

TECHNOLOGY BRIEF: RELEASE AND DEPLOYMENT MANAGEMENT

Release and Deployment Management: A CA Service Management Process Map

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Table of Contents

Executive Summary	1
SECTION 1: CHALLENGE	2
Simplifying ITIL	
How to Use the CA Service Management Process Maps	2
SECTION 2: OPPORTUNITY	4
Release and Deployment Management	
Planning	5
Preparation	7
Manage/Build Release	8
Deploy	8
Verify	9
SECTION 3: BENEFITS	10
Benefits	
A Key to Achieving IT Service Excellence	11
SECTION 4: CONCLUSIONS	12
Conclusions	
SECTION 5: ABOUT THE AUTHOR	12
About the Author	

Executive Summary

Challenge

The Information Technology Infrastructure Library Version 3 (ITIL® V3) process framework approaches IT Service Management (ITSM) in terms of the lifecycle of a service. The Service Lifecycle is an organizational model providing insight into the way ITSM is structured, and it embodies critical guidance for IT organizations seeking to improve service quality and align more closely with business goals to create value for the business and its customers.

However, ITIL V3 best practice guidelines across the five phases of the service lifecycle are complex and challenging to interpret. 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 and the path to achieve those goals.

One of the key ITIL management processes, Release and Deployment Management, presents its own particular challenges. Services are typically made of multiple differing components, and to handle the components, different types of expertise are often required, at different times. But the expertise may come from multiple functions in the organization. This makes service updates and upgrades a complex matter. Participants in the effort to bring part or all of a service from the development and testing environments to production must co-operate; therefore they must see the business benefit in agreeing to a common delivery plan, while maintaining the autonomy and quality of their specialties.

Opportunity

The primary objective of the Release and Deployment Management process is to organize the timely implementation of infrastructure changes in such a manner as to mitigate risks to the live production environment and ensure the business value of the delivered release. This involves synchronizing the functions, visibility and priorities of several IT operations, to upgrade or update the infrastructure in a satisfactory manner from the business's point of view. CA has developed a unique approach to representing the ITIL framework and its interdependent ITSM processes at a high level in the form of an easy-to-use subway map. This map is an ideal starting point for understanding and communicating about ITIL in support of successful program planning and implementation.

Benefits

The CA Release and Deployment Management process map enables IT organizations to unify the handling of infrastructure and application changes by automating compliance policies, improving service availability and reducing risk from uncontrolled changes.

Following the Release and Deployment Management map provides guidance to:

- Improve business process capabilities
- Effectively upgrade the IT infrastructure in timely alignment with business needs
- Foster the efficient delivery of multiple IT services
- Improve the quality of technical support

CA ITSM Process Maps illustrate at a high level how best to navigate a journey of continual service improvement guided by strategic controls throughout the service lifecycle. Each map describes the relevant ITIL processes and activities you'll need to work with to reach your goals.

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 that are seeking to improve service quality and align more closely with business goals

But, the ITIL V3 best-practice guidelines across the five phases of the service lifecycle are complex and challenging to interpret. Moreover, they are not designed to provide definitive advice about implementing IT Service Management (ITSM) processes. Many IT organizations consequently undertake an ITIL journey without a firm idea of their goals and the path to achieve those 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 modeled after an urban subway system. This three-part map (Figure A) presents an easy-to-navigate, high-level view of the ITIL terrain. IT executives, strategists and implementers can use these Service Management process maps along with the family of CA Service Management process map technology briefs that expand on them. The maps and technology briefs provide a common reference point for understanding and communicating about ITIL and help you with program planning and implementation.

How to Use the CA Service Management Process Maps

CA's Service Management process maps (Figure A) illustrate every process (or track), each activity (or station) and the key relationships that are relevant to navigating continuous IT service improvement. The ITIL quality cycle takes the form of a "circle" with each Plan-Do-Check-Act (P-D-C-A) step as a process integration point (junction) on the line. Junctions serve both as reference points when assessing process maturity, and as a means to consider the implications of implementing a process in isolation.

Strategic controls (Service Portfolio Management, Demand Management and Financial Management) are needed to reduce risk and optimize integration across the service lifecycle, as illustrated on the three points of the triangle centered in the P-D-C-A quality circle (seen more easily in Figure B). These strategic controls help in evaluating, prioritizing and assuring the appropriate levels of financial and human resources for existing and new services.

This paper is part of a series of Service Management Process Map technology briefs. Each brief explains how to navigate a particular ITIL process journey, reviewing each process activity that must be addressed in order to achieve process objectives. Along each journey careful attention is paid to how technology plays a critical role in both integrating ITIL processes and automating ITIL process activities.

FIGURE A

CA has developed three maps: Service Design, Service Transition and Service Operation since most ITSM discussions focus on these critical ITIL disciplines.

THREE MAPS

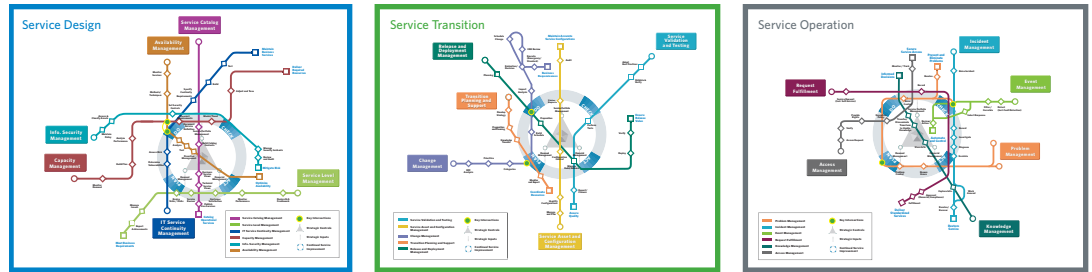
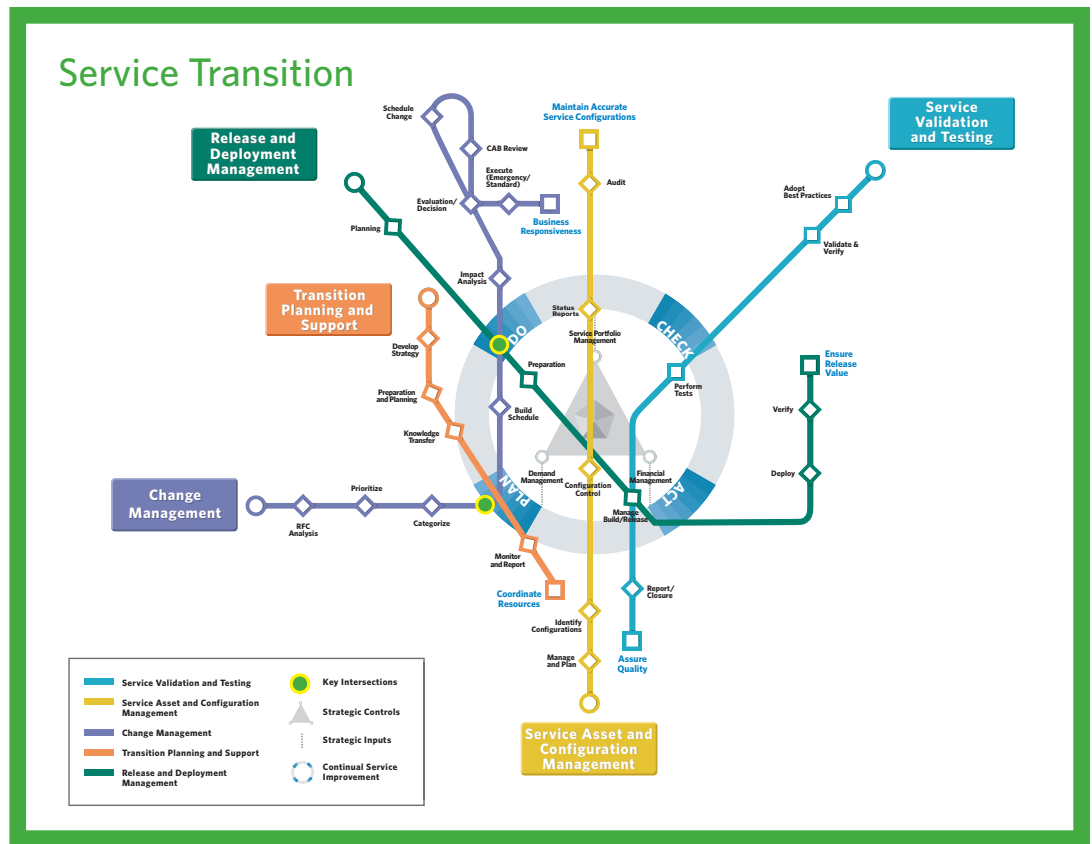


FIGURE B

The Service Transition map represents a journey of developing and improving capabilities for the transition of new and modified services to production. Within this map, the Release and Deployment Management journey is drawn.

SERVICE TRANSITION MAP



Finding the Right Path to IT Service Excellence

Many organizations have not adopted a formal release and deployment discipline across all of IT. This is not so much due to a level of difficulty in carrying out the functions; instead, it is because many of the functions are active already but are not strategically coordinated to optimize their beneficial influence on driving future state development in alignment with the business. Key points in this optimization include:

- Enabling business-oriented investment decisions
- Managing service components using business priorities
- Ensuring that services are compliant

One of the main outcomes of the Release and Deployment Management process is a decrease in the frequency of business interruptions required to update the infrastructure with business-enhancing capabilities. However, this comes about through bringing multiple contributing disciplines out of their silos to push progress together with less redundancy and fewer gaps in the process.

SECTION 2: OPPORTUNITY

Release and Deployment Management

The goal of the Release and Deployment Management process (or track) is to assemble and position all aspects of services into production and establish effective use of new or changed services, while protecting the integrity of the live production environment.

In ITIL V3, Release and Deployment Management aims to build, test and deliver the capability to provide the services specified in the Service Design phase and that will accomplish the stakeholders' requirements and deliver the intended objectives. More specifically, the Release and Deployment Management track is responsible for defining and organizing the compatibility of deployments of infrastructure changes intended to update or upgrade the production environment, so as to identify, manage and limit risks that could interrupt the business.

As a direct approach to managing the complexity of the infrastructure, Release and Deployment Management concerns itself with aligning the implementation of infrastructure changes to the business requirements for a stable, high-quality infrastructure. Infrastructure managers are able to monitor and direct the flow of changes into the production environment.

Consequently, Release and Deployment Management ensures that the new deployment of services or their components will present lower risk to the production environment and optimize the impacts of changes.

Release and Deployment Management aligns the implementation of infrastructure changes to the business requirements for a stable, high-quality infrastructure.

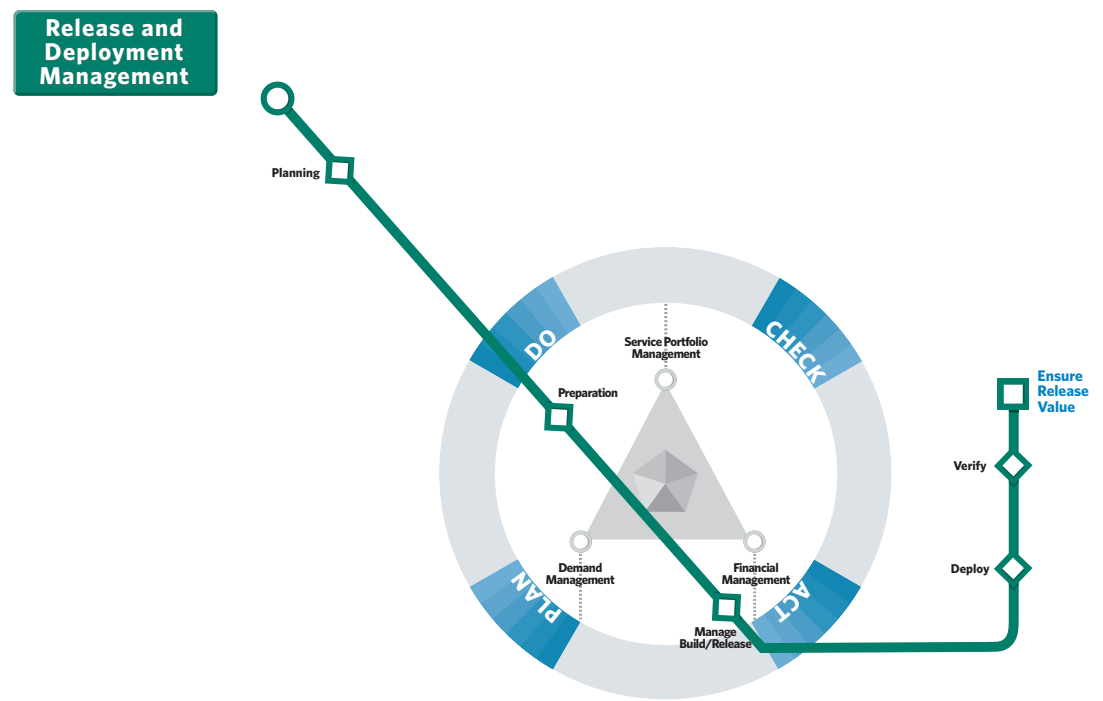
The ultimate goal of the Release and Deployment track (Figure C) is to ensure the value of a release through a full coordination of operations required to newly and successfully update or upgrade the production environment. The subway map for this journey plots the key stations along the course in this way:

- Planning
- Preparation
- Manage/Build Release
- Deploy
- Verify

FIGURE C

The Release and Deployment Management track guides managers in gaining and maintaining a supervisory position over the operations driving multiple and ongoing changes of the infrastructure, so that they don't risk the quality and stability of the live production environment.

RELEASE AND DEPLOYMENT MANAGEMENT



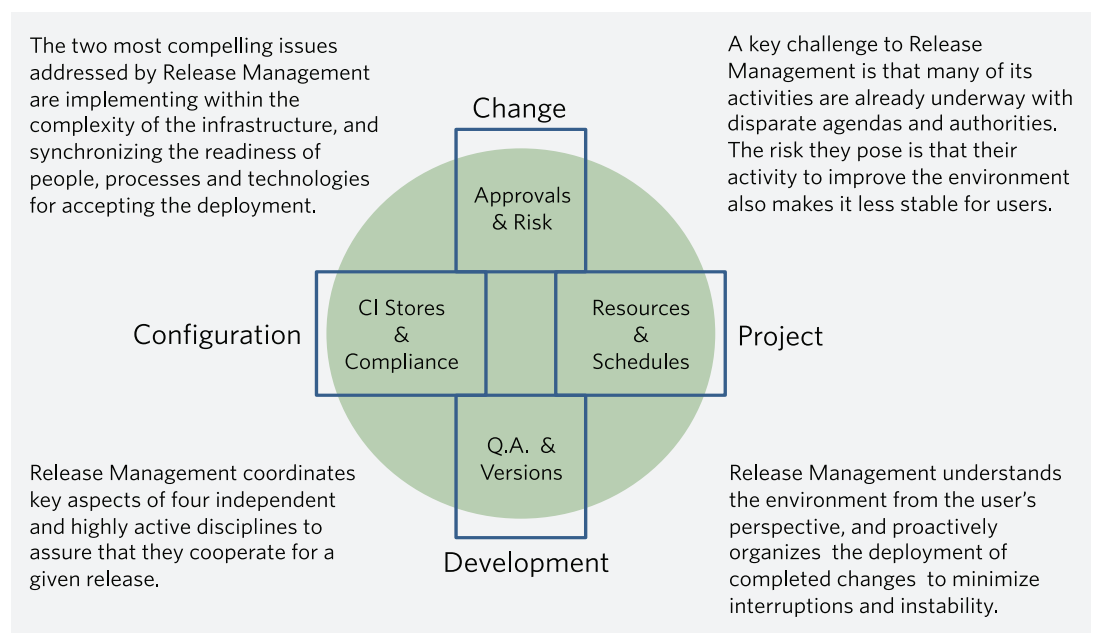
Planning

Effectively implementing the management process for Release and Deployment is, of course, a prerequisite to using the process well. For this, the key is to inform IT management stakeholders (Figure D) of the purpose of the process, emphasizing the objective to co-ordinate, not replace, their contributions.

FIGURE D

Management stakeholders in releases and deployments co-operate by sharing a common plan in which they are reliable designated contributors.

STAKEHOLDER COORDINATION



The intended coordination should identify coverage of the following deployment issues:

- High-level requirements
- Scope
- Policies
- Organizational responsibilities
- Anticipated resources
- Individual processes and procedures with touch points or hand-offs

A view of roles, processes and standards will allow stakeholders to anticipate what the approach means to them in terms of responsibilities and costs in their budgets and schedules.

Another critical aspect of this coordination is to recognize that both hardware and software will be subject to the Transition Planning and Support process. Furthermore, since the business views a deployment as part of a solution, proper identification and definition will be applied to procedures and people in the transition as well as to the technology being deployed.

This general cooperative stance then applies to particular deployments, promoted as a business request for a release.

Preparation

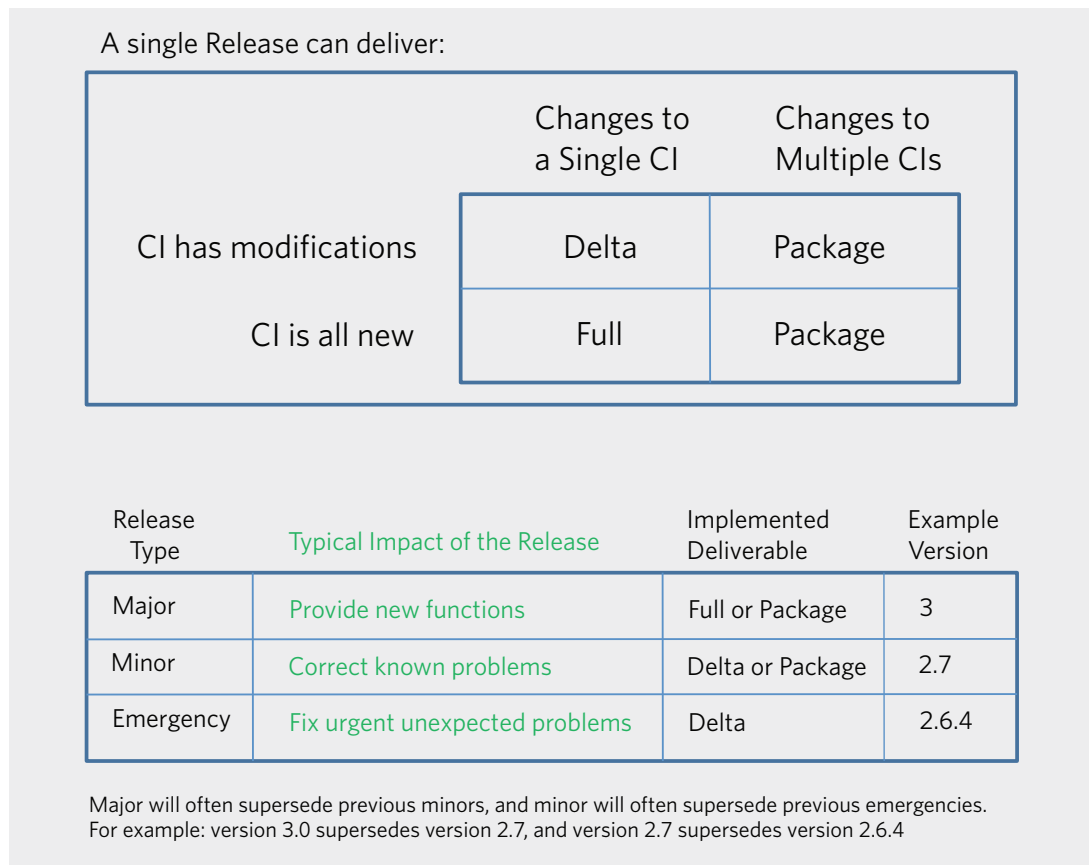
Release and Deployment Management takes a holistic view of changes to ensure that all aspects of the change, both technical and non-technical, are considered together.

Coordinating deployments calls for identifying activities, resources, issues, risks and schedules across different functional silos that are generating changes needed by the business. The objective at this station is to determine and communicate the shared priorities, requirements (Figure E) and approach that these functions will observe for producing the deployments appropriately. A distinctive feature of Release and Deployment Management is in its organization of multiple changes, possibly from multiple sources, into one timely release appropriate for the business. This organization of the changes will be developed as a plan. In this way, Release and Deployment Management works to bridge the gap between development and operations by ensuring that new/updated services are not just “thrown over the fence”.

FIGURE E

The type of impact that the business wants from the release is a strong driver of how the release will package changes together for deployment.

RELEASE PACKAGING OPTIONS



Manage Build/Release

Producing the release means controlling and tracking the various activities and outcomes of the production procedures that generate the deliverables. A release plan is therefore concerned about the following matters:

- Sources, as they pertain to build/buy decisions
- Quality, pertaining to identifying and certifying a particular version of the deliverable
- Storage, which addresses the security around the deliverables to be deployed
- Targets, which are the locations and users that should achieve readiness to receive and use the deployments
- And, the deployment itself, which actually validates and distributes the proper changes within the infrastructure and the business schedules.

Release and Deployment Management is distinctive in its role of issuing the release plan to development and deployment teams, and in being responsible for the storage of the change products such as software and hardware components of a service. Release and Deployment Management, for example, should establish and load the Definitive Media Library (DML) and the Definitive Hardware Store (DHS) with valid versions of service components. (Related to that, a DML, or definitive media library, may store both physical hardware and software on physical media.)

While the DML and DHS thus include ready-to-use CIs (configuration items) that match authorized production counterparts, a Configuration Management System (CMS) is a shared information utility that stakeholders can use to reference the model of the service to be deployed. The data in the CMS, which is used to describe and record the model, resides in a configuration management database (CMDB) as descriptions of the infrastructure's authorized CIs and relationships amongst CIs. For the target service, planners are thereby able to consistently refer to the service characteristics that releases should affect and that are most pertinent to the particular stakeholders. In that way, the build and release procedures identified in the plan benefit greatly from the efforts of the Service Asset and Configuration Management process to maintain and validate service specifications with the CMS. Backed by the CMS, all parties to the release plan gain confidence in the plan.

Deploy

At this station on the journey, the actual builds, buys, testing and deployment is done by the Service Transition and Support process, which progresses with a release plan under the requirements of a higher-level service transition plan (Figure E). While releases stock the DSL and DHS, Transition Planning and Support directly executes and supervises the distribution of the CIs from the stores into the production environment. These distributions, or rollouts, rely on the release plan, or service transition plan, to specify which changes are due in the production environment. It is important to note that under Release and Deployment Management, the deployments modify the production infrastructure at the level of particular pre-defined CIs, while the CIs themselves are developed or modified through project management and change management. Before and during deployment, Release and Deployment Management monitors the readiness of designated CIs that are required parts of the release package.

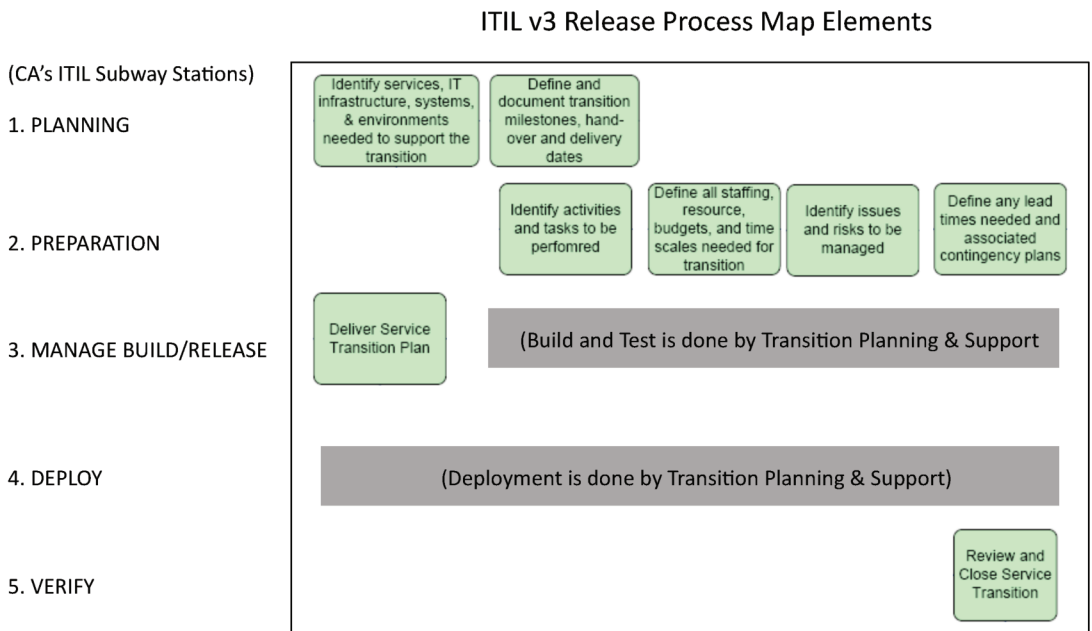
Verify

The ability to determine the actual impacts of deployment efforts is naturally important in terms of identifying incidents or problems caused by the deployment. In Release and Deployment Management, the verification focus is on whether the actual finished implementation matches the expected appropriate contents of the release package. Objectively speaking, when the complete release package has been delivered, then the request for release can be closed. However, if there have been mitigating circumstances that leave the production environment with a working but different modification, Release and Deployment Management will need to decide on the necessity for a rollback of the deployments. To make this decision, Release and Deployment Management leverages information made available to Transition Planning and Support, from both Service Asset and Configuration Management (about valid CIs) and Change management (about successful modifications of CIs). With that information, Release and Deployment Management can determine whether alternatives to the prescribed release package are viable and acceptable or whether the deployment should be rolled back.

FIGURE F

A recap of the Release and Deployment journey in terms of standardized ITIL process segments where roles and responsibilities are easy to envision.

ITIL V3 RELEASE PROCESS MAP ELEMENTS



Benefits

The executive view of a successful service implementation includes concerns about the control, compatibility and delivery of the service. These three factors translate, respectively, into management of the quality, risk, and value of the provided service, as deliberately generated from end-to-end of the lifecycle of the service.

ITIL v3 describes Service Design, Service Transition (deployment), and Service Operation as three major phases in the service lifecycle. Within Service Transition, the Release and Deployment effort is a high-level management process that bridges the gap between development and operations.

ITIL refers to the implementation of services as a transition, for a single key reason: the service implementation takes the service user from an older or current state to a different future state of operational options and constraints. This transition may include re-use, augmentation, modification, and replacement of the incumbent operational techniques.

ITIL V3 is distinguished by its emphasis on IT's strategic alignment to business benefit. Business benefit can be defined in many ways, but ITIL has generally provided guidance for balancing and improving the cost/quality ratio for services. Specifically, a successful delivery of a service into production will feature the right thing arriving at the right place at the right time for the right reason. The Release and Deployment Management process is largely responsible for developing and communicating those terms in the form of a service transition plan. Adoption of Release and Deployment Management reflects expected benefits in the following ways that support the value of releases:

- Provides a consistent, customer focused approach to deploying large releases into production
- Bundles similar changes together to decrease negative impact on the continuity of the business and on the workload on IT
- Better control on installed hardware and software leading to reduced costs in licensing and maintenance

Furthermore, Release and Deployment Management establishes additional traceability from development through to deployment in the service portfolio. All project and development activity for building or maintaining a service can be related directly to the release published in the service catalog. This linkage provides visibility into the process and investment in delivering services, including an assessment of risk versus value (target benefit).

A Key to Achieving IT Service Excellence

Automating ITSM through technology can help your organization reduce the amount of resources required to achieve ITIL V3 best practices. This assists your IT department in improving the quality of its services while embarking upon a continuous IT service excellence program focused on fostering business growth.

As you reach the end point of the release and deployment journey, your organization should have a better handle on the steps needed to promote successful service deployments, along with a better understanding of what constitutes success. Specifically, bringing deployment efforts in line with ITIL best practices can help you:

- Define and agree on release and deployment plans with customers and stakeholders
- Ensure that each release package consists of a set of related assets and service components that are compatible with each other
- Ensure that all release and deployment packages can be tracked, installed, tested, verified, and/or uninstalled or backed out if appropriate
- Ensure that integrity of a release package and its constituent components is maintained throughout the transition activities and recorded accurately in the CMS
- Ensure that organization and stakeholder change is managed during the release and deployment activities
- Record and manage deviations, risks and issues related to the new or changed service and take necessary corrective action
- Ensure that there is knowledge transfer to enable the customers and users to optimize their use of the service to support their business activities
- Ensure that skills and knowledge are transferred to operations and support staff to enable them to effectively and efficiently deliver, support and maintain the service according to required warranties and service levels.

Conclusions

The release and deployment journey features important opportunities at each station along the route:

1. **PLANNING:** Address the two major stakeholders of the change, who are end-users and support teams; they need to know what will change, and when
2. **PREPARATION:** Identify required activities affecting quality, resources and risks, all of which need to be monitored
3. **MANAGE BUILD/RELEASE:** Establish a supervisory position around the intended changes, with a business-driven release plan that sets the impact requirements for intended changes
4. **DEPLOY:** Monitor the status of the intended changes, officially taking intermediate delivery of the changes into managed storage before their final distribution to the user's production environment; then, direct the distribution
5. **VERIFY:** Oversee a review of the actual deployment(s) to establish their compliance with the release plan

In particular, by surrounding deployments with the activity at the Manage Build/Release and Verify stations, Release and Deployment Management assures that diligence is applied to aligning the changes for compatibility with other processes and with the business requirements.

Release and Deployment Management facilitates ITSM by managing the deployment of services needed by the business. However, doing so requires cooperative functions, and comprehensive plans that factor in people, process and technical changes — along with an outline detailing where to start and how to proceed through the journey.

Following the steps outlined in the CA Service Transition process map gives organizations a clear view of how their Release and Deployment Management journey will take shape and illustrates the key stops en route to generating and protecting the business value of releases. This journey results in:

- Consolidated deployment process
- Better planning and resource allocation
- Improved risk management allowing more frequent releases as necessary to keep up with changes in the business
- Stronger integration with other ITSM and ITIL best practices

About the Author

Malcolm Ryder has over 25 years experience in the IT industry, with expertise in the areas of service delivery and support and IT strategy. For the last 15 years, Malcolm has worked in consulting and solution strategy roles with a heavy emphasis on service management systems, with vendors, service providers and end-user customers. Malcolm has been a co-developer of multiple market-leading commercial ITSM solutions since the mid '80s.

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