Service Alignment Through the CMDB and Service Catalog

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SERVICE MANAGEMENT

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Executive Summary

Challenge

Most IT organizations struggle to bridge the gap that divides themselves from the lines of business (LOB) they support. IT typically focuses on assets they manage and maintain and not on how those same assets contribute to the services their business users consume. On the other hand, the LOB is focused on its core business processes, whether it be making products, processing a quote for sales, managing suppliers or any one of the many processes they perform on a day to day basis. Regardless, today's economic environment puts IT under even greater pressure to reduce operational costs and demonstrate business value. Meeting this challenge is difficult when the relationship between operational IT resources and business value is unknown.

Opportunity

The alignment of IT with the business organization is not a new challenge, but we do have new opportunities to leverage best practice methodologies and technologies to close the chasm that separates these organizations from tighter alignment. The emergence of the Information Technology Infrastructure Library (ITIL®), as well as the evolution of the roles of a configuration management data base (CMDB) and the Service Catalog present IT with a viable opportunity to uniquely address this challenge. ITIL provides some of the guidance on structure, process and terminology. The CMDB allows IT to establish the operational view of a service by modeling and relating the various configuration items (CIs) that contribute to the overall construction of a service. The Service Catalog enables IT to then take another step forward and expose service attributes such as SLAs and financial metrics relevant in a business context to the appropriate LOB service consumers.

Benefits

By bringing all the components (process-based methodology, the CMDB and the Service Catalog) together in an integrated solution, an organization can expect to:

- Improve business user understanding, and thereby relevance and value of IT, which correlates to:
  - Satisfaction and quality perception of IT capabilities;
  - Recognition of the cost/value for IT.

- Improve IT's awareness of their contribution to the business goals and objectives, which correlates to:
  - Better alignment of IT resources to business critical needs;
  - More accurate planning and design of IT services to support long term business objectives.

Business Challenges

Today's Environment

The complexity of today's distributed IT environments and the organizational silos still prevalent in most enterprises obscures the relationships between IT resources and the services IT provides to generate business value. In addition, businesses are struggling more than ever with the decreasing levels of business opportunity caused by an overall weakened global economy. There are limited sources of capital available to most businesses. Costs for goods and labor are increasing while the average consumer tightens their budgets and reduces it's spend. These complexities are requiring innovative ways to address the age old question: "How to do more with less." IT is not immune to these challenges.

IT's Quest for Alignment

In these challenging times, IT continues to face the issues of how to support their business needs for computing resources in a manner that provides high value for the investment made. Coupled with this challenge of ensuring higher returns on investment (ROI) is the need for IT to evolve into an enabler for the business. This evolution requires IT to move from the typical support and administrative function into a strategic guidance role within the organization. Furthermore, IT needs to ensure it better aligns its resources (specifically investments and operational costs) to how these resources directly enable business goals and provide organizational value. This means that IT resources and infrastructure needs to be mapped to the IT services they support, and in turn those IT services must be correlated to the appropriate business services and processes they enable. Without this type of alignment IT cannot effectively prioritize how it utilizes its resources or provide accurate traceability and transparency of purpose to its business stakeholders.

Leveraging a CMDB and Service Catalog Solution

To gain efficiencies and deliver directly on business defined goals and objectives, alignment under a common or unified view of services is critical. This level of association requires IT to not only define what it does in context of business relevant services, IT also needs to map and relate the applications, databases, servers, networks and various other infrastructure resources to these services.

Traditionally this is done from an IT perspective using infrastructure monitoring tools and creating containers for associating different IT resources into a relational model for describing a business process — though in actuality these related containers do not support the critical link between the business organizations consuming the service and IT as the service provider. In addition they may not contain the specific business focused service levels and associated costs that the business requires to run their business.

CMDBs are designed to map IT resources to a single view of universally defined services allowing all the people, processes and tools across IT to use a common reference point for making sound operational decisions about technical components based on their role in providing a business service.

The CMDB is able to provide a rich set of relationships between services and the underlying components that support it. It provides an important mechanism to enable improved decision making and critical analysis using accurate details on the current use for IT infrastructure.

Service Catalogs by themselves provide the business facing view of the available IT and business services. Service Catalogs describe the service in business terms and provide IT a platform to communicate service functionality, cost/pricing, and performance information to the business organization.

Service Catalogs should be thought of as business tools that allow service delivery or business managers to articulate a service provided by IT. In some cases the Service Catalog will function as a product ordering/request catalog such as for laptop or Blackberry services and in other cases the Service Catalog will host enterprise class services such as email or web application hosting services. The definition and description of services will vary and will be determined by the supported business objectives.
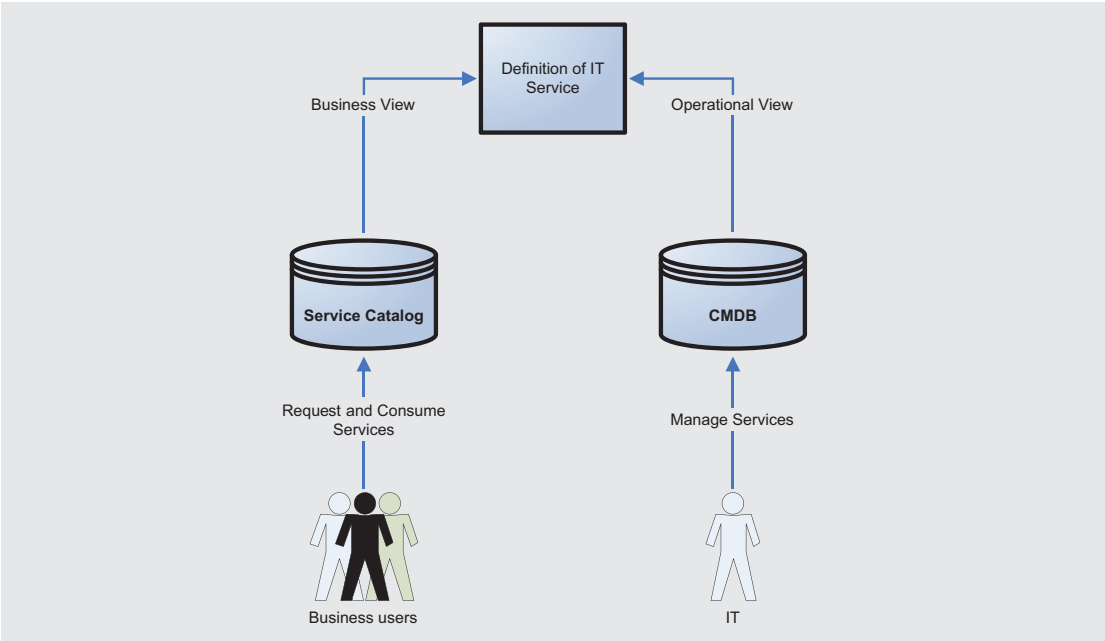
Service Catalogs have evolved from being merely a listing of services, to an automated fulfillment and provisioning solution that interacts with many parts of the business and IT to coordinate the management, delivery and chargeback of services.

A Service Catalog solution when integrated with a CMDB helps align the operational view of the configuration items (IT applications and infrastructure that make-up the services) with a business view of the performance focused contracted services. This ensures that the CMDB has a business-centric view of service configurations. The integrated approach enables an IT organization to provide a common interface between the business and IT to define, design, deliver and support services based on contracted agreements for service function, cost and quality. As the following diagram represents when an organization has an integrated CMDB and Service Catalog a holistic view for both managing business demand and expectations is appropriately aligned with how the service is delivered and supported by the provider organization.

Figure 1

BUSINESS AND
OPERATIONAL VIEWS
OF AN IT SERVICE

With this integration, Service Catalog defined services are associated with CIs in the CMDB that make-up the service. Through this relationship, an organization can trace its dependencies to related services and have a holistic view of the service structure. For example, a Change Manager can determine the impact of CIs on services. When a specific change affects a CI, the Change Manager can use impact analysis tools to determine which services are affected by a specific change and can then notify the organizations and users that are subscribed to the impacted services as well as assess the impact on any SLAs. This information helps an IT organization have greater visibility into changes and the impacts they have on the business users and the SLAs they have been contracted to deliver.

Through this CMDB and Service Catalog integration an organization manages change with a business-centric view. When changes in infrastructure assets (software and/or hardware) or CIs are being considered, Change Managers and Service Owners/Business Owners need to understand the impact on affected services as well as the potential impact to the business. For example, if a web server needs to be brought offline to be upgraded, the affected business services that are supported by that server need to be considered as part of the overall change process as well as other configuration items associated with that server. The integration of the service view, through an integrated CMDB and Service Catalog, allow for the visibility into the business service impact, the SLA and/or pricing impact on the change to that service as well as any potential impact to additional related CIs, services, or subscribed organizations.

Without this integration, problems that can result include:

- NO SINGLE OR UNIFIED VIEW OF SERVICES. Limits IT's ability to manage the service and its lifecycle resulting in multiple service listings, ineffective use of IT resources and unmet expectations of business needs

- NEGATIVE SERVICE IMPACTS. A technical component not seen to be part of a service is changed resulting in it not performing at a level required to support the level of service quality expected by the business

- REDUNDANT TECHNICAL SERVICES. e.g. multiple sets of assets/people supporting different services when they all perform essentially the same function but for different services

The Benefits of an Integrated Soluton

There are many benefits for having a single view of the truth by providing an integrated solution to IT and the business consuming the services. From an IT perspective the key beneficiaries would include IT Operations, Infrastructure Architects, Service Designers/Delivery Managers and Change Managers. From a Business perspective the End-Users initiating requests, Business Service Managers and Business Unit Managers would also benefit.

Benefits of an integrated CMDB and Service Catalog solution include:

- Enables IT to make infrastructure and application decisions based on an accurate understanding of business impact, including:

  - Ensuring all components that a business service relies on have the performance and capacity characteristics required by the contracted service function and appropriate service level attributes
  - Performing root cause analysis on a business-reported service disruption that may cross application boundaries
  - Assisting with the proper prioritization of which incidents to address first
  - Reducing the risk of infrastructure change related failures for newly provisioned services

- Enables service designers to
  - Simplify the creation of service definitions by utilizing existing CIs in the CMDB or creating new CIs and placing them within the CMDB maintaining a single source of all service definitions
  - Define more efficient, repeatable service fulfillment workflows
  - Identify redundancies in technical services
  - Enables CMDB managers to more accurately and efficiently gain visibility into business service models

- Improves business alignment by providing IT with a shared view of how IT components are configured together to support business critical applications and services – resulting in the CMDB having a Business-centric view of services

The integration of CMDB and Service Catalog greatly improves the alignment of the services that IT provides with the services that are published to the Business. It allows the business definition of the service to remain in business terms but effectively associates them to IT infrastructure configuration items. We see a complete and unified view of a service from the business use to the technical building blocks.

How to Approach

Planning and Designing the Solution

Once an organization has recognized the need and value of an integrated CMDB and Service Catalog solution to define and manage services, the next step is to determine the right approach for their organization. The options for implementing an integrated solution could include:

- Implementing the CMDB and then the Service Catalog;

- Implementing the Service Catalog and then the CMDB;

- Implementing both solutions together.

Each of these options may have varying results depending on the goals of the organization. As an example, an organization can gain control for how they utilize IT resources through the support and delivery of IT services while mitigating change impacting risks to the continuity of those services through an adoption of a CMDB. They can then enhance the solution through alignment and integration with the Service Catalog to better understand the relation of those CIs to the business organization and their consumption of services.

On the other hand, there are also potential risks for each of these implementation options. One possible risk with the first two options is that without diligent planning and design considerations, major re-work may be needed after implementing the first ½ of the solution. For example, if an organization was to implement a CMDB with a focus on the operational view of services through mapping and relating CIs into a service they may miss the opportunity to capture Service Catalog focused attributes for the service (such as SLA requirements, costing/pricing details, business-focused service descriptions, etc.). This may require the organization to restructure the definition and model of a service within the CMDB when they start the implementation of a Service Catalog. To limit this risk it advised that organizations have an outline plan for how they intend to map and define services. This mapping and definition process should incorporate input from the various service owners and process participants. Service owners should be able to identify the various views of the service that are required in order to understand how the service is aligned to business need and use, as well as IT operational support and delivery processes. Representation from the various process owners (including the business processes they services may support) during the service definition process will ensure all requirements are appropriately planned for.

Another example would be the organization that starts with the Service Catalog with only a focus on the business relevancy and definition of the service without a tie to the operational resources that make-up the service. Again in this scenario, re-work may be necessary to ensure a unified view of the service is available from the integrated solution if a diligent service definition process is not undertaken with appropriate representation from the organization.

The third option mentioned, implementing both CMDB and Service Catalog in parallel can also be challenging. This approach has many of the "big bang" project issues, such as too much scope and in many cases can include long and exhaustive implementation cycles, where the business or customer expectation grows, the longer the project continues.

Whether implementing just a CMDB, or just a Service Catalog or both, a key item to understand is that there are really two major deliverables of the implementation. The first is the delivery of a set of defined services for managing in the appropriate product solution(s) and the second deliverable is the actual product solution(s) with the supporting management processes and technologies. What this means is that an organization implementing both a CMDB and a Service Catalog needs to first plan for how they will define and rollout services. This may require the interaction of business stakeholders, process owners, and IT delivery and support teams to coordinate the definition of these services. They will need to define these services in the context to how they will be viewed, such as the business view via the Service Catalog and the operational/technical view via the CMDB. Following this process will help ensure a successful implementation.

In each of the three implementation approaches an understanding of the services will drive the rollout of the technology used to view and manage the services (CMDB, Service Catalog or both).

By having a full understanding of the possible challenges of each implementation option, and properly planning for each of the components of the solution an organization can choose any of the approaches and realize a successful outcome. It is only through detailed planning and design of how services will be defined, modeled and built via an integrated solution (CMDB/Service Catalog) that an organization can realize the benefits of the solution. Even if an implementation will only initially include the CMDB for mitigating change related risks to business critical CI's, by adequately planning for how services will be defined and "cataloged" an organization can significantly reduce any impact on a later implemented Service Catalog.

The following section describes the scenarios for which an organization may choose one of the three implementation approaches. In each approach, the organizational requirements and prioritization of those requirements is the primary driver for deciding which option makes the most sense for that organization.

Starting with a CMDB

An organization that decides to start with a CMDB should do so based on prioritized requirements for a CMDB solution. The CMDB is primarily responsible for managing the operational view of the most critical IT services that support the organizations main business activities, including the technical make-up and relational structure of the service. An organization with the following priorities should consider starting with the CMDB:

- Mitigation of risks for the change to services;

- Reducing the elapsed time to resolve change related service outage;

- Visibility into the operational landscape of the IT organization (architectural view of the computing resources and their alignment to services);

- Understanding of computing resource relationships (Apps to Databases to Servers to Network).

In general if the priorities for defining services are associated to supporting the service support processes (configuration, change, release and even incident/problem management processes) then it is best to start with the CMDB.

If an organization decides to start with the CMDB, then it needs to ensure that as it starts to define the CMDB services, it also captures the requirements for the business view of the service and the consumers of that service. This will allow the organization to model the service in context to how the integrated CMDB/Service Catalog solution will leverage the unified view of the service and limit any re-work when implementing a Service Catalog.

Starting with a Service Catalog

For the organization that starts with an implementation of the Service Catalog, their requirements may include:

- The ability to define and design services in business context using business terminology;

- Publishing services to the business organizations that consume those services in order to provide transparency of IT capabilities, service costs/prices, and/or service performance;

- Easing and automating the process for user requests/subscription to services.

The requirement priorities for starting with a Service Catalog are typically going to be more business focused and include items such as business transparency, ease of communication between IT and the business and greater control and management of the delivery of services.

An organization that starts with the Service Catalog needs to ensure that as it models services in the context of business use to consider the technical make-up and relational structure of the service.

By having an understanding of not only how the service will be cataloged and published to the business but also how IT will align its resources to support that service (through CIs), the organization will be prepared for any future implementation and integration of a CMDB. Additionally, the organization will have better visibility into the costing and provisioning requirements for the service.

Implementing Both CMDB and Service Catalog

When an organization has prioritized requirements for both the business view and the operational technical view of a service then it may be necessary to consider a multi-product implementation. While the implementation of two major components of a service management solution may first appear daunting and to some incredibly difficult, there are some ways of implementing an integrated CMDB and Service Catalog in parallel. First off an organization must recognize the potential pitfalls with approaching a multi-product implementation, these could include:

- **"CHANGE — TOO MUCH, TOO FAST."** In most organizations the implementation of a CMDB or a Service Catalog can introduce change. These changes can be process oriented and in certain cases can even be organizational in nature (i.e., reorganization of IT to a service aligned organization). Management of change through active communications, detailed planning, and organizational readiness will be critical.

- **SCOPE MANAGEMENT AND CONTROL.** It is always important to manage scope, first to ensure delivery of the project requirements and secondly to prevent scope creep from impacting the delivery of requirements. When implementing both a CMDB and a Service Catalog scope of the services as well as the products will be very important to manage. One specific item to note is to further limit the number of services that are initially defined and implemented in the products. You need to build from a single business service the associated CIs for the first 30–60 CIs and map the relationships and attributes necessary to be successful and build from there.

- **TIME TO VALUE.** Just the design and installation of two products (versus a one product project) increases the timeline of a project, with solution products like the CMDB and Service Catalog this is a larger impact due to the other implementation tasks associated to these process intensive solutions. An organization that is going to implement both solutions should be prepared for longer project timelines which will increase the time before value is realized from the solution.
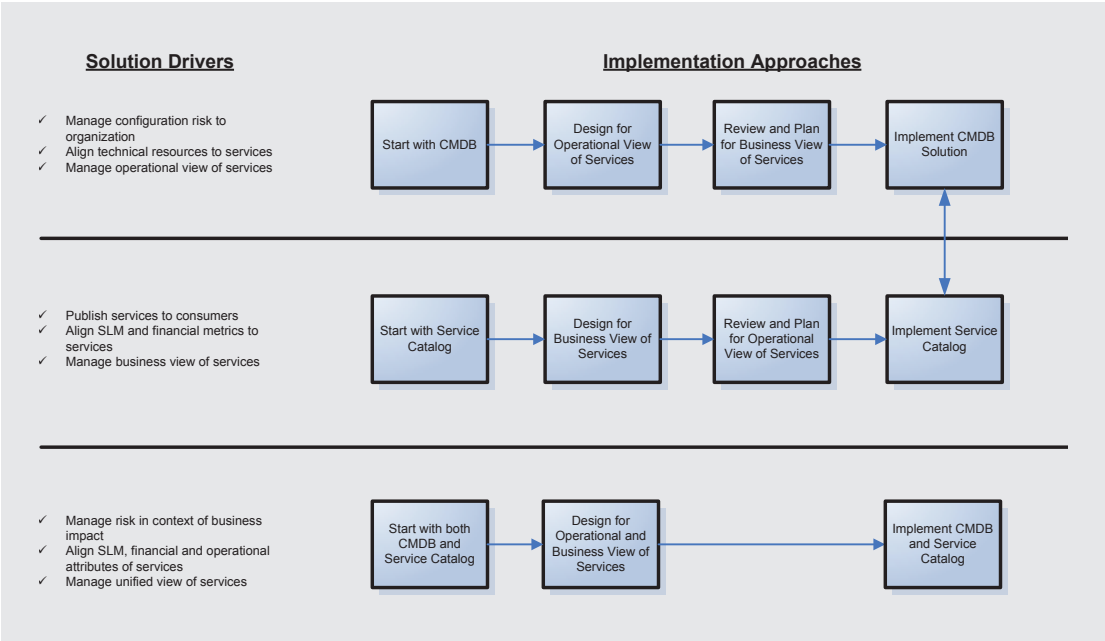
As long as an organization recognizes these issues, as well as the individual CMDB and Service Catalog specific items previously mentioned a multi-product implementation can successfully be performed.

The following diagram highlights some of the key solution drivers for determining which approach to choose:

Figure 2

IMPLEMENTATION
APPROACHES

Figure 2: Implementation Approaches

Solution Drivers

Implementation Approaches

- ✓ Manage configuration risk to organization
- ✓ Align technical resources to services
- ✓ Manage operational view of services

Start with CMDB → Design for Operational View of Services → Review and Plan for Business View of Services → Implement CMDB Solution

- ✓ Publish services to consumers
- ✓ Align SLM and financial metrics to services
- ✓ Manage business view of services

Start with Service Catalog → Design for Business View of Services → Review and Plan for Operational View of Services → Implement Service Catalog

- ✓ Manage risk in context of business impact
- ✓ Align SLM, financial and operational attributes of services
- ✓ Manage unified view of services

Start with both CMDB and Service Catalog → Design for Operational and Business View of Services → Implement CMDB and Service Catalog

Conclusions

Many IT organizations have aligned themselves or are considering the alignment towards a service focused organization with the supporting processes and tools to ensure they appropriately relate their functions to the business need. The use of a CMDB provides many of the capabilities to realize this alignment, specifically the ability to understand how the IT resources contribute to the support and delivery of IT services. The CMDB enables the IT organization to better understand and analyze incidents, problems, and changes in the context of these services.

The Service Catalog plays an equally important role for these organizations working towards greater business alignment. The Service Catalog allows the organization to map the defined service including function, quality and cost attributes in business terms that more easily allow the service consumers to understand and fully leverage the services IT provides. It provides a standard set of deliverables published in a standard tool, rather than the many request or ordering systems that most large organizations have. The Service Catalog serves as a communication vehicle to articulate performance and financial metrics that are important to the business stakeholders.

A combined and integrated CMDB and Service Catalog solution is a powerful ITSM solution. The multiple views and dimensions of an IT service are able to be represented for clear and consistent communication of what IT does for the business and how.

There are multiple options to consider when implementing these integrated products, but it is always important to understand the goals trying to be achieved, plan for the long term solution and define a service model that allows for growth and evolution.

Most organizations today have embarked or planning on implementing a CMDB and it is clear there are many advantages to the IT part of that organization in terms of realizing the relationships between the IT infrastructure that support the business. It also benefits the organization's business community who rely on business applications and services because the CMDB enables incidents and problems to be analyzed, root cause identified more readily than relying on infrastructure monitoring tools alone. While the services defined in the CMDB tend not to be in a state that can be readily consumed by the business community this can be overcome by having the definitions refined and aligned to provide business context. Information such as service pricing needs to be modeled and exposed, the process for approval and fulfillment needs to be defined and documented and most importantly is the need to define the business Service Level in mutually agreed upon service contracts or Service Level Agreements. The Service Catalog then exposes or publishes these business services to the various business communities to be consumed.

The three implementations options discussed earlier each have their individual considerations:

- STARTING WITH THE CMDB provides a good understanding of the underlying infrastructure, applications, though there will be some work in defining the business view along side this technical view.

- STARTING WITH THE CATALOG offers a centralized location for defining services completely from a business perspective and publishing these service definitions to the business, though there will be some effort required to map these business services to the IT related services and components.

- IMPLEMENTING BOTH CMDB AND SERVICE CATALOG provides an optimal solution for designing services from business and IT perspectives though can be viewed as a more complex approach.

Whatever course of initial action is taken, an important first step is IT analyzing the key priorities and issues within the business so involving the business stakeholders early on in the process will greatly assist in determining the best approach.

About the Author

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