Knowledge Management Solution

KMS

Sample Excerpt

Power User Handbook

TABLE OF CONTENTS

Introduction

Overview

The Knowledge Management Solution (KMS), a browser-based application, enables PGI activities to draw on collective enterprise knowledge to deliver fast, accurate and consistent solutions to queries via the Service Desk application on a global basis.

KMS is used to help resolve incidents and problems, and contribute new knowledge quickly and efficiently within structured search and authoring processes. Knowledge Session templates provide individual PGI Knowledge Areas the capability to customize KMS to their unique interface, content and navigation requirements.

KMS provides functionality to:

- Perform Knowledge Base searches with a cognitive-based search engine
- Create new knowledge within a formal user-based authoring workflow
- Feedback comments and changes on existing knowledge content
- Collaborate with Subject Matter Experts (SMEs) in PGI Areas of Expertise
- Manage knowledge within a structured PGI Taxonomy and Knowledge Base scheme
- Segment Knowledge Base and search and contribute processes by individual PGI organization.

KMS Application Components

KMS is comprised of three modules: KMS Agent, KMS Architect, and KMS System Administrator.

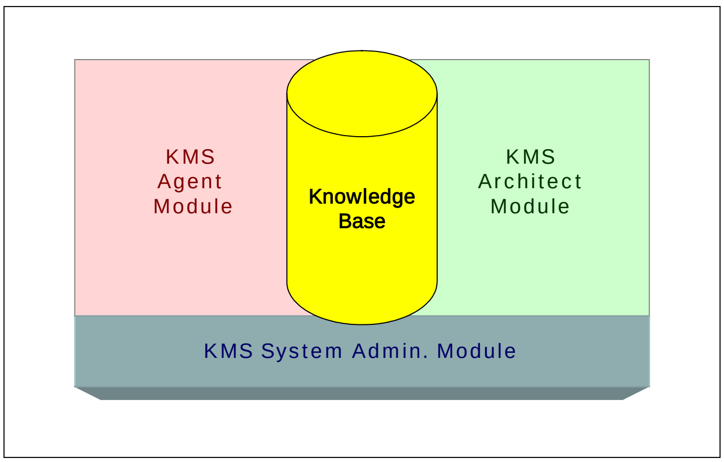

Figure 1 – KMS Application – Logical View

- **KMS Agent** (User Role) **-** empower users to respond quickly and consistently to end user incidents and problems and enable contribution of new knowledge and suggested changes to existing knowledge content. Key features include:
  - ➢ Two-way content transfer integrated with Service Desk application
  - ➢ Personalized user interface with customized knowledge sessions templates
  - ➢ Integrated knowledge session with search and contribute processes
  - ➢ Knowledge retrieval based on content matching strength and weight rules
  - ➢ Feedback for suggested changes and removals of existing Knowledge Objects

- **KMS Architect** (SME & Technical Writer Roles) - enables authoring team members to create new and manage existing knowledge objects, concepts, and experiences. Key features include:

  - Segmented knowledge base with multiple views for PGI individual Knowledge Areas
  - User Profiles and Knowledge Sessions
  - Knowledge Base Library for Knowledge Objects, Concepts, and Experiences
  - Knowledge Authoring Workflow for SMEs to review, and approve new content and suggested changes and, Technical Writers to edit knowledge content, including existing knowledge objects and new content contributions.

- **KMS Administrator** (IM Role) - facilitate configuration and management of the KMS Agent and Architect Modules and Servers. Key features include:

  - KMS configuration and settings for KMS Agent, KMS Architect, and Knowledge Base
  - System security Environment to manage user profiles, roles, and permissions.

Knowledge Management Environment

KMS's knowledge management environment includes the KMS Agent and Architect Modules and Knowledge Base integrated with the Service Desk Application. Shown below is the KMS search and contribute process integrated with the Service Desk application.

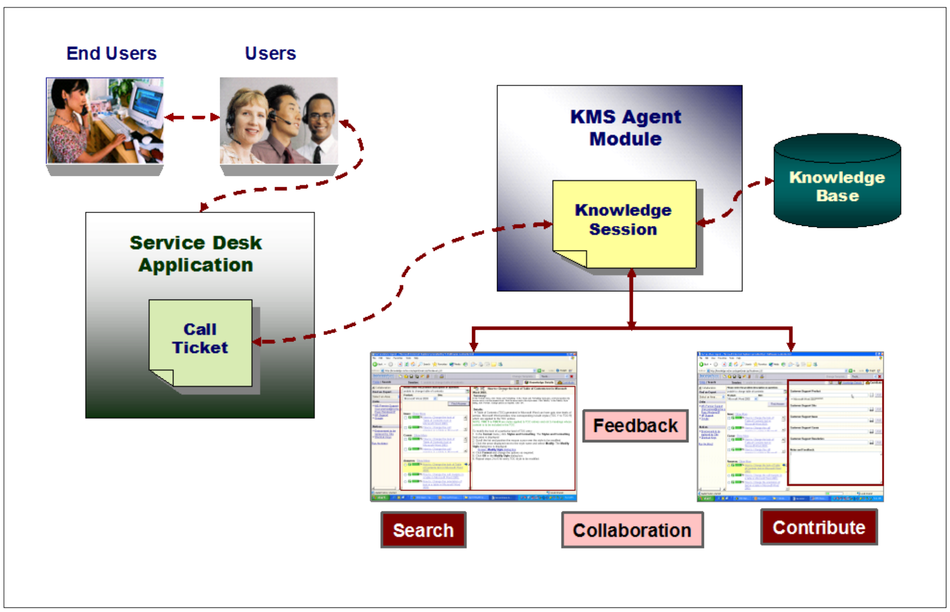

Figure 2 – KMS Site– Search and Contribute Process

A description of the key components follows.

- **KMS Search Process**

  KMS provides a search engine (cognitive-based) that enables users to quickly locate and identify the most appropriate content match.

To resolve incidents and problems, users enter the description in their own words and KMS retrieves the matches with the highest success probability. The self-learning search engine continuously learns and improves with each user search transaction.

- **KMS Knowledge Authoring Workflow Process**

  KMS provides KMS Agent users and KMS Architect users (SMEs and Technical Writers) the capability, based on their role, to contribute, review, edit and/or approve new or changed content.

- **Knowledge Base**

  KMS provides a Knowledge Base to store knowledge content in the form of Knowledge Objects Concepts, and Experiences organized by specific Knowledge Areas. The Knowledge Base is populated within a PGI supported Service Taxonomy.

- **Service Desk System - Integration**

  KMS is integrated with the Service Desk application and is launched from a Service Desk Call Ticket. Users save successful Knowledge Session searches as Experiences in the KMS Knowledge Base with the associated description and ID automatically sent to Service Desk's database and appended to the original Call Ticket. Users are able to access and view the saved Experiences later from Service Desk or KMS via the Action Menu (Resume Knowledge button)

KMS Technical Components

KMS technical environment includes:

- **Knowledge Server:** houses the search engine and coordinates the flow of information among the KMS Agent, Knowledge Base, search engine, and the Service Desk application
- **Knowledge Base:** stores PGI supported Service content
- **Web Server:** houses KMS Agent application and provides access to the knowledge server, the Knowledge Base, and the Service Desk application

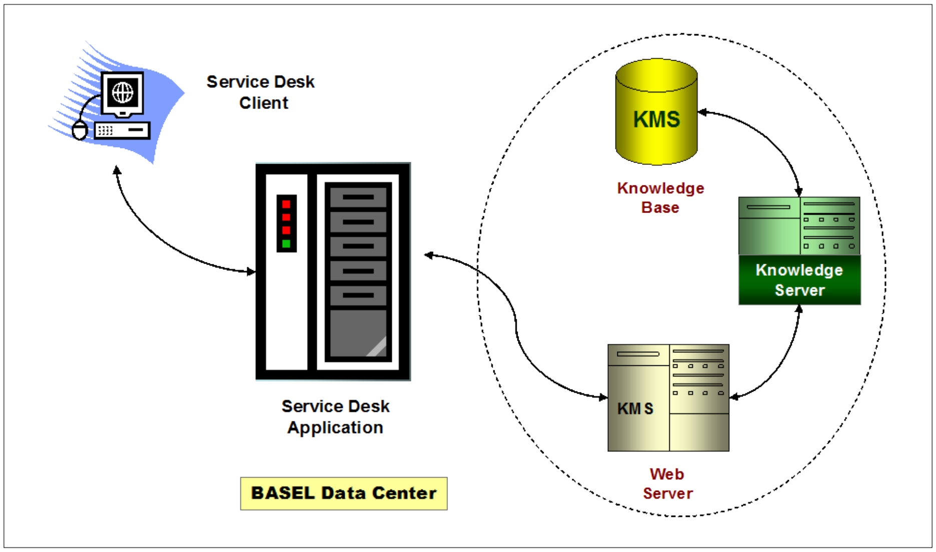

Figure 3 – KMS Integrated with Service Desk

PGI sites deploying the Service Desk application use the KMS integration version, as illustrated above.

KMS is available in two technical approaches, including fully integrated with Service Desk, and direct access from Web application.

KMS Search Calculation Rules

KMS search calculation rules are outlined below:

Type	Rule	Calculation Rules	Display
Search Match Strength	Match End-Search String to Concept Names within KMS Knowledge Base and Calculate and Display Search Strength in % and Bar	**a.** Search results with all words in end-user search string matching with a Concept Name – this is calculated as a 100% Strength indicator and Bar **b.** Some search string words match with a Concept Name – this is calculated as a < 100% Strength indicator and Bar.	Match Type Icon (Experience and Fuzzy) Strength Bar Strength %.
Pick List Concept List Order	Display Concept Names in Answer Pick based on Concept Weight	Concepts listed in descending order, by weight in Pick Lists. Weight is determined by the Count and Weight of saved Experiences (Knowledge Objects and Concepts)	Solution Pick List
Save Experience	Save Experience – in Knowledge Session	Add I (one) as a count to the particular Experience's count and 1 (one) or a predetermined value to the Experience Weight (Weight = Count X Value)	No Display on Screen – result is reflected in the above KMS Match and Display Activities

Figure 4 – KMS Calculation Rules

Knowledge Area Architecture

The Knowledge Area Architecture comprises the key KMS Agent functions configurable by individual PGI Organization. (For example, PGIC, PGIN and PGIE)

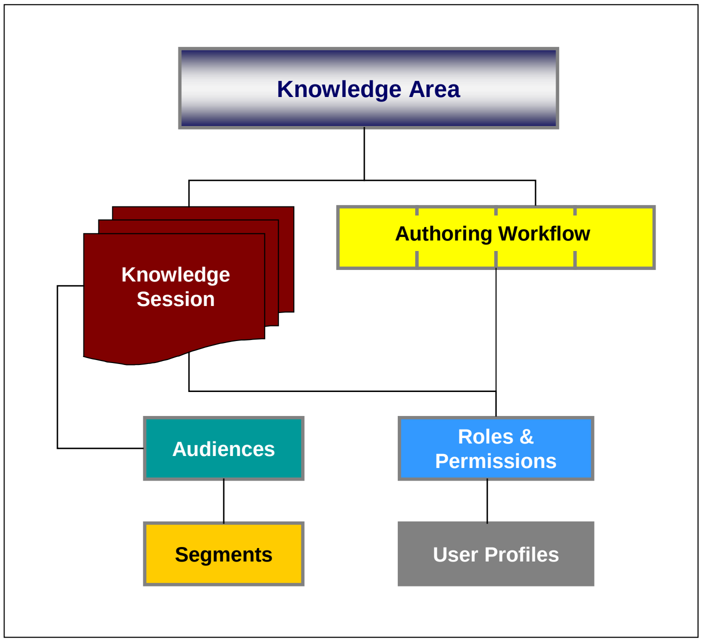

Figure 5 – Knowledge Area Architecture

A description of the Knowledge Area Architecture components follows:

- **Knowledge Area** - specific set of knowledge and associated processes within KMS managed by a named PGI organization, for example, PGIC, PGIN, and PGIE.
- **Knowledge Session** - primary system interface facility for KMS Agent users. In this activity, users have the capability to conduct knowledge base searches, identify SMEs / contact data, and contribute new knowledge and feedback on existing content to the authoring workflow. Knowledge Areas can provide one or more Knowledge Sessions.
- **Authoring Workflow** – structured sequential steps that guide initial submission of content by users and SMEs for import to KMS Knowledge Base; steps are customizable to user business requirements. A Knowledge Area has one Authoring Workflow.
- **Audiences** - group of users with permission to access and view the same Knowledge Base content. For example, when considering Audience of level 2 users, a Solution Concept could include a more detailed description or more complete instructions than the equivalent Concept presented to an Audience of level 1 users.
- **Segments** – users restricted access to specific Knowledge Base content. For example, Account levels can be used to limit access to restricted knowledge, allowing only "priority" users to view the allowable content.
- **Roles** – contain Permissions assigning users access to allowed system functions. A user's Roles determine the actions he or she is allowed to perform.
- **Permissions** - method of controlling users' access to specific system functions. To perform a given function, the user requires a Role that includes the appropriate Permission(s).
- **User Profiles** – record of a user's security assigned Roles and Permissions.

KMS Knowledge Framework

Overview

The KMS Knowledge Framework is a knowledge base scheme comprised of a Taxonomy, Knowledge Architecture, and Knowledge Mapping components, as shown below.

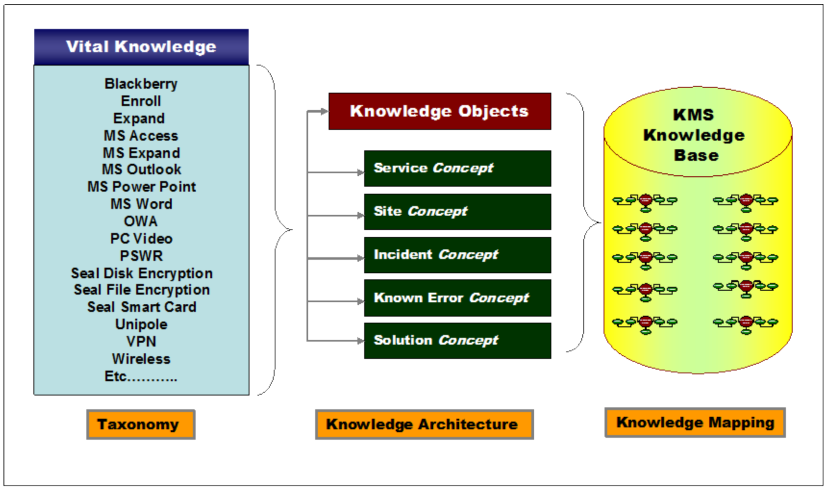

Figure 6 – PGI Knowledge Framework

The Knowledge Framework supports the scheme to populate the Knowledge Base with PGI supported Service Knowledge Objects and Concepts, in alignment with the approved PGI Taxonomy. Knowledge Objects and Concepts are created within the KMS Agent and Architect Modules and processed through the Authoring Workflow process in the KMS Architect Module.

Knowledge Framework Components

- **Taxonomy**

  The **Taxonomy** is a hierarchy of subject matter content for PGI supported services. A high-level view of the taxonomy is presented below.

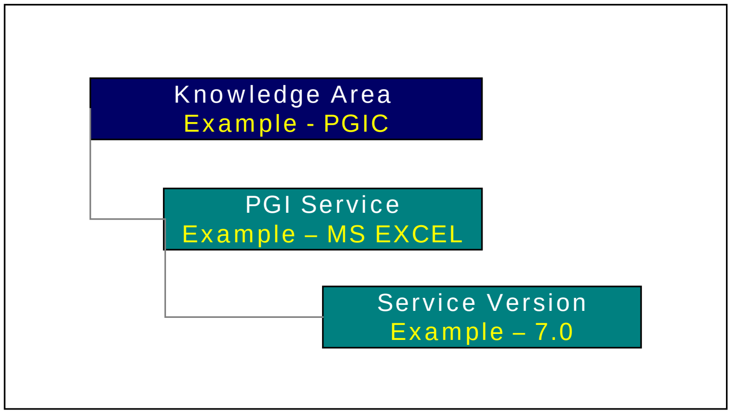

Figure 7 – Taxonomy Outline

The Taxonomy provides the structure to ensure that the Knowledge Base is being populated and maintained with relevant and appropriate content.

- **Knowledge Architecture**

The Knowledge Architecture includes **Knowledge Objects, Concepts** and **Experiences**.

➢ **Knowledge Objects**

Knowledge Objects are comprised of individual Concepts that have little use to resolve incidents and problems when viewed separately. When a group of Concepts is associated for the first time, they form a Knowledge Object that creates a complete solution for an end user's incident or problem.

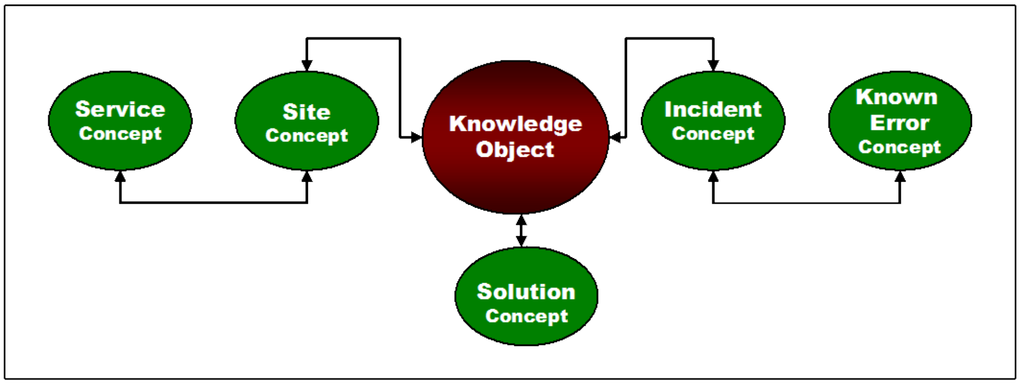

Figure 8 – Knowledge Objects – *An Example*

➢ **Concept Types and Concepts**

Concept Types and Concepts provide the key ingredients of Knowledge Objects.

❖ **Concept Types -** categories of similar Concepts that are the key content types in Knowledge Objects

PGIC and PGIN have implemented a Knowledge Objects / Concepts Format with the following Concept Types:

Concept Type
Incident (or Problem)
Service
Site
Known Error
Solution

Figure 9 – Concept Type – *An Example*

Service and **Site** Concepts Filters narrow the search. **Incident (or Problem)** and **Known Error** Concepts support the selection of an appropriate resolution. **Solution** Concepts provide the content to resolve an end user's incident or problem or answer a 'how to' question.

To understand the use of Concept Types, consider the following problem called into the help desk by an end user:

How do you resolve the Error Message: Incorrect Password in MS Outlook?

An effective technique in analyzing end-user incidents and problems is the ability to break the problem down into distinct parts to understand the question as a whole. The breakdown of the above incident is illustrated below.

Concept Type	Question Segment?
Incident	What is the end user's specific incident?
Service	What software, hardware or other device is being used?
Site	Is this a local PGI site service?
Known Error	Is there a known error for this incident?
Solution	What is the resolution or the answer?

Figure 10 - Concept Types & Question Segments

- **Concepts** include information that has been contributed to the Knowledge Base by users and SMEs within specific Concept Types (as shown above).

  Concepts include the following content:

  ✓ Concept Names (Metadata) – used as the search point
  ✓ Content Short Descriptions
  ✓ Content Long Descriptions
  ✓ Attachments – From internal PGI Files and external Web sources

  The below list (within their respective Concept Types) represent the Concepts identified for the MS Outlook error message problem outlined above.

Concept Type	Concept
Incident	Error Message: Incorrect password
Service	Microsoft Outlook 2003
Site	N/A – this is a Global Application
Known Error	End user entered password wrong
Solution	Re-enter password

Figure 11 – Concept Type & Concept – *An Example*

- **Experiences** are saved Knowledge Sessions (resulting from successful user searches) that represent specific Knowledge Object instances stored within the Knowledge Base. They include an array of Concepts, within the Knowledge Object, that are associated during the building of the Knowledge Object or an Experience.

- **Relationship: Knowledge Objects and Experiences**

An Experience encompasses two distinct parts - **Knowledge Object** and **Experience**.

- **Knowledge Object -** original association created among an array of Concepts and created when individual Concepts are linked together for *the first time*.

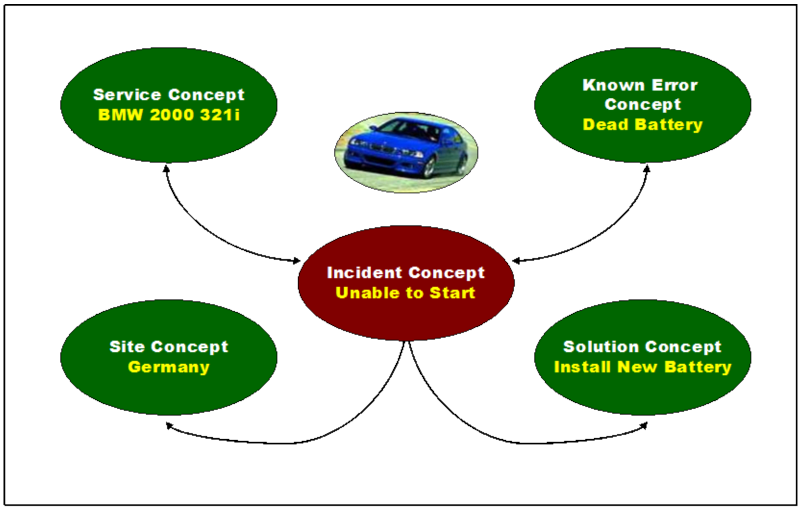

Figure 12 – Knowledge Object with Associated Concepts

- **Experience -** an occurrence, resulting from saving a Knowledge Session with a collection of Concepts that *have previously been linked together* as a Knowledge Object

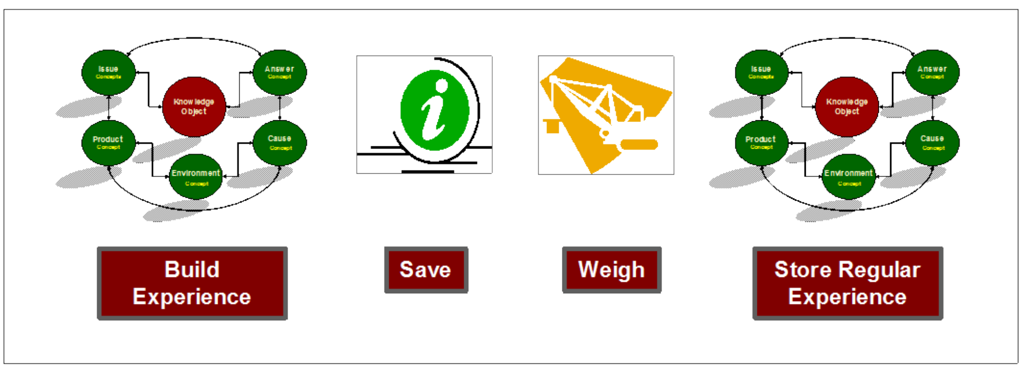

Figure 13 - Knowledge Object as Experience

A saved Knowledge Session saves a specific Knowledge Object as an Experience on the first save. Upon this occurrence, the new Experience is given a weight of one (1) to match the count of one (1) of the saved Experience associated with the particular Knowledge Object. The weight and count should always be the same unless manually altered.

Subsequent saves of the same Experience (by users) provide an incremental weight increase to the Experience. The weight value is predetermined and set-up in KMS System Administration Module.

- **Valid Experience**

  A Knowledge Session's Knowledge Object is saved as an Experience if it is deemed valid. A valid experience is described as a Knowledge Object that includes at a minimum, an Incident (or Problem) and Solution Concept.

- **Knowledge Mapping** is the process of indexing and populating the Knowledge Base as outlined below:

  - **Indexing** – designing and implementing a customized Knowledge Base index structure based on the PGI Service supported hierarchy Taxonomy.
  - **Mapping** – importing and storing user and SME authored Knowledge Objects and Concepts in alignment with the approved PGI Taxonomy.

Knowledge Sessions

Overview

A Knowledge Session is the primary system interface activity for KMS Agent users. In this activity, users are provided the capability to conduct knowledge base searches, identify SMEs / contact data, and contribute new knowledge and feedback to the authoring workflow.

The system creates a 'snap shot', of the current Knowledge Base, upon the user starting a Knowledge Session. Any changes made to the Knowledge Session while a user is engaged are not reflected in the KMS Knowledge Base until the user saves or closes the current Knowledge Session.

Knowledge Sessions are configurable by a particular Knowledge Area, with Knowledge Session Templates (KST), for user interface format, functionality, and content preferences. Employee Roles and permissions are associated with specific KSTs.

Key KMS Agent activates configurable with KSTs include:

- Knowledge Base Text Searching
- Concept Matching and Selection Process
- Frequently Asked Questions (FAQs)
- Most Useful Solutions (MUSs)

Knowledge Session Template **Common Properties** support all Knowledge Areas and include:

Item / Activity	Configuration / Setting
Knowledge Area	One or multiple Knowledge Areas
KMS Application	One or both Modules - KMS Agent and KMS Architect
Employee User Roles	Appropriate KMS Roles for Knowledge Area employees
FAQ / MUS Inclusion	FAQ and / or MUS

Figure 14 – Common Properties

Search and Concept Matching activities are customizable within Knowledge Area templates as shown below:

Item / Activity	Configuration / Setting
Concept Types	All or Specific Concepts Types
Match Types	Match types for Concepts & Knowledge Objects– Experience, Fuzzy, and Text.
Maximum Results	Maximum number of items for display in Pick List
Minimum Relative Strength	Minimum relative strength for display in Pick Lists
Minimum Strength	Minimum strength required for display in Pick Lists.
Numeric Strength Indicator	Numeric values of the match strengths shown in the Pick Lists.
Pick List Order	Location of Pick List within the Top or Middle of Pane
Search Weight	Search Weight used by Search Engine when activating a Concept selected from a Pick List or Filter.
Selection Mode	Number of items selected in a Pick List.
Selection Required	Specifies whether a user must make selection from a Pick List to Activate a Saved Experience
Strength Bar Indicator	On/Off Flag - Strength bars shown in the Pick Lists.

Figure 15 - Text Searching & Concept Matching and Selection Process

FAQ and MUS Search activities are customizable with Knowledge Session Templates as shown below:

Item / Activity	Configuration / Setting
FAQ / MUS Group Size	Number of items for display
Filter List	Select and label 2 filters
Filter Mode	Yes/No Flag for Drill Down filters
Include	Yes/No Flag for Corresponding Type of Lists Inclusion
List Type	Display items as Knowledge Objects or Concepts
Match Types	Match types for Concepts & Knowledge Objects– Experience, Fuzzy, and Text.
Maximum Results	Select maximum number of items for display in Pick List
Minimum Relative Strength	Minimum relative strength required for display in Pick Lists.
Minimum Strength	Minimum strength required for display in Pick Lists.
Search Weight	Search weight used by Search Engine when activating a Concept selected from a Pick List or Filter.
Selection Mode	Number of items selected in a Pick List.
Selection Required	Specifies whether a user must make selection from a Pick List to Activate a Saved Experience

Figure 16 - MUSs / FAQs Search

Knowledge Visibility

Visibility of Knowledge Base content to users in the KMS Agent and Architect Modules is determined by the Roles assigned to User Profiles and Properties of specific knowledge items. Knowledge visibility is based on:

- User's assigned Knowledge Area (PGIC, PGIN or PGIE)
- Knowledge Session Templates used in the Knowledge Session
- Knowledge State of specific Concepts and Knowledge Objects (Current, Pending and Obsolete)
- First Authoring Workflow Step in which the User have access to Knowledge Object
- Audiences are used to display available knowledge to a particular user group (if Audience is activated)
- Segments of the Knowledge Areas which users has access (if Segmentation is used)

KMS Search Approach

Overview

The KMS Search Approach incorporates a Knowledge Base text search and a Concept Name matching and selection process of multiple Concepts, to resolve end user incidents and problems as illustrated below.

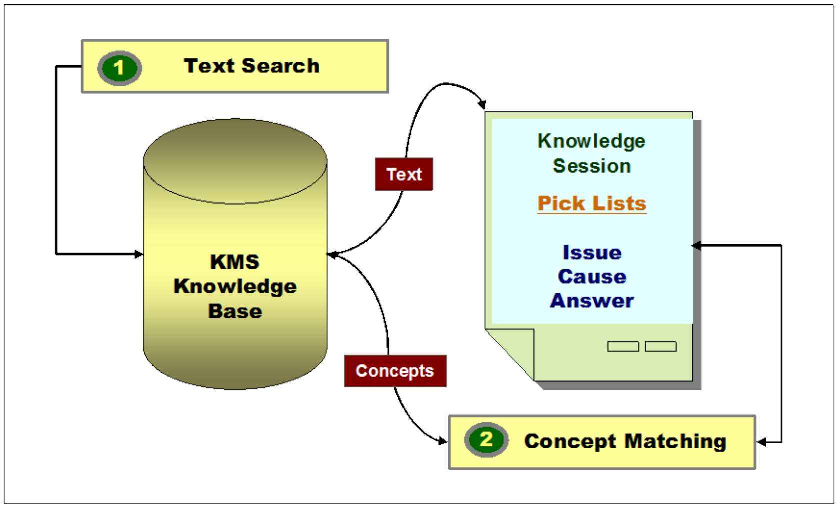

Figure 17 – KMS Search Approach

The KMS Search Approach commences with a text search of the end user's incident description (as entered on a Service Desk Call Ticket) with Concept Names within the Knowledge Base. After retrieval and placement of the initial retrievals of matching Concepts, on appropriate Pick Lists, actions to narrow the search and select the correct answer include filtering, matching and selecting associated Concept are initiated by the user.

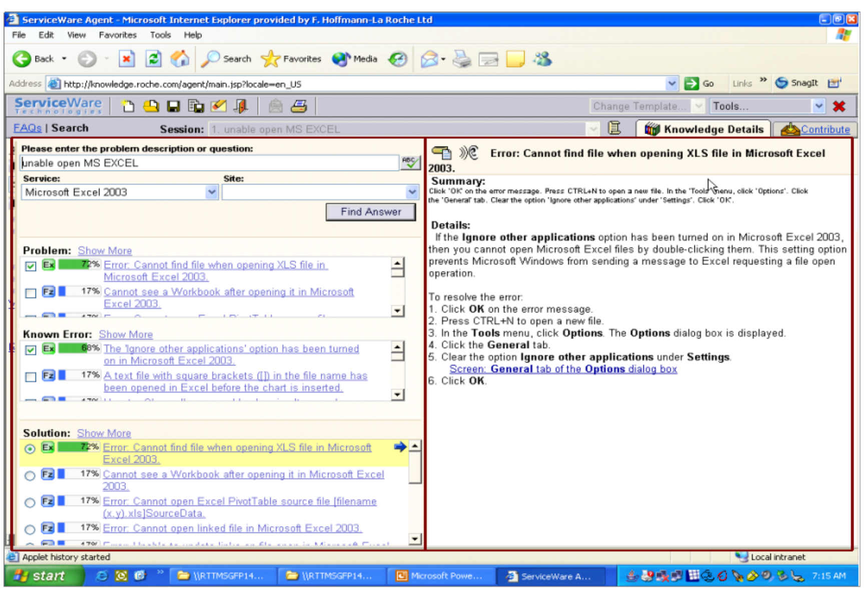

Figure 18 - KMS Search and Details Pane

The KMS Search Page includes Search and the Knowledge Details Panes as shown above.

The KMS Search Pane displays the incident (or problem) search field, Filters (Service and Site), and the Pick Lists of retrieved Concepts. The Knowledge Details Pane shows the Knowledge Object or Concept.

KMS Five Step Search Methodology

The Five Step Search Methodology as outlined and detailed in forward pages provides the roadmap for users undertaking a knowledge base search.

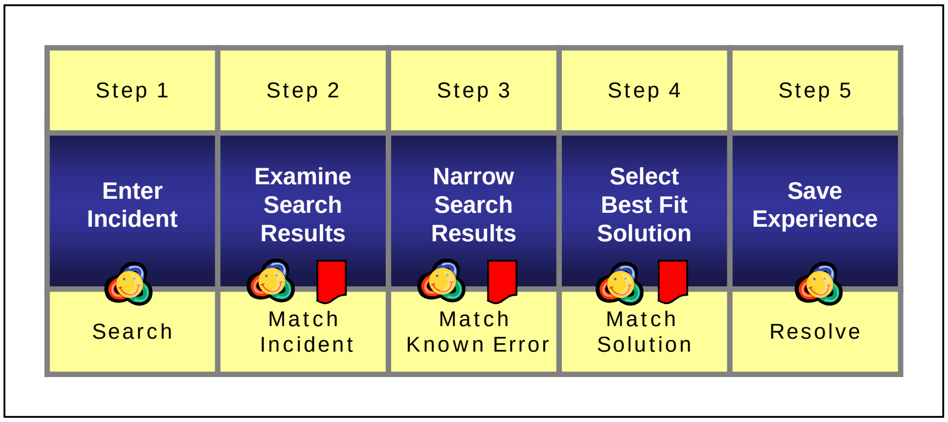

Figure 19 – KMS Five-Step Search Methodology

The key objective of the Five Step Search Methodology is to locate and match the Concepts necessary to build an **Experience** that resolves the end user incident (or problem). The methodology uses a combination of explicit and tacit knowledge, as represented by the icons above – 'document' – explicit knowledge and 'happy face' – tacit knowledge. The methodology involves the user:

1. Entering incident (or problem) search string
2. Examining retrievals and matching end user incident (or problem) with an Incident Concept
3. Narrowing search results by matching the Incident Concept with an appropriate Known Error Concept.
4. Selecting an answer by matching the Issue and Cause Concepts with a 'best fit' Answer Concept.
5. Saving the matched Issue, Cause, and Answer Concepts as an Experience.

Step # 1 - Enter Incident and Conduct Text Search

Users enter their incident description (in the Service Desk Call Ticket Description Field) and select Service and Site items from the Filters to limit possible hits. Before the search begins,
the Search Engine reviews the text string and automatically triggers the below system edit activities.

a. Divides text into words, using the configured delimiters (for example, . , ; : ( ) [ ] { } " \/ ? ! & %$ # @ + = *).
b. Removes endings -ed, -s, and -ing (stemming) from individual words, provided that the resulting word will satisfy the configured minimum word length (for example, endings would not be stripped from red and being, but would be stripped from entered, printing, and prints).
c. Ignores words with fewer than the configured minimum word length – 3 character words
d. Ignores "scrub words," such as <u>a, and, and the</u>, which do not add meaning to your search.

Figure 20 - KMS Search Process Rules

The initial search in KMS Agent is a text search. Text searches are matched to Concept Names (Metadata) in the Knowledge Base as follows:

- **Word Matching** - Number of words in the text that exactly match the Concept Name or Synonym - The more words that match, the greater the strength.

  - Word matching examines the individual words in a search string. For each word in the search string that matches a Concept Name, the strength of the Concept is based upon the type of word matched. There are four types of word matches - Exact Word name, Exact Synonym, Partial Word name, and Partial Synonym.

- **Phrase Matching** - Length of the search string in the text that matches the Concept Name or Synonym - The longer the string, the stronger the match.

  - Phrase matching occurs if the search string contains at least two words. If a match is found, the strength of the Concept is based upon the type of phrase match identified - Exact and Partial matching.

- **Text Placement** - Placement of the entered text within the Concept Name or Synonym - If the words in the text appear near the beginning of the Concept name or Synonym, the match is stronger than if they appear near the end.

Step # 2 - Examine Search Results and Match Incident Concept

In this step, the Search Engine displays the Concept Names whose words or synonyms match the entered text, in the **Incident, Known Error and Solution Pick Lists** resulting from the text search conducted in Step 1, with selected Filters (Service and Site)

The system determines which Concept Names to display on a Pick list by considering the initial text string and the Filter and Pick List selections and evaluates whether matches exist between them. Each Concept includes a **Match Icon** that indicates the match type – **Text** (Yellow), **Experience** (Green Path)**,** and **Fuzzy** (Blue Path).

All Concepts displayed in the Pick Lists **Strength** is determined by the following:

- **Strength Bar / Strength %** (Shown on the Pick List) – displays strength of text search string to the matched Concept name or Synonym. The Strength Bar length and Strength %, shown to the left of the displayed Concept, on the Pick List indicates the relative strength of the match.

Answer Concepts displayed in the Pick Lists are ranked by **Weight** as determined by the below:

- **Weight** (Not shown on the Pick List) - weight of matched Concept name, based upon the Concept's search history, determines the placement order of retrieved Concept Names on the Answer Pick List.

If the strengths of multiple Concept Names are the same, they are sorted by their names in **ASCII** order (most special characters, numbers, upper case, lower case, additional special characters)

When the user matches the end user incident with an Incident Concept Name, KMS automatically searches the Knowledge Base with the Incident Concept name as the search string, and updates the Pick Lists. All Concept Name matches retrieved indicate that they been previously associated in Knowledge Objects or Experiences and displayed on the Pick Lists as either an Experience or Fuzzy associated match. (See Definitions below)

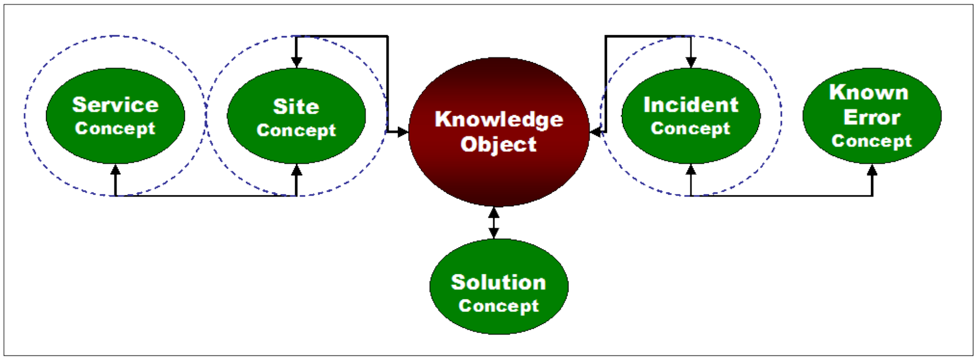

Figure 21 – Match Incident Concept

In the above figure, the Service and Site Concepts are circled to indicate that they were selected from the Filters and associated with the building of an Experience commencing in Step # 1. The Incident Concept is circled to show that the Incident Concept was matched and selected, as it was the best match with the end user incident description.

Successful Incident Concept Name selection allows substantive content to be associated with the Experience being built within the Knowledge Session. The best match is an Experience Match that follows the Green Path. Matching Concepts in this and subsequent steps accomplishes the following:

- Narrows the search and guides the user to the appropriate Known Error and Solution Concepts.
- Updates Pick Lists to show use of Experience and Fuzzy matches with selected Concepts
- Moves selected Concepts to the top of particular Pick List (if it is not already in that position)
- Places selected Concepts on the Knowledge Session Transcript.

Searches that match with the Incident Concept are referred to as **Associative Matches.** There are two types of Associated Matches – **Experience** and **Fuzzy** as described below.

- **Experience Matches**

  An Experience Match indicates that the matching Concept and the selected Concept(s) have been used previously together in a Knowledge Object to solve an incident (or problem). This is the type of match the Search Engine attempts to make with its current content by asking, **"Has this happened before?"** Experience matches appear only after at least one Concept is selected and is represented by a green strength bar and the Experience Match Icon Ex.

  Upon selecting Concepts that return Experience matches, all Concepts are recalculated with their match icons, strength bars and strength %, weight, and displayed in the respective Pick Lists.

- **Fuzzy Matches**

  A Fuzzy Match indicates that the matching Concept and some *but not all* of the selected Concepts have been used together previously in a Knowledge Object. Fuzzy matches will only appear after two or more Concepts are selected and represented by a blue strength bar and the Fuzzy Icon .

  The below table highlights the types of Concept matches supported by KMS:

Match Type	Icon	Bar Color	Description
Text		**Yellow**	One or more words in the entered text are the same as, or similar to, the name of a Concept, or one of its Synonyms.
Experience		**Green**	All of the Concepts currently selected in a Knowledge Session occur together in a Knowledge Object.
Fuzzy		**Blue**	Some, but not all, of the Concepts currently selected in a Knowledge Session occur together in a Knowledge Object, but describe a significantly different situation.

Figure 22 – Search Concept Matches

Step # 3 - Narrow Search Results and Match Known Error Concept

In this step, the user continues to build the Experience by narrowing the search by matching the Incident Concept (Step # 2) with a supporting Known Error Concept.

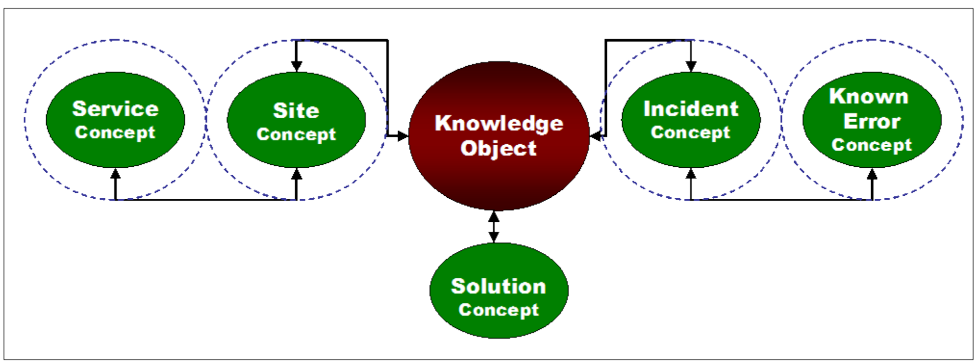

Figure 23 - Match Known Error Concept

In the above figure, the Service, Site, and Issue Concepts are circled to show that they were matched in Steps 1 and 2.

When the user matches and selects the Incident Concept with a Known Error Concept, KMS automatically searches the Knowledge Base with the Known Error Concept name in the search string, and reorders the Pick Lists. All matches retrieved indicate that they are Concepts that been previously included in an Experience and are displayed on the Pick Lists as an Experience or Fuzzy associated matches.

If the search is a 'how to' question without an underlying known error, the Known Error Concept is passed over and the user goes direct to selecting a Solution Concept. One indication that there is no Known Error Concept is that after selecting an Incident Concept, no Known Error Concept is displayed within Green Path matches.

At any time during the search process, the user is able to provide feedback about whether any of the Concepts displayed in the Pick Lists need change, enrichment, or deletion. The feedback is recorded in a Notes for Concept.

To access the Note's template, the user clicks on the Concept (for feedback) and subsequently clicks on the Ear icon over the Concept display pane. Upon completion of the Note, it is saved; the system automatically flags and sends the note to the KMS Architect module for review and disposition by the responsible SME.

Step # 4 - Select a Solution by Matching the Incident and Known Error Concepts with a 'Best Fit' Solution Concept

In this step, the user completes the search by matching the Incident and Known Error Concepts (selected in Step # 2 & 3) with a 'best fit' Solution Concept.

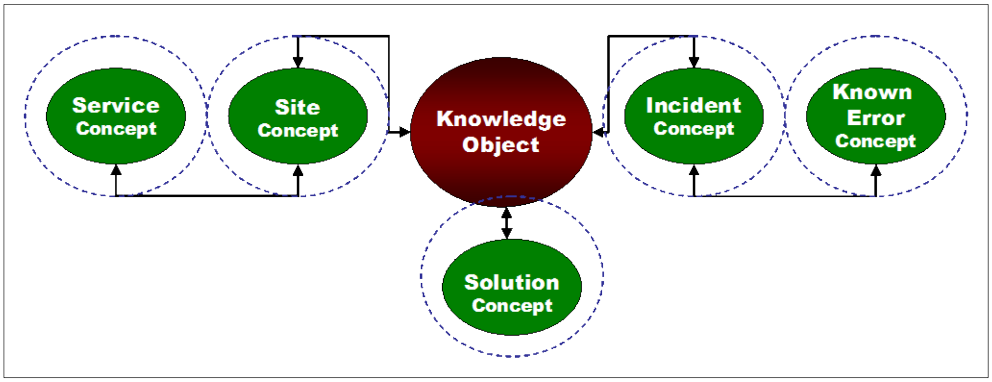

Figure 24 - Complete Experience Build

When the user matches the previously matched Known Error Concept with a 'best fit' Solution Concept, an Experience is in the build process. A valid experience, at a minimum, must consist of an Incident and Solution Concept.

The selection of the Solution Concept and the building of the Experience are guided by:

- The Search Engine identifying and associating all Experience Concept matches on the Green Path. (use of Explicit Knowledge)
- The user's 'know how' are vital in selecting the correct Concepts for inclusion within the Experience.(use of Tacit Knowledge)

In summary, KMS provides previously used Experiences (Explicit Knowledge) that are qualified for use by the user's own knowledge and skills to resolve end user problems. In Knowledge Management terms, this represents the combination of Explicit and Tacit knowledge to solve problems or answer questions.

Step # 5 – Save the Matched Concepts as an Experience

In this step, the user reviews the Solution Concept Pick List and selects the most likely solution to the incident, based upon the initial text search, filters' used, and matching of the Incident and Known Error Concepts in the previous Steps four steps.

After the selection of the Solution Concept, the user saves this Concept and the other Concepts matched in previous steps, as a Knowledge Object. Saving a Complete Knowledge Session creates an Experience, which preserves the association among the Concepts matched in the Knowledge Session. If the set of selected Concepts has not been saved previously, a new Knowledge Object is created.

Upon this occurrence, the new Experience is given a (predetermined) weight of one (1) to match the count of the saved experience associated with this Knowledge Object. The weight and count should always be equal to one another unless manually altered.

Knowledge Session saves include:

- **Draft Session** – a Knowledge Session able to be reopened and completed at a later time or day
- **Complete Experience -** saving the Experience saves the original text entry as well as the associations among all of the currently matched selected Concepts

When saving a new Concept, the system checks to see whether a Concept with the same name already exists in the Knowledge Base. If so, a pop-up message is displayed with the following user options:

- **Including Existing** – existing Concept is added to the set of selected Concepts for the current Knowledge Session.
- **Restore** – existing Concept is restored (that is, it is no longer marked for deletion). The properties the user specifies for the new Concept replaces those of the restored Concept. The existing Concept's history is retained, however, and the restoration is noted.
- **Rename New** – the User is prompted to enter a different name for the Concept. The new name is again is verified to make sure it is not a duplicate of an existing Concept Name.
- **Cancel** – the Contribute tab is displayed again so that the user can change the Concept Name.

Unsuccessful Searches & Knowledge Contribution

If the user was unable to find an appropriate solution to the incident, then it is important that a new Knowledge Object be completed and contributed. The new Knowledge Object includes Concepts found in the Knowledge Base search (If any) and the creation of a new Solution Concept and other Concepts (Incident, and Known Error Concepts, as required) with content originating from the user's experienced and know how and external KMS knowledge sources.

A Knowledge Object can be created without the inclusion of a Solution Concept as the SME will add this content to the contribution during the Technical Review of the Authoring Workflow process.

KMS Glossary

A

Administration (System) - KMS
The application that allows administrators to administer, configures, and maintains KMS.

Agent - KMS
The application that allows agents to search for stored knowledge and contribute new knowledge using a single-screen interface that serves as a knowledge management center.

Architect - KMS
The application that allows authors to create and maintain knowledge.

Application language
The language in which the interface elements (buttons, menus, messages, and so forth) are presented. The application language does not have to be the same as the knowledge language. For example, Spanish knowledge can be displayed using an English interface. *See* **Knowledge Language**.

Associative Match
One of the following types of match: Experience, or Fuzzy.

Attachment
A reference to an external resource such as a document, graphic, or Web site that is stored outside the knowledge base and that provides additional information about a Concept. Only the reference is stored in the knowledge base.

Audience
A group of users who share the same view of stored knowledge. For example, when considering Audience of Level 1 users, a solution Concept could include a more detailed description or more complete instructions than the equivalent Concept presented to an Audience of Level 2 users.

Authoring Workflow Process
A defined systematic process for assuring the quality of knowledge; it includes multiple steps. Various users have distinct responsibilities in each Authoring Workflow Step; for example, Subject Matter Experts (SMEs) verify the technical accuracy of the knowledge, and Technical Writers verify that the knowledge meets the corporate standard and contains no grammatical errors. Concepts and Knowledge Objects are moved systematically through the Authoring Workflow Process until they are ready for general use.

Authoring Workflow Step
A single step in the Authoring Workflow Process. Users' access to Concepts and Knowledge Objects is controlled by their assigned Roles, which give them Permission to work on or view specific items, depending on the items' current Authoring Workflow Step.

C

Concept
A basic unit of information; a word or phrase that the Search Engine uses to make associations. Each Concept is a specific example, or instance, of a more general Concept Type. The knowledge base can contain a maximum of 2,147,483,647 Concepts. The associations among Concepts, when saved together, form an Experience.

Concept Type
A category of similar Concepts. The knowledge base can contain a maximum of 30,000 Concept Types.

D

Draft Session
A Knowledge Session that is saved as a draft in KMS Agent. For example, if further research is required or the end user Session can be saved as a draft and completed later.

E

Environment
A Concept Type describing the operating system or technical Site in which the end user is operating the Service involved in the incident.

Experience
A saved, completed Knowledge Session; a specific instance of a Knowledge Object. Multiple Experiences can include the same associations; this increases the weight of the underlying Knowledge Object, which is one factor used by the Search Engine to calculate the match strengths shown in Pick-lists.

Experience Match
A type of match that occurs when all of the Concepts currently selected in a Knowledge Session occur together in a Knowledge Object.

F

Folder
A means of categorizing items in the system, such as Concepts, Knowledge Objects, and Attachments, so that specific items can be easily located in the knowledge base. The organization of Folders and Subfolders is determined by knowledge authors who have Permission to maintain them.

Fuzzy Match
A type of match that occurs when some, but not all, of the Concepts currently selected in a Knowledge Session occur together in a Knowledge Object.

G

Global Synonyms
Groups of words that mean the same thing. They are applied to any Concept whose name or Synonyms contain any one of the words in the group. Global Synonyms provide a way to set up groups of words that appear in many Concept Names, which makes maintenance easier than if the Synonyms were assigned to individual Concepts.

I

Incident Concept Type
A Concept Type describing the incident the end user is presenting.

K

Knowledge Area
A specific set of knowledge within the knowledge base for a PGI Organization – PGIC, PGIN, and PGIE. Users' access to Knowledge Areas is controlled by Permissions.

Knowledge Base
The aggregate collection of knowledge and information that the Search Engine accesses when providing suggestions to the end user.

Knowledge Language
The idiom of the user, which controls how knowledge is presented to individual users. The application language in which the user interface is presented does not have to be the same as the knowledge language. For example, Spanish knowledge can be displayed using an English interface. *See* **Application Language**.

Knowledge Object
A set of Concepts that have been associated to describe a complete situation. Knowledge Objects can be created and contributed by SMEs in KMS Software Architect; they are also created the first time a set of Concepts is saved together as an Experience in KMS Agent. A Knowledge Object can include a maximum of 32 Concepts.

Knowledge Server
The "back end" of the system, including the knowledge base and the Search Engine. The Knowledge Server processes users' requests for the retrieval of existing knowledge and the creation of new Experiences when completed Knowledge Sessions are saved in one of the applications.

Knowledge Session
A user's interaction with the Knowledge Server or with the Search Engine. A Knowledge Session begins when a user performs a function in which text or Concept activation occurs; for example, starting a Knowledge Session or opening an Experience.

Knowledge Session Template
A systematic process in which the system guides the user through a set of Concept Types that have been grouped together to represent a function within an organization. At any point, the user may be asked to provide additional information by selecting items from a Pick-list.

Knowledge Source
A reference to the physical database where knowledge is stored.

Knowledge State
A way of grouping or controlling access to Concepts and Knowledge Objects. A Knowledge State can indicate that a Concept or Knowledge Object is active and available in the applications, is not active and cannot be used, or is awaiting approval by the knowledge administrator. The states include current (Visible), Pending and Deleted.

L

Language
The idiom of the user, which controls how knowledge is presented to individual users.

Long Description
Additional information associated with a Concept, such as explanations, instructions, and troubleshooting tips. A Long Description can be HTML content stored in the knowledge base, or it can be an HTTP or HTTPS path.

Language

M

Minimum Relative Strength
The minimum relative strength (in percentage) required for an item to be displayed. This percentage is relative to the strength of the strongest match. For example, if the strength of the strongest match is 80 and you specify a minimum relative strength of 50%, items with a minimum strength of 40 (80 * 50%) can be displayed. The value can be from 0 to 100; the default is 0.

Minimum Strength
The minimum strength required an item to be displayed. The value can be from 0 to 100; the default is 0.

You should decide whether you want to use relative or absolute strength and set these elements accordingly. That is, if you prefer absolute strength, set **Minimum Relative Strength** to 0; if you prefer relative strength, set **Minimum Strength** to 0.

P

Permission
A way of controlling users' access to specific system functions. To perform a given function, the user must be assigned a Role that includes the appropriate Permission.

Pick-list
A list of the Concepts within a Concept Type. If matches are found with previously selected Concepts, the type and strength of the matches are indicated.

Service
A Concept Type, which identifies the software, hardware, or other device that the end user is using while experiencing the incident.

Solution Concept Type
A Concept Type, which provides the steps, needed to resolve the end user’s incident or question. Also known as Resolution – asks the question – ‘How do I resolve the problem or answer a ‘how to’ question?’

R

Role
A way of grouping Permissions and assigning them to multiple users to control access to certain system functions. A user's Roles determine

the actions he or she is allowed to perform.

S

Search Weight
The weight used by the Search Engine when activating a Concept selected from a Pick list or Filter. It is used to calculate the strengths of all Concepts returned by the search. The search weight can be from 1 to 32,000; the default is 4.

Segment
A configurable property that can be assigned to users and knowledge in order to limit access. For example, Account Levels can be used to limit access to restricted knowledge, allowing only "priority" Accounts to view it.

Segment Type
A group of related Segments.

Segmentation
A means of restricting the visibility of knowledge by creating logical divisions within a knowledge base. Segmentation can be either Concept-based or Knowledge Object-based, depending on whether it is to be applied to Concepts or to Knowledge Objects.

Search Engine (Cognitive-based)
The "brains" of the system, which analyzes all of the supplied information and associates it with everything else it knows.

Short Description
A brief summary of a Concept, a Knowledge Object, or an Attachment.

Synonym
A word or phrase that means the same thing as a related Concept. Synonyms can be either Concept-specific or Global. Concept-specific synonyms are assigned to a Concept and used by the Search Engine to identify possible matches only with that Concept. Global Synonyms are assigned system-wide and used by the Search Engine to identify possible matches with any Concept in the system whose name includes a word in the Synonym group. *See* **Global Synonyms**.

T

Text Match
A type of match that occurs when the text entered by the user matches the exact words of an existing Concept or one of the applicable Synonyms.

U

User
A person who uses the KMS Software applications. A user is assigned a login name, password, and one or more Roles.

User Profile
The complete specification of an individual user's settings, including the user name, password, e-mail address, assigned Roles, and so on.

W

Web Server
The Web server that "hosts" all the KMS Software applications: Architect, Agent, and Administrator.

Weight
The number of Experiences associated with a Knowledge Object. Each time an Experience with the same set of included Concepts is saved, the weight of the corresponding Knowledge Object may be increased by 1.

