

The Value-Add CMDB

Introduction

The IT Infrastructure Library (ITIL[®]) prescribes a concept termed “Configuration Management Database”, or CMDB. ITIL sets forth a lofty definition of a CMDB¹, and Gartner defines four key design principles for them². Furthermore, the ITIL Service Management Framework defines a process called “Configuration Management” whose scope is the entire IT Organization (ITO)³.

With such complex requirements and large scope, it is easy to understand why designing and implementing a sound Configuration Management process and a functional CMDB has many ITOs scrambling for thought leadership! By the very nature of these best-practice definitions, the focus tends to be driven inward, toward the issues around individual CI data sources, CI data integrity, and agreement on CI definitions and relationships – not to mention typical issues encountered in implementing supporting infrastructure and changing the way ITOs do day-to-day work. Time will be better spent first defining the value Configuration Management and CMDBs provide to ITOs, as well as their customers, and basing CMDB strategy on how to deliver the most value to the ITO.

¹ Definition from “A Dictionary of IT Service Management Terms, Acronyms and Abbreviations”, Version 1, itSMF

² “CMDB or Configuration Database: Know the Difference”, Gartner, March 13, 2006

³ Definition from “IT Service Management Pocket Guide”, Version 2.1.a, itSMF

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To complicate matters, tool vendors have now begun developing and selling data stores resembling CMDBs, from their IT Governance and IT Service Management products, and touting the “new” value they can provide ITOs. Tool vendors are attempting to “extract & bottle” the very CMDB concept ITOs are struggling to define and implement. This industry development has occurred largely due to practitioner recognition that sound Configuration Management practices and data hold the key to extracting more value from Service Transformation Frameworks⁴, such as ITIL Service Management. Thus, it has become clear to ITO management, that, in order to mature IT Service Management capabilities in exchange for increased effectiveness and efficiency, the CMDB concept must be understood, harnessed, and implemented strategically within the ITO.

This is a period of transition and significant change for vendor CMDB products. The look and feel of a vendor’s CMDB in relation to best-practice is a moving target! Too much focus on the bits-n-bytes of implementing packaged CMDB software is a hindrance to successful strategic execution. Furthermore, some ITOs may attempt to build their own CMDB, using leading Service Transformation Frameworks, such as ITIL Service Management, as a guide. One fact is clear, though: Development of the CMDB as a strategic data repository in concert with other Service Management tooling is a necessary evolutionary step for IT Service Management – one that is occurring right now.

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⁴ Term explored in-depth in the whitepaper entitled “Service Transformation Frameworks” from Aeritae Consulting Group.

CMDB value to the ITO, and also to its customers. CMDB relationships to all IT Service Management processes and functions are the result of implementing a sound strategy. This paper proposes the value origins of the CMDB, how to explain this value in cross-functional IT/business terms, and practical steps that can be taken right now to move forward with these exciting developments around vendor CMDBs.

The CMDB and Value Chain Economics

The benefits to the ITO and its partners can be objectively communicated using the basic principles of value chain economics. Presenting the benefits of a strategic CMDB investment in terms familiar to IT executives and their business partners will make it much easier to build the business case for the project.

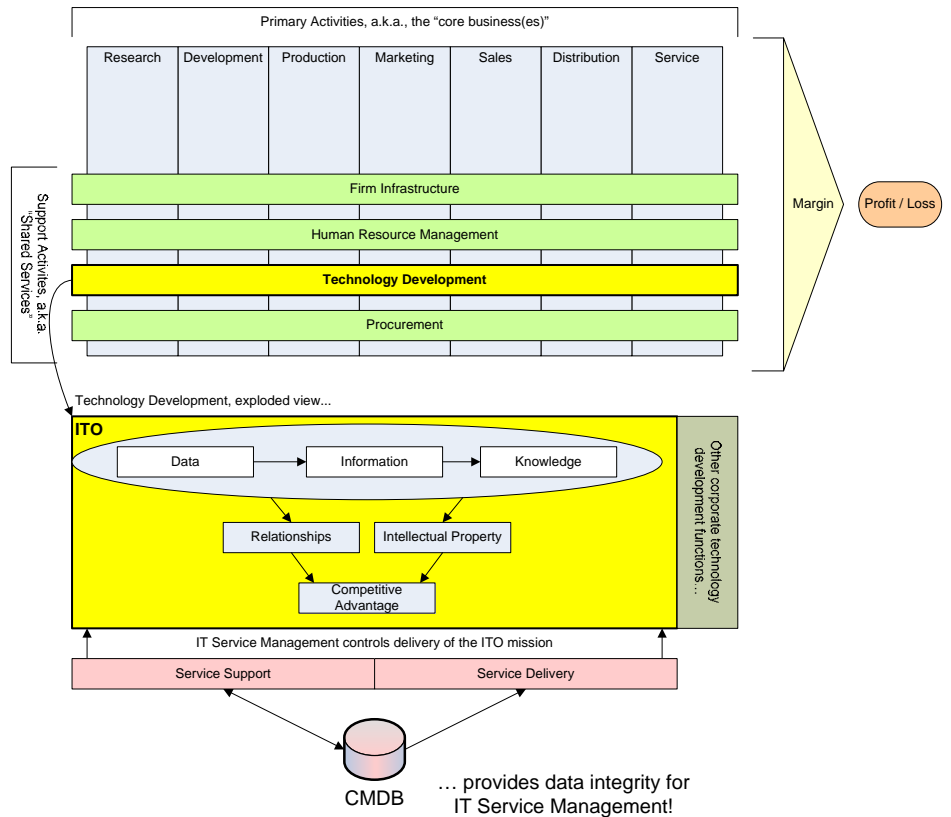
In a nutshell, a “value chain” is a real-world collection of partners collaborating to create and optimize the value of products or services for the partners and the consumer through value-add activities. Popular supply chain economics opened ITO management to treating IT as a supply chain problem, where business demand for services created surpluses & backlogs within IT that require optimization to maximize the benefits to the enterprise.

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Value chains inject a much needed piece of common sense into the concept of supply chains – that of being a partner to everyone involved, rather than just treating one end of the equation as a supplier, and the other as a customer. Suppliers and customers simply become critical partners in fulfilling the mission. This maturity of concept from supply chains to value chains is a much better organizational fit for ITOs, because, ultimately, an ITO is a partner with one or more core businesses such as financial services, manufacturing, or government. There should be a

two-way appreciation of talents between ITOs and core businesses – also known as “alignment of IT with the business.”

The following diagram helps visualize how the ITO, IT Service Management, and the CMDB contribute to the business value chain. Here, the shared-service support process called “Technology Development” is used to describe all efforts to leverage technology in support of the core business activities to create a relative competitive advantage in the marketplace. Within Technology Development, we find the ITO.



A well designed and accurate CMDB is a critical path between IT Service Management, IT Operations and IT Governance processes in support of core business activities.

Figure 1 – ITO, IT Service Management, CMDB contribute to business value.

The ITO exists primarily to manage corporate data, transform data into information and knowledge, and streamline processes and procedures, by increasing efficiencies and effectiveness within core business activities. IT Service Management activities propel ITO capability toward ever-higher levels of consistency, repeatability, efficiency, and effectiveness. A well designed and accurate CMDB is a critical path between IT Service Management, IT Operations and IT Governance processes in support of core business activities.

Developing the CMDB to Provide Value

Understanding how a vendor's CMDB will enable greater efficiencies and effectiveness within emerging Service Transformation Frameworks, such as ITIL, requires ITO leadership explain these benefits in business terms. These conversations will typically be raised by the following events:

- Strategic marketing of CMDB by vendors

Vendors who market management tools within the IT Governance and IT Service Management space have developed some additional value-add logic around their data repositories, and now market this repository as a strategic CMDB product to ITOs. Benefit: Lower initial investment costs, as the ITO no longer has to invest in a complete suite of IT Service Management tools, but instead can purchase only the data repository and its associated workflow.

- Development or enhancement of an existing CMDB utilizing internal resources

IT Service Management leadership within the ITO determines in-house development of a strategic CMDB is required to continue to mature other IT Service Management process capabilities of the ITO – most

commonly in support of ITIL Service Support processes, but increasingly in support of ITIL Service Delivery processes and regulatory compliance. Benefit: An requirements-driven solution designed to address specific ITO initiatives without over-engineering.

- More often, however, a combination of the above items is the disruption.

This is usually made possible since the ITO already owns a vendor-supplied IT Governance or IT Service Management tool containing a CMDB-like repository that, with further analysis, might provide a foundation for a strategic enterprise CMDB. Benefit: Reuse of an existing tool investment with focus on ITO requirements and the implementation of only the IT Service Management components immediately adding value.

Current CMDB-like data repositories being marketed by vendors are creating many more questions than answers. What was previously a relatively straightforward Service Management tool offering – such as an incident-problem-change management tool, version and release management tool, or availability-performance-capacity management tool – now typically appears as a feature within a suite of tools, usually filed under “IT Service Management” or “IT Governance”. And at the center of the more visionary toolsets is a discrete data repository vendors have begun calling a CMDB, with a few even providing toolkits for further development and integration of the CMDB.

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Despite the initial confusion this tends to create with customers, this is a good start! As with most new, disruptive technology developments, there are pros and cons for ITOs as detailed in Table 1.

Pros:	Cons:
<p>Vendor commitment to IT Service Management principles is evidenced in major tool investment & development activity</p> <p>Vendor recognition of the importance of a CMDB to IT Service Management processes evidenced in delivery of discrete CMDB-like products</p> <p>Vendor commitment to configuring IT Service Management tools to store data in standard SQL databases for easy customization and integration with the IT enterprise</p>	<p>Vendor CMDBs being offered are not typically engineered as ITIL CMDBs, but are instead combined data models for the vendor's suite of apps</p> <p>Gartner's four critical CMDB capabilities not being delivered well by vendors, necessitating custom development around the new vendor CMDB to achieve value ⁵</p> <p>No comprehensive Configuration Management process integration and automation help from tool vendors yet; still many customizations and scripts being written to gel processes together</p>

Table 1 – Vendor CMDB Products: Pros and Cons

We are witnessing the beginning of a very exciting period for IT Service Management and supporting vendor tools: ITOs and their suppliers are talking the same language! What's more, the core business can also understand IT Service Management terminology and taxonomy! An ITO can now, more feasibly than ever before, make a sound, incremental investment in true Configuration Management process architecture, development and deployment, thanks to the appearance of configurable, extensible, and customizable CMDBs inside new revisions of the toolsets an ITO may likely already own.

⁵ "CMDB or Configuration Database: Know the Difference", Gartner, March 13, 2006

Reaping Value NOW From Vendor CMDBs

Even though many CMDB implementations are in their first phases, and vendors are still morphing their CMDBs to meet customer needs, there are currently some very compelling business cases for making immediate strategic investments in vendor CMDBs:

- Supercharge your service management, governance and compliance initiatives

There is no doubt – a well-engineered CMDB provides the solid foundation all IT Service Management frameworks need to achieve the higher levels of organizational capability. This enables IT to transform from a cost center, to a strategic partner, and ultimately, a corporate competitive advantage. These benefits have their roots in providing fresh, useful CMDB *data* in the form of useable *information*, turning *tribal knowledge* about the ITO infrastructure into captured knowledge. Incidentally, this data, information and knowledge can support compliance with SOX requirements and other IT auditing needs, both external and internal.

- Foster cross-organizational alignment, integration and cooperation

Through the establishment of the role of “Configuration Manager” and a Configuration Management Team, the core business and IT can begin to share taxonomy of technology resources, leading to transparency of dialogue in requirements discussions and financial management. Also, within the ITO, historically vertical departments begin to align, because they all have configuration items to track, and processes and procedures around managing them.

- Support management tool architecture initiatives:
When seriously looking at integrating a vendor CMDB with existing management tools (such as tools for monitoring, incident-problem-change management, capacity management, service level management), it is often discovered there is very little rhyme or reason to selection of tools for these strategic processes within an ITO. Sometimes, ITOs get lucky during this realization, and the toolsets are extensible and integrate satisfactorily with the new CMDB. More often, however, some adjustment is needed in the ITO's management tool portfolio – many times, this adjustment includes cost savings through redundancy elimination. CMDBs are great continual improvement rallying points, not only for IT management and governance disciplines, but also for the very architecture of the management infrastructure itself.

How can an ITO begin reaping the values that vendor CMDBs provide?

- Gain and maintain executive and management support:
Most executives and managers will welcome any well-planned program providing a single consistent enterprise repository for ITO configuration items. Don't expect full-fledged commitment and support at the beginning, rather, conduct an assessment and provide a program milestone roadmap that is aligned with the culture and finances of the ITO and the business(es) it supports. And be ready to deliver in increments. One proven method is to organize a configuration management program into releases with defined resource requirements – that way, the program has a financial "gas-pedal", whose effect

on ITO configuration management capability is well defined.

- Establish a Configuration Management program.

ITOs typically have budgets to support help desks, change management, capacity management, infrastructure and application monitoring, and release management... Similarly, Configuration Management must be supported with program-level resources. This can begin immediately with partial allocation of existing FTEs to development and steering of program strategy, scope, roles, responsibilities, processes and procedures. Once the program is established, additional investment is made to: (1) support a Configuration Management lead role, (2) conduct a tool architecture assessment (see #1 above), (3) invest strategically in CMDB development, possibly a vendor's CMDB, (4) expand and/or augment the configuration management team, (5) educate all ITO roles of the importance of a configuration management program.

- Perform a management tool architecture review, process assessment, and gap analysis.

Include all IT systems management, IT service management, and IT governance tool domains in the analysis. Obtain assistance (internal or external) in analyzing ALL your infrastructure management tools in the context of a Service Transformation Framework, such as ITIL, paying specific attention to relationships to a CMDB. Be on the lookout for: (1) gaps in functionality preventing key process execution or process integrations with a CMDB, and (2) anything already installed in the ITO that might fulfill the requirements of a CMDB – it could be that you have a suitable CMDB platform already!

- Create a configuration data sourcing strategy.
Successful configuration management programs and CMDB projects have this common trait – the success of the program depends on the management of the data. The role of the Configuration Manager must include liaising with all the ITO areas that have useful data, defining the data sourcing processes, roles and responsibilities, and formalizing the packaging and delivery methods for data sharing.

When starting an initiative to utilize a vendor’s CMDB as the automation tool for a new or existing configuration management program, Aeritae recommends the following approach:

- Analyze gaps in vendor implementations
Very few, if any, vendor-supplied CMDB products meet the current four-point functionality standard made popular recently by Gartner⁶: (1) CI Reconciliation, (2) Data Federation, (3) Controlled Synchronization, and (4) Mapping and Visualization. In the current field of products, an ITO must first determine which of these four critical CMDB functions they are capable of shoring up with additional development work, since each vendor tool has its own particular weaknesses. Also, expect the requirement for data schema extension – do not hold out hope for the “magic schema”. Every ITO has different data to work with – this is truly an area where every ITO is indeed different!

⁶ “CMDB or Configuration Database: Know the Difference”, Gartner, March 13, 2006

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- Treat as an enterprise level application

Partner with the data architects and the data management organization. CMDB architecture and program planning and management must be treated as an enterprise data management problem. And with that comes a need for a fresh perspective on whether or not the potential CMDB choice has a data schema that aligns with the requirements of the ITO

- Review existing alternatives

For new configuration management programs, do not underestimate the value of having a “suitable” tool already available (e.g., populating the “asset” portion of your existing help desk automation tool). A fresh analysis within the context of an incrementally-planned configuration management program might mean that the quick wins at hand don’t require a new tool purchase. If a more capable tool is required due to program maturation, then hey – nice problem to have!

Conclusion

Configuration Management and CMDBs provide unmistakable value to ITOs of all IT Service Management maturity levels. Due to actual or perceived forces, tool vendors have begun developing CMDB-like entities within their toolsets. As a result, many ITOs are finding they are already entitled to products that may be able to satisfy emerging needs for a CMDB. Many other ITOs are searching for a CMDB-like product suitable for their enterprise. When choosing to leverage a vendor’s CMDB, do not expect to find a tool that does everything well. Place initial value on extensibility and data transparency. There is currently no turnkey solution!

The cornerstone of the program should revolve around data, and the technical challenges should be treated as data architecture and data management problems.

In either case, it is very important to start with a well architected configuration management program, with an emphasis on long-term roadmaps, incremental delivery and executive support. The cornerstone of the program should revolve around data, and the technical challenges should be treated as data architecture and data management problems. The engine of the configuration management program should be fueled through liaisons with all ITO areas in the form of contracts for CI data sharing, in exchange for information provisioning, usually in the form of reports or downstream tool integration.

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