

Knowledge Management: A CA Service Management Process Map

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Executive Summary

Challenge

The Information Technology Infrastructure Library version 3 (ITIL® V3) process framework approaches IT Service Management (ITSM) from the lifecycle of a service. ITIL V3 best practice guidelines are complex and challenging to interpret across all five phases of the service lifecycle. Moreover, they are not designed to provide definitive advice about implementing ITSM processes. Many IT organizations consequently undertake an ITIL journey without a firm idea of their goals or path toward achieving said goals.

Although most organizations have vast amounts of knowledge across the enterprise—in the form of individual expertise and data—it may not be easy to query or find. Knowledge Management provides a framework to transform data into useable knowledge that supports the service lifecycle.

Opportunity

By implementing Knowledge Management, you have the opportunity to improve the quality of service delivered to your customers, increase customer satisfaction, and reduce the cost of maintaining and managing services—enabling more informed decision making throughout the enterprise.

Knowledge Management focuses on ensuring that the right information is delivered to the right place or person, at the right time, enabling informed and timely decisions. By transforming the data in the enterprise into knowledge that is dynamic and context based, other processes within the ITIL framework also benefit.

CA has developed a unique approach to charting the ITIL journey through a visual representation of the ITIL framework and its interdependent ITSM processes in the form of a subway map. This map is an ideal starting point for understanding and communicating about ITIL. It helps you successfully plan and implement Incident Management programs.

Benefits

The CA Knowledge Management process map enables IT organizations to support services and better align IT to business needs. Following the Knowledge Management map helps generate:

- Improved quality of service and higher user satisfaction
- Increased adoption of self service
- Reduced time to diagnose incidents and problems, higher first-call resolutions
- Reduced training time and costs
- Faster adoption of new or changed services
- Increased responsiveness to changing business demands

SECTION 1:

Challenge

Simplifying ITIL

The ITIL V3 process framework focuses on the service lifecycle and the way that service management components are structured and linked. It embodies critical guidance for IT organizations seeking to improve service quality and align more closely with business goals in order to create value for their business and its customers.

But the ITIL V3 best practice guidelines are complex and challenging to interpret across all five stages of the service lifecycle. Moreover, they are not designed to provide definitive advice about implementing ITSM processes. Many IT organizations consequently undertake an ITIL journey without a firm idea of their goals or path toward achieving said goals.

CA has developed a unique approach to charting the ITIL journey through a visual representation of the ITIL framework and its interdependent ITSM processes in the form of a subway map. These maps present an easy-to-navigate, high-level view of the ITIL terrain. IT executives, strategists, and implementers can use these ITSM process maps— along with the family of CA ITSM Process Map Technology Briefs that expands on them. The maps and technology briefs provide a common reference point for understanding and communicating about ITIL. They also help you with program planning and implementation.

How to Use the CA Service Management Process Maps

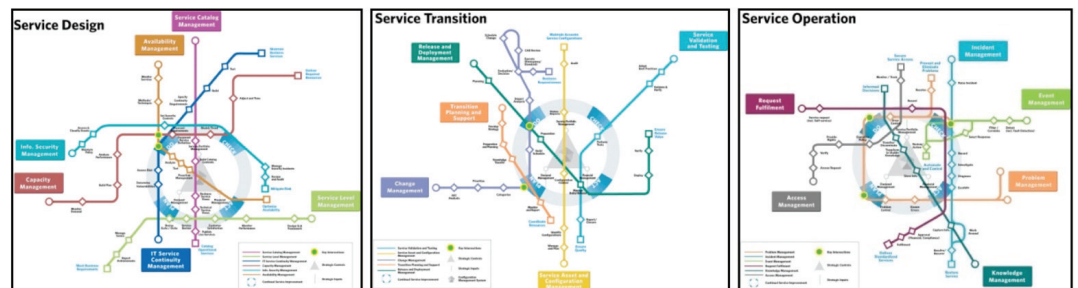
CA's ITSM Process Maps use the analogy of subway system maps to illustrate how best to navigate a continual service improvement journey guided by strategic controls throughout the service lifecycle. Each map describes the relevant ITIL processes (tracks) the ITIL process activities (stations) that you will need to navigate to achieve ITIL process goals (your destination), and the integration points (junctions) that you need to consider for process optimization.


CA has developed three maps (Figure A) that portray the critical ITIL disciplines that most ITSM discussions focus on: Service Design, Service Transition, and Service Operation.

FIGURE A

The Service Operations phase of the lifecycle, as shown by the CA ITSM Process Map for Service Operation (Figure B), is where organizations have typically begun the ITIL journey— simply addressing the complexities of “keeping the lights on.” Its role in the service lifecycle has a far-reaching impact, as its “tracks” are responsible for executing processes that optimize the cost and quality of services.

CA ITSM PROCESS MAPS





The SKMS is not intended to be one physical database, rather a virtual database able to access various data sources that exist in the enterprise, transform them for use, and present them to the right audience at the right time. The idea behind the SKMS is similar to that of the CMDB; the data comes from various places such as the CMDB, CMS, Availability Management data, human resource data, Service Portfolio data, supplier and contracts, and any unstructured data. So, in essence, the SKMS is a federated database, relating all of these pieces and providing the information needed to manage the full lifecycle of the IT service.

ITIL v3 introduced the concept of capturing information throughout the entire service lifecycle. But while information is captured throughout the lifecycle, the transition phase acts as the gateway for knowledge to be introduced into the production environment. Service Transition uses information from Service Design, such as configuration baselines, and updates the CMDB and thus the CMS. In addition, valuable information is captured during development and testing, and eventually goes through Change Management controls. This phase ensures that the right knowledge is in place to equip Service Operation.

To provide a practical example of Knowledge Management embedded in an ITIL process, this paper will demonstrate its relationship with Incident Management—as a capturing mechanism and data source. For the purpose of this paper, Knowledge Management is addressed in the Service Operation set in the subway map.

Knowledge Management is a lifecycle-wide process and has key intersections with other ITIL processes, such as Incident and Problem Management. For instance, Incident Management is dependent on useful information to enable timely handling of incidents, and contributes to the SKMS by providing workaround information.

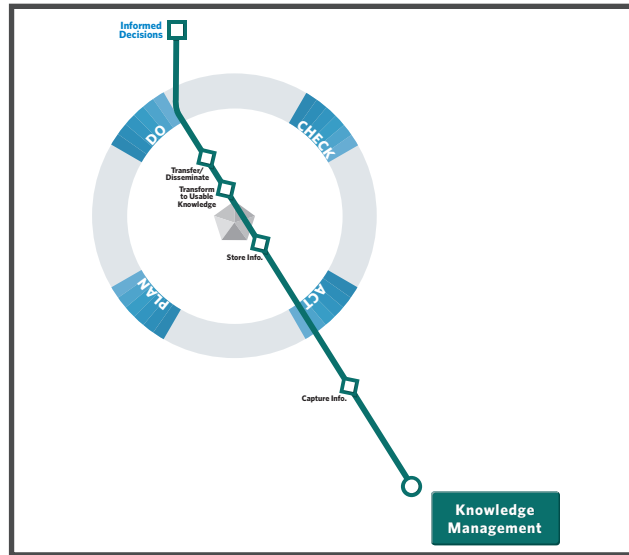
When addressing Knowledge Management from a Service Operations perspective, the major activities include:

- Capture Information
- Store Information
- Transform to Usable Knowledge
- Transfer/Disseminate
- Make Informed Decisions

FIGURE C

Figure C illustrates the Knowledge Management process line on the CA Service Operation subway map, which serves as a basis for the discussion to follow.

THE KNOWLEDGE MANAGEMENT PROCESS



Capture Information

ITIL describes the Data-to-Information-to-Knowledge-to-Wisdom (DIKW) structure, where information is captured, stored, analyzed, and transformed into useable knowledge before it is transferred for use. Knowledge is built from data, but data has little meaning by itself. To provide meaning, some kind of relationship or context needs to be put around the data to transform it for use in order to put it to action.

The flow from data to wisdom

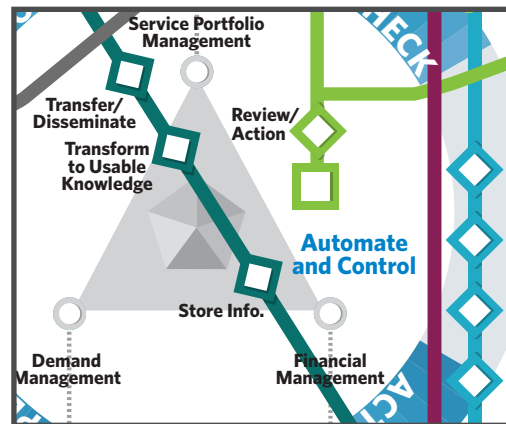
As all knowledge starts with data, an organization can take advantage of the data captured from the various IT Systems. For instance, the first station on the Knowledge Management journey is 'Capture Information'. During this stage, information is captured from processes within the ITIL framework (as depicted in the ACT junction on the Incident Management track). During the Incident Management 'Workaround' activity, information is captured and recorded in context to the user, affecting Configuration Item (CI) and all workaround detail. All of this information provides a foundation for putting this into relevant context during the next stages of Knowledge Management. Problem Management also intersects with Incident Management at this stage and provides information on any known errors in the environment.

The workaround may be required until a permanent fix has been determined by Problem Management, or it could become the permanent fix if the resolution is deemed too costly to implement. For this purpose, the workaround will then need to move through the next stage of the Knowledge lifecycle in order for the organization to use it.

Storing Information

At this stage the Analyst creates, in context, a 'draft' knowledge artifact directly from the Incident or Problem. Information is captured and stored from the Incident or Problem record,

including the effected end user, detail and summary information, the workaround detail, affected CI, and links to any other information. Ideally, this artifact is stored in a central repository for the next phase of the process to take place.



By including this as part of the Incident Management process, the analyst is not performing an extra or separate task for Knowledge Management, but an integrated, overlapping activity that benefits IT Service Management as a whole. The content has become easy to capture, and the IT organization will soon be learning from its own experiences.

In addition to the CMS and CMDB, the Incident and Problem Management system (or integrated Service Desk) underpins the SKMS, providing a source of data, and should therefore be integrated with the knowledge management system.


Useful integration points include:

- Access to a knowledge-authoring tool from an Incident or Problem record
- Ability to automatically populate information into the knowledge artifact
- A link to the draft knowledge artifact in the Incident or Problem record
- A link to the CI in the knowledge artifact

Transform To Useable Knowledge

During this stop in the Knowledge Management journey, the knowledge artifact is ready for formatting, routing to a subject matter expert(s) for review and amendment, final approval, and publication.

The information captured and stored by Incident and Problem Management provides the foundation for transforming knowledge into a useable form by providing relationships and context to the data. The incident should include details such as the type, the effected end user, how the user reported the incident (their description), and CI (accessed from the CMDB). For instance, the knowledge artifact should include workaround details related to an impacted Service (CI) captured from the incident. If a knowledge artifact was created without relevant CI information, there would be no context around the application or service related to the



workaround . It is critical that as much information as possible is captured to help frame usable knowledge.

Well written knowledge will facilitate the use, reuse, or adoption of the knowledge base, and usually includes clear instructions or steps. These steps can be bulleted or numbered and include screenshots and Knowledge Trees which ask the user specific questions, eventually leading to resolution steps. Automated solutions can also be embedded into artifacts that include scripted fixes that the technician or end user can click to execute the fix. Solution templates can help enforce required information as well as provide a consistent format.

The knowledge artifact will then go through a review process. Normally, at least one role is assigned to managing knowledge from a review standpoint. A typical role for this part of the process is a Knowledge Engineer (or Knowledge Worker). The Knowledge Engineer may have responsibility for reviewing the format of the knowledge artifact, then consult with an SME for technical accuracy and relevance. The use of SMEs in the Knowledge Management process is paramount as they provide, as the name implies, the expertise. This responsibility should not be mixed with that of the Knowledge Engineers; their responsibility is to engage the SMEs at the appropriate time.

At this stage it is important to consider the targeted audience of the knowledge. For instance, if a developer provided knowledge content that is highly technical, and is intended for end users to view through self service, it may need to be reworded.

Another point to consider is the wording end users use to report Incidents, as these can be used for retrieval purposes (particularly if made available via self service). Organizations tend to re-word users' descriptions to include more technical or business terms, and unfortunately lose valuable context. The wording customers use to describe or ask for things should be included within the knowledge.

Transfer/Disseminate

The final station is Transfer/Disseminate, which moves toward the Do junction. Here, decisions are made on who will have access to the knowledge and how they will have access to it.

The knowledge will need to be transferred to the right part of the organization. Again, the audience must be clearly understood to ensure that the appropriate method of delivery is defined, and security is applied to the knowledge.

The audience may include end users and various levels of technicians throughout the enterprise. If the audience is IT only (highly technical in nature for instance), then the knowledge may not be suitable for use via self service. If the intended audience are end users, the knowledge should be made available through a self service mechanism which has search and retrieval capabilities, dynamic FAQs, and links to announcement boards. Technicians should have easy access to knowledge through an integrated Service Desk, so searches return results in context to Incidents, their descriptions, categories, and CIs.

If knowledge is divided between IT levels or groups, security will need to be applied.



Informed Decisions

Now that knowledge has been dispersed, the organization has reached its destination on the Knowledge Management journey and can make informed decisions to support services, based on previous organizational learning.

Knowledge Management is a cyclical process, therefore this is not really the end of the track for knowledge. As part of Continual Service Improvement, measurements and improvements will need to take place to ensure that knowledge is kept valid. A SKMS can quickly become overloaded with old and irrelevant knowledge if it is not measured for effectiveness, and the knowledge program can fail.

Management activities that need to be undertaken include:

- Review knowledge due for review/retirement
- Amend or retire knowledge when necessary
- Undertake periodical knowledge gap analysis
- Review metrics for knowledge effectiveness

Integrating Knowledge Management with other Processes

Knowledge Management becomes truly optimized when integrated with other processes such as Incident Management, as well as Request Fulfillment, Problem Management, Access Management, and Event Management. The close relationships between these processes are represented visually in the CA Service Management Process Map for Service Operation (Figure B). Some of the support processes cross each other at different intersections. This indicates a relationship between those processes where the outputs from one become the inputs to another. There are also integration points with other processes such as Change Management and Release and Deployment Management, as well as processes from Service Design.

For instance, Service Transition serves as the gateway for Knowledge Management, ensuring adequate knowledge is captured, tested and released when a new or changed service is introduced into the production environment. Release and Deployment captures valuable information from development and testing, any accepted known errors, as well as information from the Design phases, such as service level, availability, capacity, configuration baselines, etc. Change Management ensures that adequate knowledge is available for the new or changed service before it is released into production. Release Management could also be used to test knowledge before it is introduced for consumption.

Optimizing the Knowledge Management Journey

Since the primary goal of the Knowledge Management process is to ensure that users have access to reliable and secure information to make informed decisions, activities should incorporate technologies that support the functions: capture, storing information, transform to usable knowledge, transfer/disseminate. Tools that help enhance the Incident Management process should provide:

- Tight integration and controls between supporting processes, for example, the capture of information from Incidents and Problem records (workaround information)
- Ability to search external repositories for 'unstructured' knowledge
- Ability to link to other sources of knowledge

- Tight integration with a Service Desk tool for in-context search purposes
- Workflow capabilities to streamline the review and approval process
- Review and Retirement date features
- Knowledge calendar functionality
- Easy-to-use editing capabilities
- Decision Trees
- Template
- Collaboration capabilities
- Categorization features

SECTION 3:

Benefits

Benefits of Knowledge Management Best Practices

The benefits of implementing an effective Knowledge Management process in line with ITIL best practices include:

- Improved quality of service to users
- Improved user satisfaction
- Increased adoption of self service
- Higher first call resolution rates
- Reduced time to diagnose incidents and problems
- Reduction in training time and costs
- Faster adoption of new or changed services
- Increased responsiveness to changing business demands

SECTION 4:

Conclusions

The objective of Knowledge Management is to provide the right information to the right place or person at the right time. By embedding Knowledge Management into other ITIL processes, knowledge becomes a by-product which is in context, timely and relevant to the organization.

Technology can play a critical role in optimizing the Knowledge Management process by automating the actual process activities themselves, and by accessing the outputs from other related processes (such as capturing workaround data from Incident Management). Self Service plays a key role in improving support, and increasing user satisfaction by delivering quality information to customers when they need it.




SECTION 5:

About the Author

Lynda Rees has over 10 years experience in the IT industry, predominately working in the Service Management arena. Rees has been both a Service Management practitioner and a consultant for large companies in the US, Asia Pacific and Europe, and has authored several Service Management whitepapers.

Rees is an ITIL Service Manager, a Certified Help Desk Manager by HDI, and a member of the Help Desk Institute (HDI) and the IT Service Management Forum (itSMF).



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