rating of 'ease of use'. ITSM Knowledge capture techniques may include learning styles, knowledge visualization, driving behavior, seminars, webinars and eLearning, etc.
3.0	Manage ITSM Data, Information and Knowledge	ITSM Knowledge rests on the management of the information and data that underpins it. To be efficient this process requires an understanding of some key process inputs such as how the data will be used.
4.0	Use ITSM Service Knowledge Management System	Providing services to customers across time zones, work cycles and geographies requires good ITSM knowledge sharing across all locations and time periods of Service Operations. A service provider must first establish an ITSM SKMS that can be shared, updated and used by its operating entities, partners and customers.

2.3.1 Process Description

ITSM KM is the pivotal process responsible for providing knowledge to all other ITSM processes within the Marine Corps Information Environment (MCIE). ITSM KM is the process for gathering, analyzing, storing and sharing knowledge and information within an organization.

2.4 Key Concepts

The following key concepts describe concepts unique to KM:

2.4.1 Commander's Critical Information Requirements

Commander's Critical Information Requirements (CCIR) is the commander's "need to know immediately" information and response requirements. From MCWP 3-40.2 Information Management, "CCIR are tools for the commander to reduce information gaps generated by uncertainties that he may have concerning his own force, the threat, and/or the environment. They define the information required by the commander to better understand the battle-space, identify risks and to make sound, timely decisions in order to retain the initiative. CCIR focus the staff on the type and form of quality information required by the commander, thereby reducing information needs to manageable amounts." In the context of KM, CCIRs are a basis for setting knowledge priorities.

All commands are required to produce command specific CCIR guidance with detailed IT service management requirements and are required to adhere to the current CCIR guidance of their superior commands. Common CCIR categories are Enterprise Service Management,

Network Defense, Content Management and MCIE, but others may be applicable based upon the commander's requirements.

2.4.2 Service Knowledge Management System (SKMS)

The following Figure 2-5 illustrates the broader aspects of ITSM KM and how it creates knowledge from data in order to facilitate decision making.

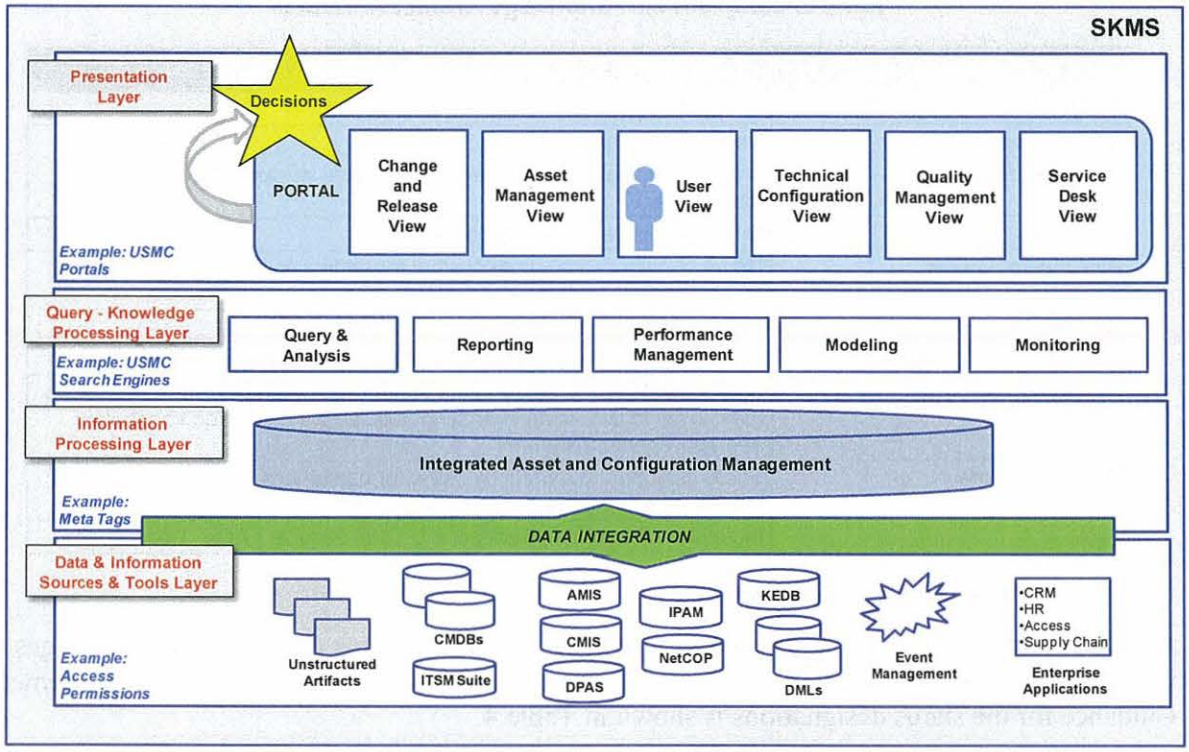

Figure 2-5. MCEN Service Knowledge Management System

The SKMS refers to a collective set of policies, processes, standards and tools designed to manage ITSM knowledge and information. The SKMS stores, manages, updates and presents all information that an IT service provider needs to manage the full life cycle of IT Services. Considerable data may be stored in a central logical repository or Configuration Management System (CMS) and Configuration Management Database (CMDB), which must be managed and presented to the IT service provider (internal or external) to deliver a capability.

2.4.3 ITSM Knowledge Artifact

ITSM Knowledge is stored in units known as ITSM Knowledge Artifacts. Each artifact captures a key facet of knowledge using the appropriate attributes and documents the relevant information for aiding in decisions or actions. For example, an ITSM Knowledge Artifact could be linked to a key issue and contains information for defining a solution to a problem; provide reference data detailing a process, or answering a question. An ITSM Knowledge Artifact could also be a

training video or other types of format. ITSM Knowledge Artifacts will follow a standard format and will be available and accessible by USMC staff based on the appropriate roles and controls.

2.4.4 ITSM Knowledge Artifact Attributes

ITSM Knowledge Artifacts should have standard attributes and details in the database for easy access and search. Typical details that should be included with each ITSM Knowledge Artifact are shown in Table 3:

Table 3. Sample ITSM Knowledge Artifact Attributes

Status	Description
Artifact ID	Unique identifier for artifact in the database
Artifact Title	Name of the artifact
Artifact Version	Artifact identifier for latest version to enable versioning history capabilities
Author	One who creates or writes content
Assignee or Owner	Name of owner who is responsible for artifact across the life cycle for regular review, updates and maintenance
Status	Current status of the artifact
Creation/Modification Date	Timestamps to track dates that artifact was created and last modified
Keywords	Select words and phrases in the content of the artifact that someone is most likely to use when searching, following a controlled vocabulary and appropriate taxonomy
Weighted Score	Score assigned to artifact by users for usefulness and value, as determined by formal weighting algorithm
Type	Indication of the kind of artifact e.g., Self-Service FAQs, Training, etc.

2.4.5 ITSM Knowledge Life Cycle Status

As ITSM Knowledge Artifacts progress through the process, status codes identify the stages of work toward publishing, which is critical for reporting and for continual process improvement. Guidance for the status designations is shown in Table 4.

Table 4. Sample ITSM Knowledge Life Cycle Status Designations

Status	Designations
In Progress	Initial status assigned to at time of creation
Draft	The first status in the workflow
SME Review	Review and edit of artifact by the subject matter expert (SME)
Optional Reviews	Additional review/edits subsequent to SME review
Publish Approval	Final approval status before publication
Published	Published and available to appropriate users
Retired	No longer available for use, but searchable
Closed Version	Earlier version of an artifact that is no longer searchable
Canceled	Artifact not usable or not searchable

2.4.6 ITSM Knowledge Base

An ITSM Knowledge Base is a special kind of database for KM. It is an information repository that provides a means for information to be collected, organized, shared, searched and utilized. It can be either machine-readable or intended for human use.

2.4.7 ITSM Knowledge Strategy

The ITSM Knowledge strategy will identify and plan for the capture of the consequential data and information that will support it. The steps to delivering this include the following:

- Assistance to operations to identify ITSM Knowledge that will be useful
- Design a systematic process for organizing, distilling, storing and presenting information in a way that improves staff comprehension in a relevant area
- Accumulate ITSM Knowledge through processes and workflow
- Generate new ITSM knowledge
- Access to valuable ITSM Knowledge from outside sources
- Capture external ITSM Knowledge and adapt it (data, information and knowledge from diverse sources such as databases, websites, employees, suppliers and partners)

2.4.8 ITSM Knowledge Capture

During the service life cycle the USMC needs to focus on retrieving, sharing and utilizing their ITSM knowledge through problem solving, dynamic learning, strategic planning and decision making. Traditionally knowledge is made available through formal classroom training and documentation. Other techniques include:

- Learning styles — defining the best method of sharing knowledge with different, diverse audiences
- Knowledge visualization — using visuals such as diagrams, images, photographs, etc. to improve sharing and utilization of knowledge
- Driving behavior — ensuring that staff are able to decide on correct actions for retrieval, sharing and utilization that are appropriate for different audiences
- Seminars, webinars and eLearning — using technology-based events tools such as webinars for retrieval and sharing knowledge
- Journal and newsletters — allowing for retrieval, sharing and utilization of knowledge in smaller units

2.4.9 Transforming ITSM Data and Information into Knowledge

Efficient ITSM KM of the information relies on the data and information that underpins it. During data and information management it is important to consider how the data and information will be used:

- What ITSM knowledge is necessary based on what decisions are to be made?
- What conditions need to be monitored?
- What data is available and what is feasible to capture?
- What is the cost of capturing and maintaining data and the value of the data?
- What are the applicable policies, legislation, standards and other requirements?

2.5 Quality Control

2.5.1 Metrics, Measurements and Continual Process Improvement

Continual service improvement depends on accurate and timely process measurements and relies upon obtaining, analyzing and using information that is practical and meaningful to the process

at-hand. Measurements of process efficiency and effectiveness enable the USMC to track performance and improve overall end user satisfaction. Process metrics are used as measurements of how well the process is working, whether or not the process is continuing to improve, or where improvements should be made. When evaluating process metrics, the direction of change is more important than the magnitude of the metric.

Effective day-to-day operation and long-term management of the process requires the use of metrics and measurements. Reports need to be defined, executed and distributed to enable the managing of process-related issues and initiatives. Daily management occurs at the process manager level. Long-term trending analysis and management of significant process activities occurs at the process owner level.

The essential components of any measurement system are Critical Success Factors (CSFs) and Key Performance Indicators (KPIs).

2.5.2 Critical Success Factors with Key Performance Indicators

The effectiveness and performance of processes are measured using metrics-based KPIs which support high level CSFs. The metrics should be monitored and reported upon in order to judge the efficiency and effectiveness of the process and its operation. To the extent possible, metrics should be broken down by service, customer, priority level, etc. and compared with previous reporting periods.

CSFs are defined as process or service-specific objectives that must be achieved if a process (or IT service) is to succeed. KPIs are the metrics used to measure service performance or progress toward stated goals. Not all CSFs will be focused on at the same time.

The following CSFs and KPIs can be used to judge the efficiency and effectiveness of the process. Results of the analysis provide input to improvement programs (i.e., continual service improvement).

Table 5. ITSM KM Critical Success Factors with Key Performance Indicators

CSF #	Critical Success Factors	KPI #	Key Performance Indicators	Benefits
1	Effective acquisition and capture of ITSM knowledge	1	Decreased life cycle time to capture and publish new ITSM knowledge **Method:** 100% inspection **Calculation:** Average time to capture and publish an artifact (end-to-end) in current measuring period/Average time to capture and publish an artifact (end-to-end) in last measuring period X100	Provides visibility to efficiency of ITSM knowledge process for capture and updates

		2	Improvement in efficiency and usefulness of artifacts **Method:** 100% inspection **Calculation:** Number of artifacts that were rated high (2-5) in current measuring period/Number of artifacts that were rated high (2-5) in last measuring period X100	
		3	Increased number of ITSM Knowledge submissions by group **Method:** 100% inspection **Calculation:** Number of artifacts submitted by group in current measuring period/Number of artifacts that were submitted by group in last measuring period X 100	
2	Effective delivery and leverage of up-to-date data ITSM knowledge to add value	4	Increased percentage of incidents solved using available ITSM Knowledge Artifacts **Method:** 100% inspection **Calculation:** Number of artifacts accessed and linked for incident resolutions in current measuring period/Number of artifacts accessed for incident resolutions in last measuring period X 100	Establishes value of ITSM knowledge by showing SKMS usage and accuracy
		5	Increased number of times that SKMS is accessed **Method:** 100% inspection **Calculation:** Number of times SKMS is accessed in current measuring period/Number of times SKMS is accessed in last measuring period X 100	
		6	Increased accuracy of ITSM Knowledge Artifacts submitted **Method:** 100% inspection **Calculation:** Number of times newly submitted artifacts were tagged as "inaccurate" in current measuring period/Number of times newly submitted artifacts were tagged as "inaccurate" in last measuring period X 100	

3	Effective monitoring, accessing and reporting of KM	7	Increased scores in regular customer satisfaction surveys for use of KM **Method:** 100% inspection **Calculation:** Average customer satisfaction scores on artifacts in current measuring period/Average customer satisfaction scores in last measuring period X 100	Provides accountability of ITSM knowledge related to customer and system performance effectiveness
		8	Increase in accessing and using reports on KM **Method:** 100% inspection **Calculation:** Number of times reports are accessed in current measuring period/Number of time reports are accessed in last measuring period X 100	
		9	Increase in ITSM Knowledge Artifact timely review and updates **Method:** 100% inspection **Calculation:** Number of artifacts that were reviewed and updated within requested time period in current measuring period/Number of artifacts that were reviewed and updated within requested time in last measuring period X100	