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## CMDB: Get Ready, Get Set, Go!

CMDB Is A Means To An End, Not An End In Itself

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### EXECUTIVE SUMMARY

Most large organizations today use some form of IT change and incident tracking system, making an average of about 500 changes per month. With such a high number of changes, the process of change management becomes critical, and a solid base of information is required to provide management and governance of changes. The best foundation of change information is a configuration management database (CMDB). IT is buzzing about CMDBs, and the adoption (and failure) rates are difficult to determine — for obvious reasons — nobody wants to admit that they failed, and nobody is ready to claim that they have mastered it. The CMDB is the blueprint of an IT organization and should be used as such.

### THE FOUR PHASES OF YOUR CMDB IMPLEMENTATION

As enterprises grow, their IT organizations grow right along with them. This simple fact causes a sprawl of infrastructure elements, spread across a variety of functions, technologies, and organizations. As an IT operations professional, your struggle to gain control and maintain configuration items is undeniably linked to the sprawl and the frequency with which changes are made.

Multiple workflows across IT need to tap into a configuration management database. However, justifying, developing, and implementing a CMDB is not an isolated project or just a technology that can be installed. It is a journey that needs a plan, a map, coordination, and continuous feeding to be successful. By following the Deming cycle of Plan-Do-Check-Act, you can manage the effective installation and usage of a CMDB.<sup>1</sup>

#### Phase One: The Planning Phase And CMDB Strategy Design

The planning phase of the project is designed to help you develop a clear understanding of the goal. It also provides you with the focus to favorably influence the amount of effort put into the development, the project's length, and your audience's understanding of the plan. This phase will involve the following activities:

- **Identify the business purpose.** A CMDB can be used to address many IT issues, but establishing the real objective upfront is key. Usually a CMDB is implemented to support the change management process, with the goal of helping IT better understand the impact of changes. However, if performance and availability are the real pain points, then the type of information and depth of information will vary.



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- **Take a “just enough” approach to start.** Forrester recommends a “just enough” approach, which is a top-down approach focusing on the specific information needed to support a particular business process or application.<sup>2</sup> You can add more information later, as the project grows to encompass more management functions and business processes and applications.
- **Get ready, and take aim.** As with any other project, you will need to educate, inform, and understand the CMDB subject with input from vendors, analysts, and other organizations. During this process, it is important to understand the concept of reconciliation and federation, because this becomes important during the implementation phase.<sup>3</sup>
- **Assess your IT process maturity.** You will need to take a look at your existing configuration management process and describe its maturity. Multiple paths can be taken here; one is to leverage a self-assessment from a consulting organization like Pink Elephant or IT Service Management Forum UK (itSMF), which deliver ITIL assessments.<sup>4</sup>
- **Make the IT asset or configuration management database decision.** An asset management database tracks the life cycle, the contracts, and the cost of assets. The activities included in asset management are the management of inventory, software licenses, vendors, procurement, leases, warranties, cost accounting, and the retirement and disposal of assets. A CMDB is a physical model of the IT infrastructure that is accessed by multiple ITIL processes to drive consistency among these processes. Both the CMDB and the asset management repository share the need for reliable configuration items (CI) in the IT environment. Understand the differences before you continue.
- **Develop a resource plan for implementing your CMDB.** Some specialized resources are required to actually implement a CMDB. You will need employees who can be CMDB administrators and who own the technology piece supporting the CMDB project. Discovery and mapping managers need to own the logical parts of the project, developing use cases and championing the CMDB to other process owners in IT. Other supporting roles such as server administrators, security administrators, database administrators, etc. are critical and play a supportive role in the ongoing deliverable.

## Phase Two: Requirements And Designing For Success

In this phase, you will determine the key requirements for the successful use of the CMDB. The key is to specify what you need for the implementation of the CMDB.

- **Define the use case.** The use cases determine a set of configuration items being addressed with the CMDB and describe how a set of views and maps of CIs can be configured. The challenge with use cases and the CMDB is that many other functions serve as a CMDB look-alike to support an ad hoc lookup process. Good use cases to start with are around root cause analysis, impact analysis, monitoring, compliance and governance, and data center relocation/consolidation.

- **Define a logical picture of the configuration management system.** The configuration items in the infrastructure need to be associated with each other. Their definitions, relationships, and the scope of their attributes need to be developed. The existence of discovery and mapping tools, which are part of BMC's Atrium, IBM's CCMDB, and HP's Universal CMDB are great tools to start gathering discoverable information.<sup>5</sup> In addition, ownership and duties of the CI owners need to be determined.
- **Develop a federation and reconciliation process.** To ensure that the CMDB is the trusted source, you need to develop a process to rationalize one or more instances of a configuration item that is discovered. Determine if they are the same or different in nature and if the relationships are still accurate. Additionally, a data filter should be designed, as not all of the discovered data will be important to you at this point.
- **Develop the CI life-cycle process.** To ensure that the CMDB is accurate and up-to-date, you must develop a process for updating the CI attributes, adding, changing, and deletion of attributes, and CIs. This is a key process once the CMDB is in production and becomes the center for good configuration management, which then can be leveraged by all other ITIL processes.
- **Decide whether to build or buy.** Once you have developed requirements and a logical plan, the next decision is to build or buy. The business case and resource commitments needed are a key input. For a buy decision, there are a variety of sources that can help. Organizations such as the itSMF and Pink Elephant are good sources of information. A variety of vendors today provide CMDB solutions as a subset of their change management solution; for example, BMC Remedy includes a version of Atrium.<sup>6</sup>

### Phase Three: Develop A Plan To Check And Audit The Data And Processes

This step involves the development of an audit process to spot-check the populated CMDB data for accuracy. You should develop a set of metrics to measure the accuracy of the data on an ongoing basis. Some examples include the number of request for changes (RFC) without corresponding CI updating and the percentage of inaccurate CIs.

A CMDB is only effective if it is up-to-date, as many processes such as change and release management, capacity management, and improvement of service management, rely on the 100% accuracy of the CMDB. You should insert a checkpoint to ensure that the configuration management process is followed.

### Phase Four: Construct And Maintain Your CMDB

The goal of this phase is to populate the CMDB with data from the infrastructure. As detailed below, there are three different ways to populate the CMDB.

- **Install the hardware and software.** If you have purchased a CMDB solution from a vendor, it needs to be installed and prepared to receive data. A homegrown solution should be installed and prepared as well. If federation of data sources is needed, then these data sources need to be integrated.
- **Populate the CDMB with discovered data and initiate the CI life-cycle process.** Use a temporary database to import data into your CMDB, applying filters and validation processes. The source can either be a spreadsheet, which is only used for the original population of the CIs, or data from a repository. This way, ongoing synchronization requires the use of reconciliation synchronization rules or the manual population of data. Once you have verified that you have the correct information, release the CMDB into production and close the loop by initiating the CI life-cycle processes determined earlier.
- **Run the CMDB administration process.** As with other databases, the CMDB depends on the effective management of ongoing processes to keep it up-to-date and functioning. This is not the management of the content — as that is done by the CI owners determined earlier — but rather the regular administrative work of physical maintenance, change control, and access and views. All of these are crucial to continuously providing a functioning CMDB to the processes of IT.

### Phase Five: Broaden The Scope And Go Back To Phase One

Once you have completed your CMDB population, addressing one particular business service, application, or a specific IT process, you should expand your scope with a follow-on project for other business services or IT processes following the steps outlined above.

#### RECOMMENDATIONS

##### PLAN, DO, CHECK, AND ACT WITH A SMALL PROJECT

Developing and implementing a CMDB should be a small project that is focused to allow for speed and quality. When you manage this the first time, you might find that it isn't as complete and streamlined as you might like. Use each pass through the process to capture learnings and apply and implement them in the next revision. The following actions will guide you through this:

- **Start small and use an iterative approach to gain early success.** The more focused and clear boundaries you have, the better off you are in developing a CDMB that captures the necessary information for the scope you determined, and the better off you are measuring and reaching your objective.
- **Don't let the CMDB become a project in and of itself.** The CMDB is a means to an end, not an end in itself. It is created to support one or multiple processes in IT operations. Start with creating the CMDB by supporting one process (e.g., change process) and then move to the

next logical (e.g., release management process). This ensures that updating of the CMDB data is a part of a process and not the responsibility of a team just doing CMDB work.

- **Choose between automatic or manual configuration management.** Size and frequency of changes at the CI level drive decisions on manual versus automatic configuration management; automatic configuration management is reliable but comes at a cost. However, manual updates on configuration changes are costly, and all of the information may not be known. Decisions made may be based on out-of-date or incorrect configuration information and can put a company's business service at risk.
- **Make a persuasive justification for your CMDB project.** It is easier to justify a CMDB project with a short time frame and as part of a key initiative. Excellent projects to latch onto and to develop a CMDB in parallel with are data center consolidation projects, performance improvement projects, capacity planning initiatives, and compliance projects.
- **Leverage what is already there.** If IT asset management is already part of the IT organization or done somewhere else inside the organization, then this could be a great starting point for the development of a CMDB. Many assets are also configuration items, but the information kept on them might vary. Also, the use case of an asset or CI is different.
- **Gain from past experience.** Once you have gone through the CMDB implementation once for a particular business service, a specific IT process you want to support, or as part of a strategic initiative, do it again with the next logical business service, process, or project. This way, you can gain from your past experience and improve what you have learned.

## ENDNOTES

- <sup>1</sup> In the 1950s, W. Edwards Deming proposed that companies measure and analyze business processes to figure out why products deviate from customer requirements. Source: The Balanced Scorecard Institute, The Deming Cycle (<http://www.balancedscorecard.org/bkgd/pdca.html>).
- <sup>2</sup> Rather than trying to shoehorn every single IT asset, application, and service into a CMDB, Forrester proposes the notion of a "just enough" CMDB. See the April 12, 2006, "[The 'Just Enough' CMDB](#)" report.
- <sup>3</sup> Federation enables multiple data sources to be brought together to represent a combined view. Multiple data stores that contain specific details on CIs can be linked to the CMDB. Reconciliation is the ability to rationalize one or more instances of a configuration item that is discovered and then determine if they are the same or different in nature and if the relationships are still accurate.
- <sup>4</sup> This self-assessment scheme is composed of multiple questionnaires that allow an organization to determine which areas should be addressed next to improve the overall process capability. Source: IT Service Management Forum Best Practice Self Assessment (<http://www.itsmf.com/bestpractice/selfassessment.asp>).

- <sup>5</sup> HP has now integrated the HP Universal CMDB. Now official, the merger between Mercury Universal CMDB and HP OpenView brings a number of very competitive integrations to the CMDB market. See the November 27, 2006, "[Application Mapping And The CMDB, Q4 2006 Update](#)" report.
- <sup>6</sup> The itSMF also has local meetings, which are a source for discussion and learning. Source: IT Service Management Forum (<http://www.itsmf.com>). PinkVerify is a service provided by Pink Elephant that compares products with the ITIL processes.