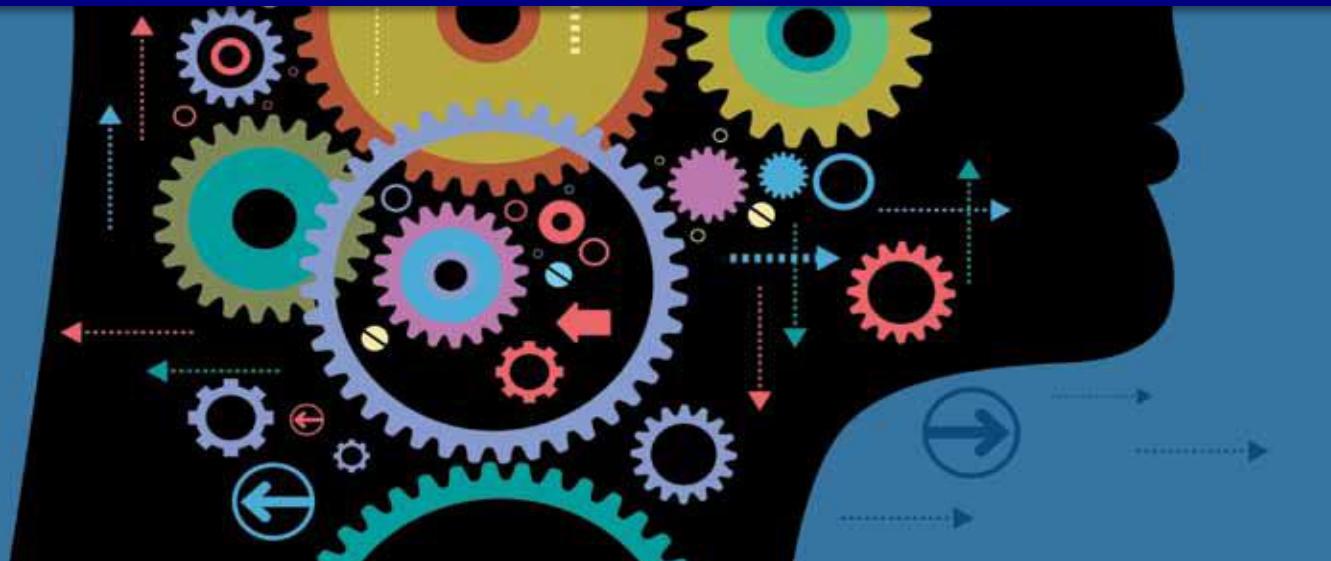
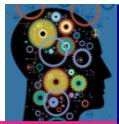




MANAGING & ORGANIZING THE ITSM OPERATING MODEL

“Funnel Through The Pipe Into The Power Plant”





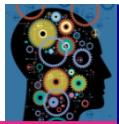
Executive Summary

The organizational capability to deliver and manage IT Services requires more than sound ITSM processes. There is a growing trend amongst IT organizations to transition from a traditional technology-based hierarchical structure to a Service Based Organization (SBO). A SBO is specifically organized and focused on delivering IT services throughout all stages of a service lifecycle. Although technologies must still be managed effectively and efficiently, delivering value through services requires a different Operating Model. A service-based operating model provides guidance for managing service delivery as an IT value stream.

An Operating Model is a logical representation or blueprint of the IT value chain process architecture, agnostic to existing organizational structure and sourcing strategies. It provides a strategic framework to support the goals of the Enterprise IT Governance activities of Evaluate, Direct and Monitor. An IT Operating Model enables governance objectives through the definition of a reference model that identifies and defines the major activities, capabilities, process dependencies and critical success factors required to directly or indirectly convert customer requirements or requests, into the expected service outcomes and deliverables.

This document outlines the key concepts that describe an Enterprise IT Operating Model (see Figure 1). The IT Service Management (ITSM) Operating Model consists of five integrated domains:

- Customer Engagement
- Design/Build/Test/Deploy
- Operations Excellence
- Governance
- Continual Improvement



This paper will provide an expansion of the IT Operating Model at three levels – each level providing greater granularity and guidance on how the operation can function in an organization. The five domains are further supported by organizational capabilities. Specific processes then interact to deliver capabilities through a set of activities to achieve individual domain objectives.

The concluding section recommends guidance for practical implementation or roadmap for implementing the Operating Model, and guidance for how to structure or define an organization that supports it.

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*A service-based
operating model
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for managing service
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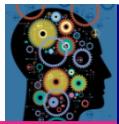


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1) THE OPERATING MODEL – PROCESS ARCHITECTURE

The Operating Model consists of five domains that are integrated to support ITSM. Figure 1 illustrates the domains and the high-level integration points for each domain.

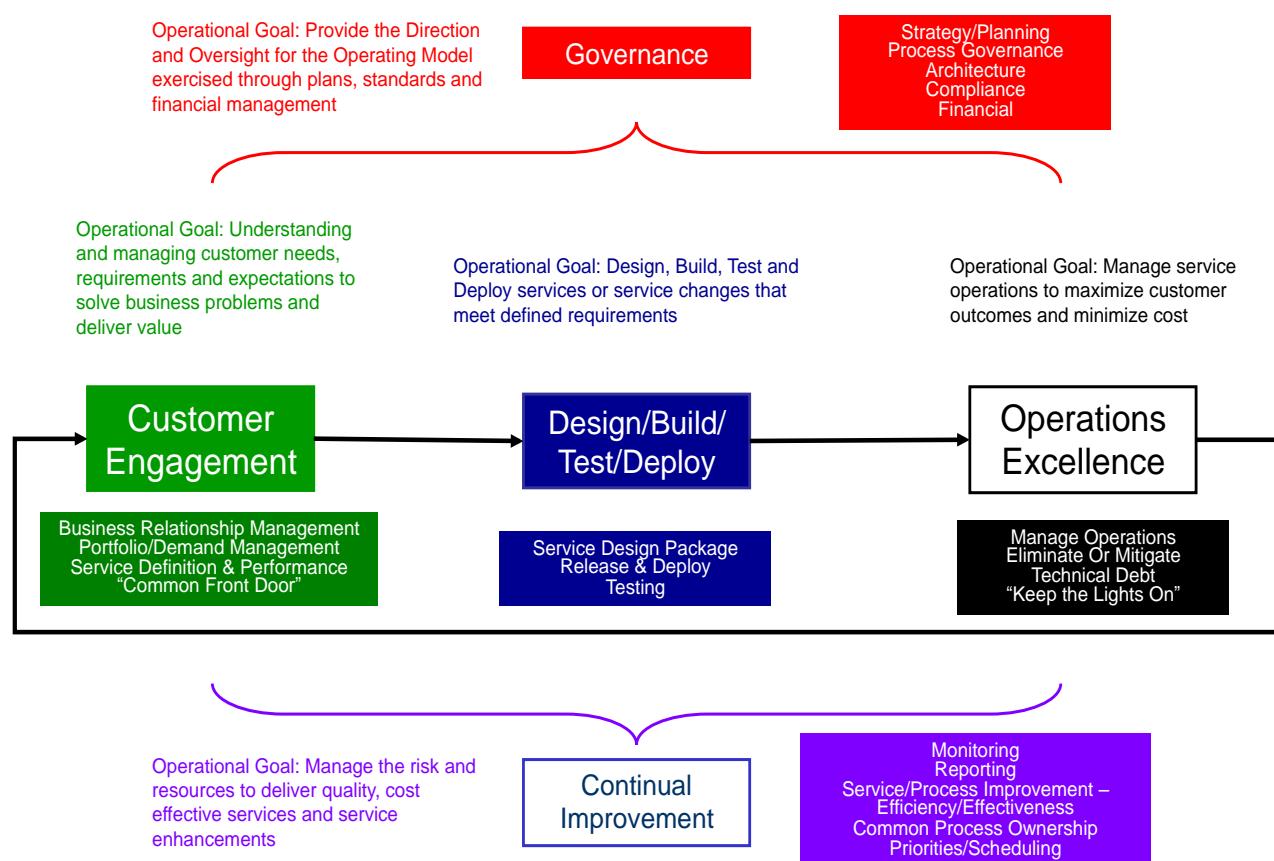
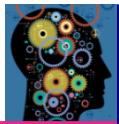


Figure 1

The description of the ITSM Operating Model is detailed at three levels. Level definitions support an integrated view of how an IT organization creates value.



The three levels are:

- Level 1 – Value Domains: At this level the Operating Model describes the major and uniquely discrete organizational activities required to achieve, deliver or manage value creation goals for the customer. There are two unique sets of Value Domains – Transactional Value Stream Domains and Governance Domains. Level 1 of the model defines the “Why” or specific domain goals. Each domain operates within its defined scope but relies extensively on the other domains for inputs or support to achieve overall high-level goals of the Operating Model and IT
 - The five domains of the Operating Model are:
 - Value Stream Domains
 - Customer Engagement
 - Design/Build/Test/Deploy
 - Operational Excellence
 - Governance Domains
 - Governance
 - Continual Improvement
- Level 2 – Value Capabilities: This level details domain-specific activities that transform domain inputs into domain outputs. The domain capabilities underpin the capacity and transformational nature of each domain to achieve the domain performance goal(s). Level 2 capabilities describe the flow of how work is processed within the domain or the “What” of the model. The capabilities are typically documented in a “verb-object” taxonomy (e.g. Understand Customer Requirements). As the capabilities are documented in a flow, a Lean or Six Sigma technique known as a SIPOC diagram (Supplier – Inputs – Process – Outputs – Customer) can support a design (Note: a reference on SIPOC can be found at <http://en.wikipedia.org/wiki/SIPOC>). Level 2 is instructive when evaluating the current work patterns of an organization and redefining the future state. Its capabilities can be reconfigured to support organizational requirements based on work types or specific units of work (e.g. a project request) that must flow through the IT Value Stream



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Note: the Capability attributes detailed for each domain are intended as a reference to evaluate the required qualities for each capability. The attribute is not considered exhaustive and should be adapted to reflect the needs of each organization. As a practical matter, organizations, in implementing this model, have developed additional capabilities (beyond the list detailed in the model) and reallocating the model capability attributes to new or different capabilities.

- Level 3 – Capability Processes: This level outlines the common processes required to facilitate the Level 2 capabilities or the “How” of the model. The processes are taken from various management frameworks (e.g. ITIL®, COBIT®, etc.) and are tuned to meet organizational requirements

Figures 2 and 3 below provide an example of how the Operating Model can be developed to support a service based approach.

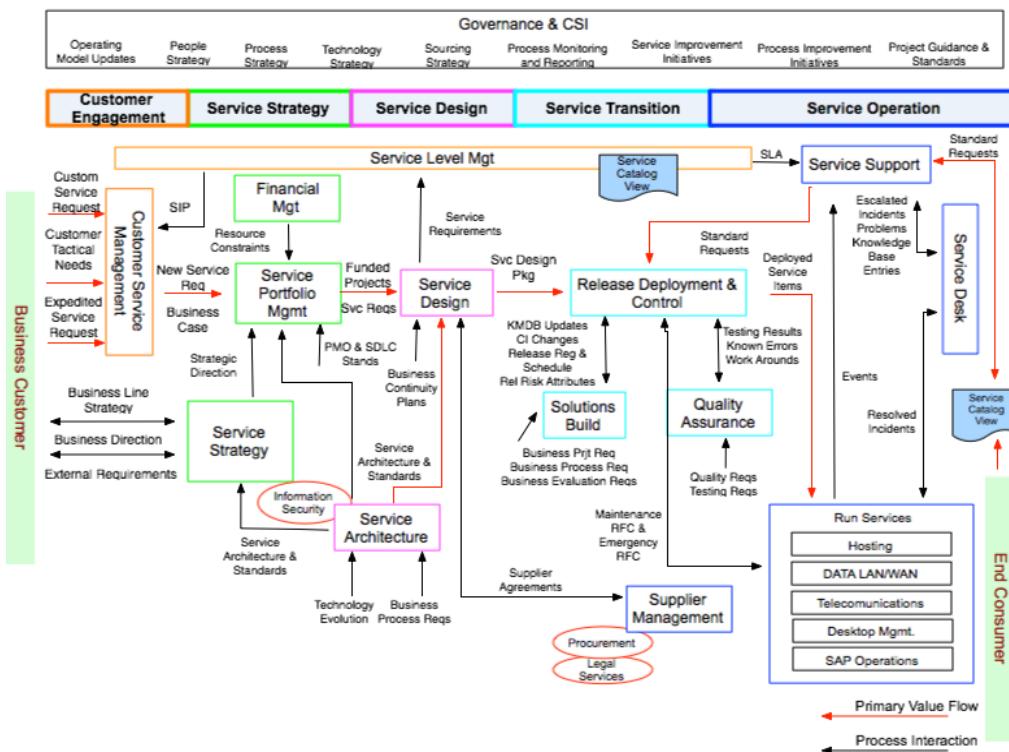


Figure 2 - Example of a Level 1 and 2 Operating Model

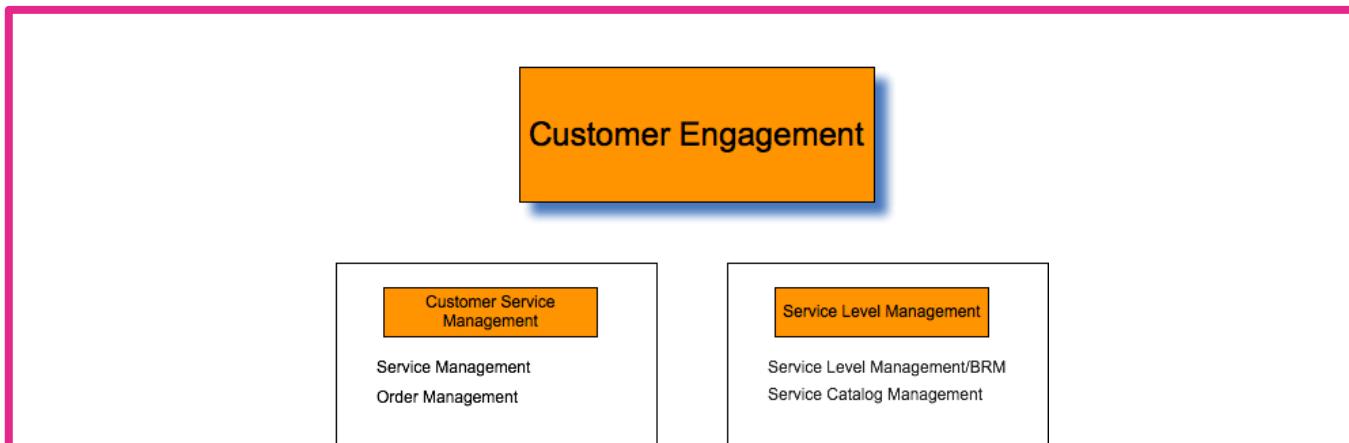
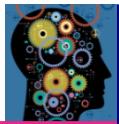
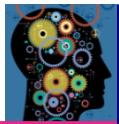


Figure 3 – Example of Level 2 and 3 of the Operating Model

The primary ITSM Operating Model value stream consists of: the Customer Engagement, Design/Build/Test/Deploy and Operational Excellence domains. This Value Stream is one that without active management can be a source of wasted effort, increased cost and inefficiencies within IT.

A specific issue faced by many IT organizations that will significantly impact the effectiveness of the value stream to meet customer needs and expectations is an over-commitment to the business for projects or other work. Or in other words, the supply of IT resources, especially in the Design/Build/Test/Deploy (D/B/T/D) domain is continually outstripped by the demand for those resources, due to an uncontrolled cadence of projects, requests and changes. Thus the cadence of the value stream within the Operating Model must be tuned to balance the demand of the business with the supply of available IT resources.

To simplify the discussion, we apply an analogy of a “Funnel and Pipe” model to help with understanding the cadence or pace of work processed through the value stream. The funnel reflects the intake of all projects, requests and changes that must be delivered by the D/B/T/D Factory. The pipe reflects the resource constrained “Factory”. In an “untuned model” the pipe will not have sufficient resource capacity to deliver the demand coming “out of” the Funnel. Figure 2 provides a high level depiction of the “Funnel and Pipe” model and value stream key interactions.



MANAGING & ORGANIZING THE ITSM OPERATING MODEL

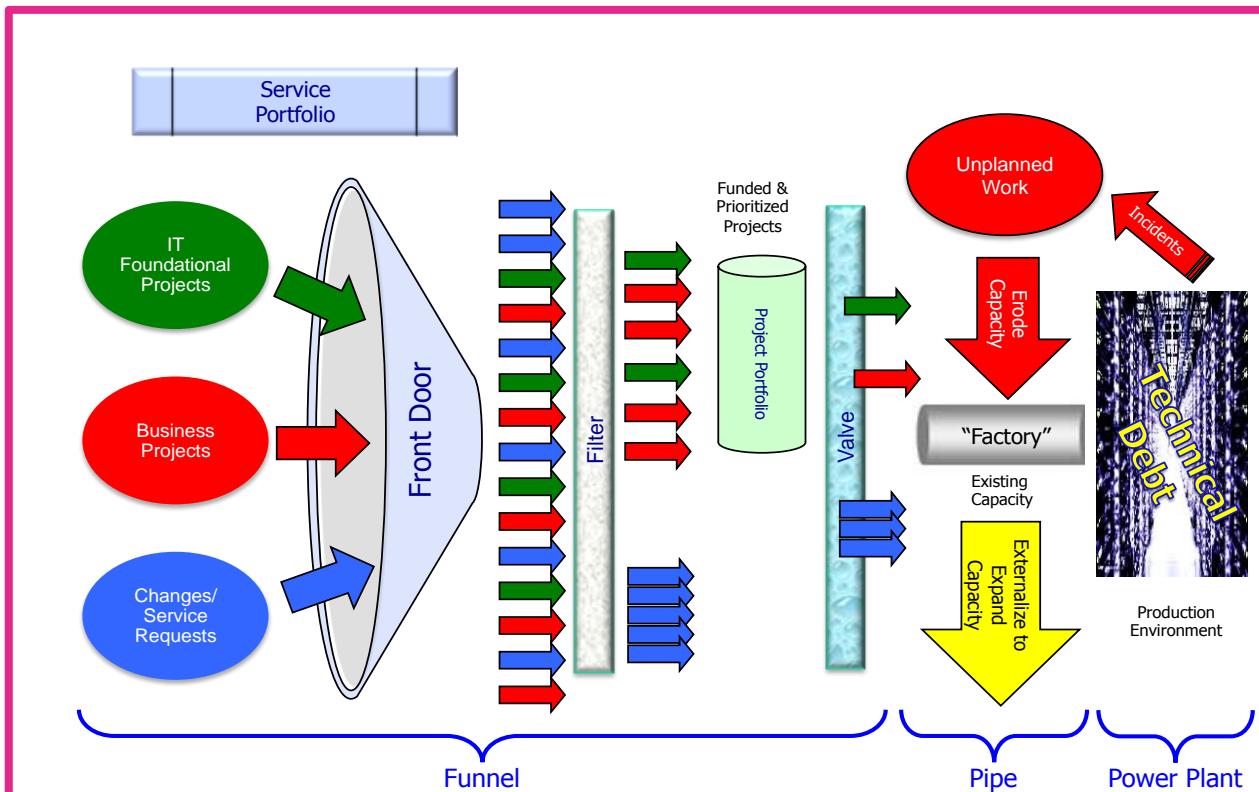


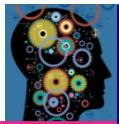
Figure 4

The explanation of the ITSM Operating Model Value Stream is based on this model.

For clarity sake the three elements of the “Funnel and Pipe” model, as described in the Operating Model are:

- “The Funnel” – Customer Engagement
- “The Pipe” (Factory) – Design/Build/Test/Deploy
- “The Power Plant” – Operations Excellence – Production

The remainder of this paper details the five Operating Model domains with descriptions for each of the three levels of the Operating Model.



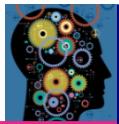
2) LEAN IT

Applying Lean principles to IT is becoming a significant discipline for IT organizations. Lean, derived from the Toyota Production System (TPS), provides guidance not only for understanding and improving internal processes but it also sets the stage for a shift in how organizations, such as IT functions, manage themselves and their relationship with their customers (e.g. basic Lean principles are a focus on quality, creating a culture of continual improvement and just-in-time delivery).

An effective implementation of the IT Operating Model relies on understanding and applying Lean principles. Not to say that the Operating Model could not be implemented without using Lean concepts but to achieve significant benefits from the model, some basic Lean concepts should be embraced. Throughout this paper a number of Lean concepts or terms are referenced. To assist with not only understanding the concepts but also how the principles have been applied in the model design the following definitions are offered.

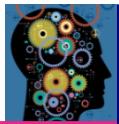
The five key concepts behind Lean are:

- Customer Value – The most important consideration for a service provider is to understand who the customer of its products or services is. The customer can be the ultimate consumer of an organization's product or service or the next individual or group in a value stream. The most important consideration is that the customer is the beneficiary of the provider. The customer recognizes the benefit delivered by the provider in terms of the value they attach to what is delivered. The key is that customer considers that the delivered value is equivalent to or more than what the customer might be (or is) asked to pay for the service or product
- Value Stream – A value stream is a set of activities that are executed in such a way that way is efficiently and effectively delivered to the customer. The value stream may take the form of the integration of capabilities within a value domain or the meshing of capability processes. The measure of the Value Stream is that the value delivered is done so with minimal or no waste



- Unit of Work – A supporting concept for managing a Value Stream and to understand Flow is the Work Unit. Each Value Stream, through its activities, capabilities or processes transforms the nature of a specific unit of work. The unit of work could be a project, a piece of software, a request for change, etc. What is most important in managing a value stream is that the unit of work is identified and the transformation of Unit of Work is monitored and managed as it moves through the Value Stream. Thus understanding and tracking a Unit of Work is critical when developing, monitoring and improving a Value Stream.
- Flow – As a Unit of moves through a, Flow assures that the Unit of Work does so in a continuous fashion – never stopping or being delayed. If the Value Stream is well engineered, the delivery capability and pace of the Value Stream can be predictable and the potential for missing deadlines, etc. is diminished.
- Pull – Key to establishing flow is the concept of Pull. Pull is the effect of not beginning work on a work unit until there is a request by a customer – whether that customer is the ultimate consumer or the next activity station in a value stream. A good example of Pull in the Operating Model is the effect of Resource Demand Management – see Customer Engagement
- Perfection – One of the major tenets of Lean is a culture of Continual Improvement, an underpinning concept of Perfection. Perfection is the cultural effect of everyone who has a hand in a product or service – whether a Subject Matter Expert in a Value stream, a manager, a supplier or even a customer – has a continual focus on finding and taking advantage of improvement opportunities

As you read through the Operating Model and its design, keep these principles in mind, especially when you are working towards implementation (Section 7 – Implementing the IT Operating Model).



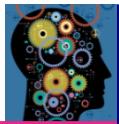
3) THE FUNNEL – CUSTOMER ENGAGEMENT (CE)

CE – Level 1 – Objective:

Provide the intake and prioritization point for work entering the factory. Note: In the practical application of the Operating Model some organizations choose to distinguish between the intake objectives and the prioritization objectives by creating a separate domain for Prioritization. Throughout the discussion of this domain, capabilities and processes that could be repositioned into a Prioritization Domain will be noted by (P).

Assumptions/Definitions:

- There are four types of IT work introduced into this domain. The domain focus is on understanding and providing a smooth flow of prioritized work from customer engagement to the Design/Build/Test/Deploy domain
 - Business Projects – projects that are focused on optimizing the “Run the Business”, improving the “Grow the Business” and supporting the “Transform the Business” processes, services or products of the organization. These can be projects to develop new or enhance existing business processes, services or products
 - Internal IT Projects – projects that are targeted as improvements in the underpinning architecture, technical systems/infrastructure, and development platforms that are required to run IT. These can be projects to develop new, or enhance the existing utility of IT systems/infrastructure, or address planning for replacement or upgrades in place of systems/infrastructure. Projects may address “paying down the technical debt”. (Note: A definition of technical debt is detailed below)
 - Minor Enhancements/Fixes/Changes and Service Requests – these are smaller initiatives or specific requests that support both the business and IT and do not require project administration, a project manager, and can be handled with allocation of operational or support resources. Changes may address “paying down the technical debt”
 - Note: For many organizations the distinction between project and non-project (changes/requests/unplanned) is defined in terms of the size of the work (e.g. less than 200 hours work)

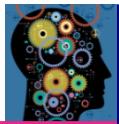


- Unplanned Work – IT activity directed to address issues that surface as a result of the technical debt. Technical debt results in the instability of the environment due to poor designs, lack of testing, inadequate planning for operational requirements, etc., are evidenced by incidents or alerts that are unanticipated and detract from the organizations capacity to focus on the three primary types of IT work
- Technical Debt – the residual effect of the introduction or maintenance of risk in or risky technologies into the production environment. The negative outcome of Technical Debt is Unplanned Work. There are four sources of Technical Debt that can be managed through the Operating Model. They are:
 - Inadequate risk management during transition (e.g. poor or inadequate testing or the lack of Change Management)
 - Inadequate preparation for post-deployment in Operations as enabled by Release and Deployment Management (not engaging Operations during the Analysis, Design, Build and Testing phases, resulting in frantic scramble by Operations to learn-on-the-fly to manage recent changes to the production environment)
 - Aging or unsupportable infrastructure (e.g. out of support hardware or software)
 - Complex or “one-off” architectures (e.g. purchase and installation of non-standard technologies that doesn’t integrate well with the standard architectures)

CE – Level 2 – Capabilities:

There are four primary capabilities in the Customer Engagement domain:

- Understanding The Customer – Establish a working relationship with the customer to encourage continual dialog about needs, requirements and expectations

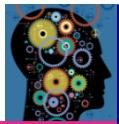


- Functional Front Door – Create a consistent method for the intake of IT work – projects, requests, and changes – that assures that work intake is understood, documented and prioritized. Work not processed through the front door disrupts the capability to effectively manage work in Design/Build/Test/ Deploy (the Factory)
- Filtering Work Requests (P) – As the factory has limited capacity, filtering identifies the work that is a priority for which factory resources will be allocated. Priority work is placed in a holding queue until factory work capacity is available. The filter is a dedicated process – Portfolio Management
- Releasing Work Into The Factory (P) – The work capacity of the factory is monitored and work is only released to the factory when capacity is available. This assures a smooth flow of work through the factory value stream. Work is released into the factory through a dedicated process or valve – Resource Demand Management
- Report & Manage Expectations For Service Delivery & Service Ownership – This capability closes the loop comprising the intake of customer needs and includes: establishing and documenting expectations, transforming the requirements into an operational state as services and measuring and reporting back to the customer service performance compared to Service Level Agreements. Organizations have found that including Service Ownership in this capability simplifies the service management activities that span customer requirements to service delivery

Attributes Of Each Capability

In order to understand customer requirements and match IT capacity within incoming demand the following attributes require definition and management.

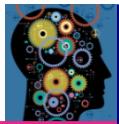
- To understand the Customer:
 - Know who the customer is and establish key relationships
 - Customer processes and process outcomes
 - Who are the Customers of the customer (corporate Value Stream)
 - What are Customer critical success factors and measures of success



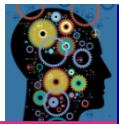
- What are the Customer strategies/goals/objectives that drive business projects
- What will be upcoming or needed changes in operational processes, manpower shifts or other activities that drive changes or service requests
- Understand the services documented in a Service Catalog
- Understand what services are used by particular customers. The Service Catalog is kept current by the Service Catalog manager or librarian
- What service commitments are documented and managed through Service Level Agreements (SLA)
- Understand how the SLA commitments depend on commitments made by underpinning Service Owners or contracted suppliers via Operating Level Agreements (OLA) or underpinning contracts (UC)
- Review how service performance is communicated to customers through regular service review meetings
- Understand how changes in customer strategies, tactics or operations are addressed through either changes to the service portfolio or requests for service from the Service Catalog (business projects)
- Provide Customers updates of changes to the service portfolio and/or the service architecture made by service owners who are adhering to the portfolio process
- To provide a functional, single Front Door for work intake including clear demand intake channels and roles:
 - Understand and document customer needs, plans and requirements through the work of a role dedicated to build relationships with the business – Business Relationship Manager (BRM)
 - Align incoming requests with services as described in the Service Catalog
 - Identify the need for new, updated or to retire services
 - Communicate how the BRM role and process supports documented project, changes and requests required by the business that address strategic, tactical and operational needs



- Simplify and standardize common practice to effectively capture IT work requests
- Assure that Project, Changes or Requests (PCR) are documented and the workflow is managed through the ITSM tool if practical
- PCR must be “reasonably” sized
- Identify and address “back door” requests or other behavior to circumvent consistent work intake
- Solicit consistent leadership support to eliminate “back door” requests
- To effectively and efficiently filter Work Requests:
 - Develop a business-driven prioritization scheme to be used in the filter or prioritization process
 - Align business measures of success to the prioritization scheme
 - Continuously evaluate the prioritization scheme with business to assure that scheme is still consistent with business strategies, goals, objectives and tactical plans
 - Forecast the availability of key/critical resource capacity (a significant limiting factor to the volume of requests that can “flow” through the filter)
 - Evaluate work requests against prioritization scheme and available allocated resource capacity
 - Establish the priority for the individual PCR
 - Actively communicate how the filter works and the result of the “filter” process
 - Identify and address “back door” work requests
 - Assure that the filter or prioritization scheme can accommodate business projects, IT projects and changes/service requests (tight alignment to the “Valve”)
 - Establish appropriate priority categories for unplanned work
- Release Work Units into the Factory through the Valve (Resource Demand Management):
 - Approved (through the filter) PCR are staged based on organizational priority
 - Monitor the capacity allocation between value-adding initiatives and sustaining initiatives (e.g. unplanned work)



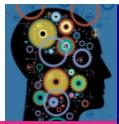
- Understand the current state and future planned work for Factory resources (requires time tracking and solid project estimation) for the various Factory Value/Product streams (for definition of Value/Product streams, see Factory – Definitions/Assumptions)
 - Identify known resource constraints (e.g. limited specialized skill sets or individuals with unique, without a backup, knowledge of the environment or systems, etc.) that can be a limiting factor in estimating Factory work capacity across the Factory Value/Product streams
- The current state of PCR in the Factory are monitored to plan when necessary resources will be available to work types and to assure continuous work flow through the Factory
- Identify Value/Product streams that can be associated with classes of work types (projects, requests, etc.) Resources can be allocated to support the value/product streams to assure that all required service elements can be designed, built, tested and deployed in a smooth continuous manner. Special attention is given to resourcing “non-standard” products or architectures
- As capacity is made available in the “initial” stages of a value stream, the PCR are released into the Factory
- PCR released into the Factory are tracked to assure smooth flow and to support the data necessary of continually improving the Factory processes
- Report & Manage Expectations for Service Delivery and Service Ownership:
 - Agree to appropriate Services that meet customer needs/requirements
 - Document agreements for ongoing service delivery and service delivery expectations via Service Level Agreements
 - Prepare and present regular service performance reports to the customer
 - Document and submit service improvement opportunities to Service Owners for action



- Service Owners document improvement work requests and submit to the Front Door for prioritization
- Document the service including all underpinning services.
- Performance and quality expectations for all underpinning services should be documented through Operating Level Agreements or Underpinning Contracts.
- Business-facing Service Owners are designated who work collaboratively with Business Relationship Managers to understand customer needs and requirements
- Technology Service Owners allocate necessary technology service resources to address any conditions that may cause or potentially could cause SLA breaches

CE – Level 3 – Required Processes:

- Business Relationship Management
- Service Level Management
- Service Catalog Management
- Portfolio Management
- Demand Management
- Request Fulfillment
- Financial Management
- Continual Improvement Methods such as the ITIL CSI – 7 Step Improvement model



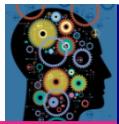
4) THE PIPE/ FACTORY – DESIGN, BUILD, TEST, DEPLOY (DBTD) (Build)

DBTD – Level 1 – Objective:

Within resource constraints, design, build, test and deploy (DBTD) covers IT process areas “work” which translates customer solutions into the operations environment without adding to the technical debt. The capability and process design of the “Factory” should be such that IT work flows smoothly with little or no interruption or bottlenecks. To accomplish this objective will require careful planning of the capabilities, monitoring resource capabilities and capacities and evaluating Work In Process (WIP) limits of the various Factory capabilities.

Assumptions/Definitions:

- IT work released into the “Factory” can be categorized into Standard and Non-Standard Value/Product Streams:
 - Standard Value/Product Streams (SVS) – employs a common and repeatable set of DBTD practices, procedures, architectures, technical standards and resources for categories of services or products (Note: some organizations categorize aggregation of similar services or service lines as products to simplify accountability.) Some organizations refer to these standard service requests and enhancements as “Business As Usual”. The SVS workflow operates much like an assembly line based on a standard prioritization model or a first in first out resourcing model. These Value/Product Streams have limited complexity and business risk and can be “easily” estimated and planned as to DBTD requirements. Standard Value Streams (SVS) can be managed as standard releases. The inherent risk of failure for SVS is lower than Non-Standard Value Streams (NSVS) due to the predictable nature of the architectures and resource requirements

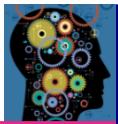


- Non-Standard Value Streams (NSVS) – this work requires new or untried DBTD practices, procedures, architectures, technical standards or resources. NSVS require substantially more planning to address the potential risk to the technical debt. NSVS work can be assigned to specialty DBTD groups within the Factory who are multi-skilled across a variety of architectures and technologies
- Customers (or their representatives – e.g. BRM) are actively engaged to provide details regarding service requirements, reviewing and approving functional designs, and participating in some levels of testing – e.g. User Acceptance Testing
- To assure a high level of Operational Performance, the DBTD capabilities must keep in mind and address the sources of Technical Debt across the DBTD capabilities:
 - Continued use of aging or out-of-revision infrastructure and applications
 - Use of new or out-of-standard technologies
 - Poor or inadequate testing
 - Lack of requirements planning for operations (requires integration of operations during the stages of DBTD)

DBTD – Level 2 – Capabilities:

There are four primary capabilities in the Design/Build/Test/Deploy Domain:

- Design – includes all activities necessary to develop a clear architectural design for the required work. Design assures that architectural, technical, regulatory and security requirements are addressed. Critical to managing one of the contributors to technical debt is engaging the Operations teams early in Design to include Operational requirements (e.g. monitoring, run time support etc.) in the design
- Build – the execution of the Design plan using approved Development methodologies. The flow of work through the Build capability can be managed as releases or unique changes



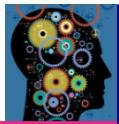
- Testing – testing the work product prior to deployment using a prescribed test plan executed with a managed test environment. Testing is planned to assure that all functional and non-functional requirements are met and that the production-ready product can scale as required by Capacity demands
- Deployment – a planned set of activities that assures the new or updated service is successfully implemented in the Operational environment and for the customer. Successful deployments address technical, operational and user needs to assure that the deployed service meets business requirements and can be operated efficiently and effectively
 - Note: As a practical matter, organizations have found that maintaining the application and infrastructure organizations, for the Design and Build capabilities, as separate entities assures ongoing technical competence. The key to success, as a SBO, is a focus on implementing practices and methods to support the collaboration of build and run teams as partners in Service Based Value Streams. A critical success factor to achieve this result is the integration of Release Management and Project Management process activities

Attributes Of Each Capability

In order to ensure that customer demand as well as non-functional requirements are satisfied in Design, Build, Test and Deployment activities the following attributes require definition and management.

Design:

- PCR (Projects, Changes or Requests) are determined to be SVS or NSVS
- Designs are evaluated for architectural or technical compliance/risk so as not to contribute to or compound technical risk
- Designs are evaluated to assure they comply with architectural and technology standards. Non-Standard technologies are approved by an appropriate governance body before the design can proceed to the Build phase
- Designs are reviewed for InfoSec risks that are germane to protecting the business. InfoSec issues must be addressed before the design can proceed to the Build phase



- Designs are reviewed for their compliance to regulatory requirements
- Designs are reviewed by the Service Owners to ensure SLRs can be met
- Designs incorporate/engage Operations to assure that deployment and operational state requirements are known and addressed
- Designs provide accurate work estimates and validated project schedules or assure adherence to established delivery SLA
- Subject Matter Expert (SME) are cross-skilled to support multiple value streams
- Test requirements and plans are initiated
- Design teams report available work capacity on a regular basis to Resource Demand Management
- Design work is initiated when work capacity is projected for the Design, Build and Test teams
- Governance authorities (e.g. execution of an SDLC – System or Software Development Lifecycle) remain aware of the progress of the design effort so as not to create an approval delay in proceeding to Build
- Suppliers or third parties are considered part of the Design team, and are integrated into design activities as required
- Organizational Change considerations are built into the Deployment plans to address issues that may arise due to process changes

Build:

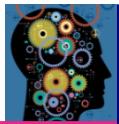
- PCR flows through the SVS or NSVS work streams with little interruption
- Releases are scheduled to coordinate similar PCR through a Value/Product stream
- Build work is initiated when work capacity is projected for the Build and Test teams
- SVS and NSVS work streams are leaned out to reduce waste (muda)
- Unit testing is integrated at the right level within the Value/Product stream
- Operations is engaged to assure that the proper messaging, instrumentation and run book details are defined/integrated during Build
- The chosen Development methodology dictates the pace and rhythm of the Value/Product stream (e.g. Agile vs. Waterfall)
- Development activities assure that the completed product/service is appropriate for the Design (production architecture/environment)



- Test requirements and plans are updated
- Unit testing is conducted
- SME are cross-skilled to support multiple value streams to eliminate resource constraints
- Build teams develop their schedules and plans. Release and Project management work to coordinate the required activities and resource allocations as appropriate
- Build teams engage the Operations teams prior to deployment to confirm run books and required work-arounds
- Build teams report available capacity on regular basis to Resource Demand Management
- Governance authorities remain aware of the progress of the Build effort so as not to create an approval delay in proceeding to Test
- Build teams develop deployment remediation strategies including Day One monitoring and action steps
- Suppliers or third parties are considered part of the Build team, and are integrated into Build activities as required

Testing:

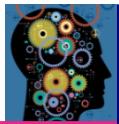
- Test work is initiated when work capacity is projected for the Test teams
- Test environments replicate production environments
- Test environments can be easily updated to accommodate the production requirements for new projects
- Testing includes the necessary system, performance, regression, regulatory (e.g. FDA Validation) and security testing to meet customer and enterprise requirements
- Test plans are executed per requirements defined in Design and Build
- Test teams develop their schedules based Project and Release plans
- Development teams work closely with the test teams to address issues quickly that surface during Testing
- Open errors are documented and included in the knowledge database prior to deployment
- Test teams report available capacity on regular basis to Resource Demand Management



- Testing is initiated anticipating work capacity from the deployment teams
- Governance authorities remain aware of the progress of the testing effort so as not to create an approval delay in proceeding to deploy
- Suppliers or third parties are considered part of the Testing team, and are integrated into test activities as required

Deployment:

- The Build and Operations teams (including suppliers/third parties and the Business Relationship Managers) coordinate the deployment (of a release) to the users
- The Organizational Change plan is executed including role impact assessment, training plans and communication plans
- Customer representatives are engaged in Deployment planning and consulted during deployment
- Users are trained on the relevant elements of the deployed service based on their roles
- Training is conducted Just-in-Time (JIT)
- Deployment is automated where feasible
- Build and Operations teams monitor the deployment for indications of deployment-related incidents and react to the incidents to resolve them quickly
- Remediation plans are executed as required
- Build, Operations, Suppliers/third parties and Customer teams conduct Lessons Learned (LL) sessions following the deployment as part of project/release close out. LL are documented and DBTD practices and procedures are updated based on the review
- Deployment teams report available capacity on regular basis to Resource Demand Management



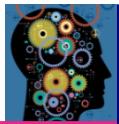
DBTD – Level 3 – Required Processes:

- Availability & Capacity Management (proactive)
- Information Security (proactive)
- IT Service Continuity
- Supplier Management
- Change Management
- Release Management
- Service Asset & Configuration Management
- Service Validation & Testing
- Knowledge Management
- Event Management
- Project Management
- Risk Management
- Organizational Change Management

“

*The capability and
process design of the
“Factory” should be such
that IT work flows
smoothly with little or no
interruption or
bottlenecks.*

”



5) THE POWER PLANT – OPERATIONS EXCELLENCE (OE) (RUN)

OE – Level 1 – Objective:

Within resource constraints and aligned with agreed to service levels, deployed services or service changes are managed in the operational environment such that all deployed services are available when needed and as needed (e.g. consider the analogy of electricity and a light switch). The Operations capabilities ensure that services are accessible, secure, perform to agreed to service levels, efficient and sustainable to meet ongoing customer requirements.

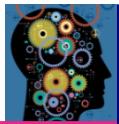
Assumptions/Definitions:

- See definition in Section 3: The Funnel – for Technical Debt

OE – Level 2 – Capabilities:

There are four primary Capabilities in the Operations Excellence domain:

- Keep The Lights On – the capability focuses on assuring that the agreed to operational service levels are continually met. In the event of a service interruption, the capability assures that the service can be restored as quickly as possible
- Reduce Technical Debt – continued evaluation of service incidents and determining the source of the interruption. This capability will also identify and take action on sources of technical debt that could result in future incidents. The immediate source can be eliminated but it is important that systemic issues that underlie technical debt should also be identified and corrective actions initiated to remove them as well
- Manage Unplanned Work – The operational execution of the Keep the Lights On and Reduce Technical Debt capabilities
- Monitor For Performance & Improvement – the ongoing automated and “manual” monitoring of the operational environment to provide data that will be used as input as part of the Plan Do Check Act improvement cycle for the deployed services and to support actions by the other Operations capabilities

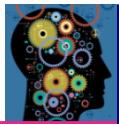


- Note: For implementation considerations, organizations have named the Operations Excellence domain after the processes deployed to support the Capability (e.g. Incident Management capability)

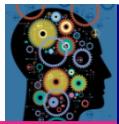
Attributes Of Each Capability

In order to ensure that services are available when and where required the following attributes require definition and management.

- Keep The Lights On:
 - Capture and process alerts and incidents per defined and documented SLA
 - Establish appropriate incident categories and priorities
 - Prepare, in advance, on how to address Sev/Priority 1/Major incidents
 - Define and document the conditions and approval model under which a Major Incident may transition to a crisis requiring business and IT service continuity plans to be executed
 - Capture and analyze incident trend data
 - Improve the Knowledge Management Database (KMDB) to reduce Mean Time To Repair (MTTR)
 - Improve the First Time Final (FTF) performance level of the service desk
 - Cross train second level resources to prevent escalation to limited third resources
 - Empower resources to take corrective actions to eliminate errors
 - Establish event monitoring standards and standard messaging to simplify event correlation and action
 - Automate event to alert/incident message handling to reduce MTTR



- Reduce Technical Debt:
 - Analyze incidents to not only eliminate the incidents (repair the application or infrastructure), but also identify the causative source for any technical debt
 - Develop and manage asset lifecycle plans focused on reducing technical debt by eliminating or minimizing out-of-date/support infrastructure and applications
 - Review the asset lifecycle plans regularly or as required per the plan, to assure that assets can sustain expected performance and Total Cost of Ownership (TCO) levels
 - Submit asset replacement plans through architecture
 - Consider the cost implications (ROI) of technical debt and the cost to “buy” it down (reduce technical debt)
 - Optimize the cost of support facilities and utilities (e.g. transactions/watt)
 - Report on the impact of technical debt on the enterprise ability to meet and achieve enterprise strategies, goals, objectives
- Manage Unplanned Work:
 - Focus on waste reduction by addressing requests and incidents which will lower technical debt. Priority for implementing root cause analysis should be based on the benefit of eliminating the root cause of an incident compared to cost of the analysis (primarily the time of the required Subject Matter Experts) and the cost of a corrective solution
 - Monitor the effectiveness of implemented solutions
 - Monitor and report the impact of unplanned work on Value-Added projects
- Monitor For Performance & Improvement:
 - Identify key or critical performance targets based on SLA
 - Establish and maintain monitoring of critical infrastructure
 - Based on monitoring, identify service or process improvement or correction opportunities, and submit to Process or Service Owners
 - Process or Service Owners submit improvement work requests, through “the Front Door” for prioritization



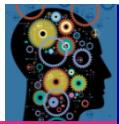
OE – Level 3 – Required Processes:

- Service Asset & Configuration Management
- Event Management
- Incident Management
- Problem Management
- Information Security Management (reactive)
- Availability Management (reactive)
- Capacity Management (reactive)
- Financial Management
- IT Asset Management
- Step Improvement Process

“

Operations capabilities ensure that services are accessible, secure, perform to agreed to service levels, efficient and sustainable to meet ongoing customer requirements.

”



6) GOVERNANCE (G)

G – Level 1 – Objective:

The Governance domain establishes the capabilities and processes required to provide oversight and direction setting to ensure the achievement of business goals and objectives. It does this by ensuring that the requisite level of monitoring, direction and evaluation of the ITSM Value Stream is performed on a regular basis. Included within the Governance domain are capabilities and processes with scope and responsibilities that typically span the complete Value Stream and where it would not be appropriate to assign the capability or process within one of the Value Stream domains.

Assumptions/Definitions:

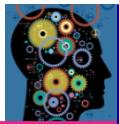
Note: There are multiple industry definitions of governance that could be used to support the Governance domain objective.

COBIT – Governance ensures that stakeholder needs, conditions and options are evaluated to determine balanced, agreed-on enterprise objectives to be achieved; setting direction through prioritization and decision making; and monitoring performance and compliance against agreed-on direction and objectives.

ISO 38500 – Corporate governance of IT involves evaluating and directing the use of IT to support the organization, and monitoring this use to achieve plans. It includes the strategy and policies for using IT within an organization. The ISO 38500 model is based on three major activities – Evaluate, Direct and Monitor.

To simplify the definition for purposes of the Governance domain, governance revolves around:

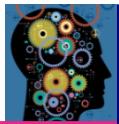
- Making decisions that are key or critical to the Governance scope at various levels
- Assuring that those decisions are carried out and are providing the desired results
- Avoiding putting the organization at undue or unmanageable risk



The Governance decisions are made at one of four levels with each level providing direction to the next level down in the organization:

- Board Level – provides the direction to the enterprise executives that meet shareholder expectations, organizational continuity and ensures achieving financial returns
- Business Executive Level – establishes the direction for functional groups based on the Enterprise Operating Model and organizational goals. The governance focus at this level is associated with value creation for the enterprise customers through creation, deployment and management of IT resources and capabilities
- IT Level – (Governance of Enterprise IT – GEIT) evaluates, directs and monitors the structures (e.g. strategies, architectures, organizational design, etc.) and practices of the IT enablers (capabilities and resources) to align with the Enterprise IT Operating Model and deliver value to the Business Enterprise through IT
- ITSM Level – evaluates, directs and monitors service creation and delivery aligned to IT Level strategies and goals for the benefit of customers of specific services
- Architecture – there are three types of architectures that can be subject to governance:
 - Service Architecture – defines the various capabilities and resources that are required to create service potential, and to deliver the service on demand
 - Process Architecture – defines the process elements that are required to deliver individual processes and, at a higher level, the interaction of various processes to support service management
 - Technical Architecture – defines the combination of hardware, software, and data deployed to deliver services and are enabled by processes

For purposes of the Operating Model, the Governance domain focus will be limited to the ITSM level.



G – Level 2 – Capabilities:

There are three primary Capabilities in the Governance domain

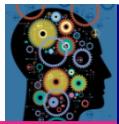
- Evaluate – Based on the direction set by an organization's leadership, Governance bodies evaluate existing plans, policies, processes, practices, initiatives, organizational performance including conformance to standards etc., to assure the organizational results remain true to its basic values and stakeholder expectations. The Evaluation activity provides a lens for the decisions that will assure the Enterprise can continue to achieve its mission, strategies and goals
- Direct – As a result of Evaluation activities, a Governance body may make a decision regarding a critical element of the organization, its process, investments and so forth. Based on that decision, the Governance body will provide direction to those accountable for the management activities of the organization to implement the decision and communicate any expectations regarding implementation
- Monitor – Periodically management will report to the Governance body progress made regarding those activities or actions directed by Governance. It is incumbent on the Governance to assess whether its direction and the expectations it has regarding that direction are being met and if following Evaluation or Direction are required. Thus the Monitoring activity can serve as an input to Evaluate as a feedback mechanism in the decision cycle

Attributes Of Each Capability

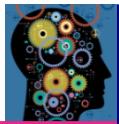
In order to ensure that Governance processes have the required information to effectively establish a baseline compared to a desired future state, direction prioritization and monitor progress the following attributes require definition and management.

Evaluate – Evaluation will focus on:

- Strategy
 - The current ITSM strategy or plans and whether the intended outcomes can support the GEIT direction and strategies

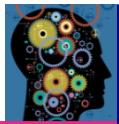


- Architecture
 - The complexity or aging of the deployed architecture or technologies and the contribution of those to technical debt
 - The viability of the Enterprise architectures and standards to support the future business needs and requirements
- Risk Management
 - The nature, scale and scope of IT risk to the business based on the generally accepted or documented organizational risk tolerance
- Financial
 - The depth of understanding relative to ITSM cost, cost models and the ability to manage the IT budgets or adequately assess changes to the Service Portfolio
- Organization and People
 - The ITSM organizational structure to assure that the roles, relationships, skills and talents are sufficient to support the GEIT direction
- Governance Framework
 - The effectiveness of the IT Governance framework including policies, standards and professional guidelines
- Process
 - The relevance, maturity and capability of existing ITSM processes to support business needs
- Supplier
 - Evaluate the conformance and performance of suppliers to contracts and the value delivered by the supplier commiserates with expectations



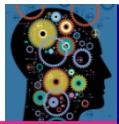
Direct – Direction will be provided for:

- Strategy
 - Making adjustments to the Service Portfolio, to assure that the resource investments provide an adequate value return to the business
- Architecture
 - Develop guiding Architecture principles and guidelines, including technology standards for use designing solutions
 - Assuring that solutions comply with Enterprise Architectures and applicable standards
- Risk Management
 - Performing audits to assure compliance to established policies, processes, regulations, etc.
- Financial
 - Enabling the use of standards for budgeting, accounting and costing
- Organization and People
 - Assuring that appropriate authority levels are extended to those assigned responsibility for roles and responsibilities
- Process
 - Enabling the IT Operating Model through efficient and effective IT organizational structure, including roles and functions
- Supplier
 - Assuring that the IT acquisitions are made in line with established policies



Monitor – Monitoring provides a focus on:

- Strategy
 - Assurance that the established priorities continue business needs and objectives
 - Regularly review the efficacy of the ITSM strategy in support of the GEIT and business requirements
- Architecture
 - Provide assurance that architectures and technologies protect the information assets of the Enterprise in line with established confidentiality, availability and integrity requirements
 - Review the performance of IT Assets and make adjustments as needed, to maintain assets within their lifecycles that continue to be cost effective and operationally efficient
- Risk Management
 - Audit remediation and formal audit reviews are implemented in a timely fashion
- Financial
 - ITSM projects and initiatives deliver the expected and desired business benefits both in the short and long term
- Organization and People
 - Performance, capacity and capability of individuals to meet the current and future GEIT and business requirements
- Governance Framework
 - Performance of IT Services are monitored across the 4P's (People, Product, Process and Partner), and appropriate action is taken to address anomalies



- Process
 - Identify for evaluation sources of technical debt that erodes the capability of ITSM to meet GEIT and business requirements
- Supplier
 - IT Suppliers work effectively with IT to achieve project and business objectives

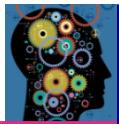
G – Level 3 – Required Processes:

- Service Strategy
- Architecture
- Financial Management
- Human/Talent Management
- Organizational Design
- Risk Management

“

The Governance domain establishes the capabilities and processes required to provide oversight and direction setting to ensure the achievement of business goals and objectives.

”



7) CONTINUAL IMPROVEMENT (CSI)

CSI – Level 1 – Objective:

The overall performance of the IT Operating Model is one that relies heavily on attention to consistent and repeatable processes and practices within each domain and domain capabilities. Continual Service Improvement (CSI) monitors and evaluates the flow and cadence of work as it flows through the value stream or is held up by observable constraints and a focus on the reduction of wasted resources for improvement opportunities. Consistency and standardization is considered critical to the efficient and effective functioning of the IT Value Stream. Continual improvement embraces a continual improvement culture. Additionally Continual Improvement can also provide an organizing locus for operational processes that will span multiple domains.

Assumptions/Definitions

- There are multiple methodologies that can be implemented to support Continual Improvement. Each organization must decide on the methodology (or combination of methodologies) that best suits the organization's improvement goals
- There are particular processes (e.g. Change Management) that span multiple Value Stream domains. Organizationally there can be a challenge in assigning accountability of these processes to one domain in lieu of another. Instead, an approach taken in this Operating Model is to allocate these processes to the Continual Improvement domain for process coordination
- The customer in this section can refer to either the ultimate Enterprise Customer, the business or a "downstream" or service, process or activity, supported by the monitored service, process or activity
- Jidoka – the Lean practice of immediately halting a production process when an abnormal or out of tolerance condition is identified. Remedial action to correct the condition is identified and implemented
- Kaizen – the Lean practice of identifying areas for incremental improvement through the analysis on voice of customer requirements, the removal of waste and the improvement of process throughput and flow



CSI – Level 2 – Capabilities:

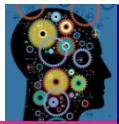
There are four primary capabilities in the Continual Improvement domain:

- Identify and take action on improvement opportunities – Continual evaluation of service or process performance to identify when performance falls short of planned levels or expectations, evaluation of the cause behind the shortfall and taking remedial actions to address non-performance
- Manage service or process changes – a multi-Domain discipline to manage the overall risk associated with making changes to any of the three IT architectures (See Governance)
- Accurately document the Service Architectures – document and accurately capture the current state of the services and the relationship the underpinning elements that make up the service.
- Project or Program management – a multi-Domain discipline to manage temporary initiatives to achieve specific outcomes or deliverables within budget and time constraints

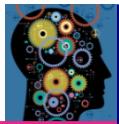
Attributes Of Each Capability

In order to ensure that Continual Service Improvement is effective and repeatable the following attributes require definition and management.

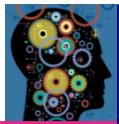
- Identify and take action on improvement opportunities:
 - Identify the scope and objectives for continual improvement including the value creation and delivery to support customer needs and requirements
 - Develop target levels for in-scope services and processes based on service and process capabilities and customer needs and requirements. The target levels are best served if they allow for a range of performance or tolerance (i.e. the performance of the service, process or activity is considered acceptable if the performance falls within tolerance and unacceptable, and subject to review, if outside tolerance)
 - Measure the performance of the service, process or activity and compare the as-is measurements to the planned target levels



- The monitoring cycle can span a period of time or be as short as when a non-conforming condition is recognized by a member of a Value Stream domain
 - A standard practice for analysis and review assesses out of tolerance conditions and determines next step actions. The review and recommendation activity can involve a formal review (e.g. Root Cause Analysis) or an ad hoc and immediate Jidoka review
 - Corrective actions are taken as required and improvements are initiated using the established PCR portfolio governance processes
 - Measurements and controls are implemented or updated to assure that the improvement actions can be sustained over time
-
- Manage service or process changes to minimize the risk associated with the change:
 - All changes are documented for formal review as determined by the process owner
 - The risk associated with the change is evaluated before the change is “built” or assembled
 - An appropriate organizational body must authorize changes. Authorization levels are established, through IT Governance, to align authorities with the various change risk levels
 - Changes are tracked and reported to various stakeholders
 - Changes are evaluated after implementation to identify improvement opportunities
-
- The current state of the Service Architecture is accurately documented and published:
 - A single trusted “source of truth” of all controlled configuration items (CI) is established as the Configuration Management Database (CMDB). The single source may be a single database or use a federated model
 - The CMDB records logical and physical CIs. CIs can include services, systems, technologies, processes, data or information, etc. The key determinant for a CI is if the change to the CI is uncontrolled, the change can put the organization at risk



- Changes to CI records can only be made through Change Management
- A governance body (Configuration Control Board – CCB) approves changes to the CMDB data model. The CCB constituency includes all relevant process or service CMDB stakeholders
- The accuracy of the CMDB is maintained through constant and periodic “audits” of the environment. Data anomalies are flagged and reviewed for understanding and corrective action
- Other Value Stream domain processes will use the CI records as a means to relate activities, conditions or events to specific CIs or CI classes
- Manage projects or programs:
 - Each organization will define what differentiates a project from a program and a project from a change or service request
 - Projects and programs are managed through a defined methodology or discipline. The project/program management methodology is scalable to the size and risk of the project
 - Projects are documented and managed by individuals trained in the organization’s project/program methodology
 - Projects are tracked after approval and are released into the DBTD domain based on Demand Management
 - Project/program performance is tracked and reported to appropriate stakeholders
 - A Program Management Office (PMO) or other central body provides
 - Project management is aligned to and supports other processes that are relevant to project and program delivery (i.e. Release and Deployment Management, System/Software Development Lifecycle (SDLC) and Change Management)



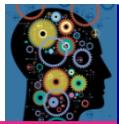
CSI – Level 3 – Required Processes:

- ITIL's seven step improvement process, Lean, Six Sigma, Total Quality Management (TQM), etc.
- Change Management
- Service Asset & Configuration Management
- Project/Program Management

“

*The overall performance
of the IT Operating Model
is one that relies heavily
on attention to consistent
and repeatable processes
and practices within each
domain and domain
capabilities.*

”



8) IMPLEMENTING THE IT OPERATING MODEL AS A SERVICE BASED ORGANIZATION

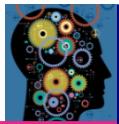
Practice has shown that developing and implementing the ITSM Operating Model follows a consistent pattern of steps:

1. Understand the current state of the organization including:
 - How is the current organization organized and how does that organizational structure impact the flow of Work Units?
 - Voice of the Customer (VOC) – Who is the Customer of IT? What are the Business and IT strategy and goals and key business Critical Success Factors (CSF) that are supported by IT? What are the most important requirements from the customer including specific issues that are impacting IT ability to deliver value?
 - What are the different IT work types (units) – deliverables or expected outcomes and any associated service levels? Do the work types have different Units of Work? How do different Work Types or Units of Work impact how the Unit will flow through the Operating Model?
 - Evaluate how the current capabilities, processes or process related activities support the processing of the work types (and units of work), and the effectiveness in meeting service levels and/or deliverables.
 - Identify information flows associated with the capabilities per work type.
 - Do business and IT leadership support an organizational change to becoming a Service Based Organization? Is there evidence of any resistance to potential changes organizational structure or alignment to maximize the efficiency of Level 1 domains? Note that implementing an IT Operating Model will require changes to reporting relationships, job categories, job or role descriptions, realignment of ITSM tools etc.



2. Using a SIPOC (Supplier, Input, Process, Output, Customer) model approach, agree to the definition of the Level 1 domains. The Level 1 Domain SIPOC should define for the Domain:
 - The goal – The measurable purpose or organization intent of the Domain
 - Customers – Entities who receive benefit or value from the Domain
 - Outputs – Domain outcomes or deliverables provided to the Customer. In some sense these could be Domain services
 - Inputs – What is transformed into Outputs by Capabilities
 - Suppliers – Entities that provide the inputs
 - Capabilities – Instead of processes, the Value Domain uses Capabilities to transform inputs in to outputs. Each of the Value Domains described in the Operating Model detail suggest potential Capabilities. However every organization will decide what Capabilities will work within each domain.
3. For each domain a similar procedure is followed to define the domain's Capabilities. The structure as outlined for defining a domain SIPOC is followed with the exception being that the Goal is the Capability goal and that instead of Capabilities the design team will identify the processes required for each Capability. Suggested processes, by domain, are provided for each domain in the Operating Model.
4. Align the Organization and reporting relationships based on the Operating Model. Typically Level 1 or Domain Leads report directly to the CIO or other IT Leader. Capability or Level 2 Leads report to the Level 1 Leads. Process Owners may report to Level 1 or Level 2 Leads depending on the process. Subject Matter Experts or process practitioners are then aligned to Process Owners/Managers or in rare instances to Level 2 Leads.

Aligning the organization structure, with reporting relationships, job or role descriptions and assigning individuals to the various roles is a significant undertaking. It is vital that a formal Organizational Change program is in place to assure that the organization (IT and the Business) is kept fully informed of the change effort and key milestones. Additionally a formal, role-based training program should be developed and implemented to support the implementation of new processes and capabilities.



5. Develop a roadmap to implement the process and tool changes required to support the Operating Model. The Roadmap should include:
 - Taking direction from the Governance domain establish which capability areas and processes are being directed for prioritization
 - Conduct a current state assessment using the operating model or external framework as a reference
 - Implement process improvements
 - ITSM Tool changes
 - Potential alignment with third parties
 - Monitoring and Measurement system for the overall program, the individual processes, work type/units, service levels etc.



MANAGING & ORGANIZING THE ITSM OPERATING MODEL



ABOUT PINK ELEPHANT

We Lead The Way!

A premier global training, consulting and conference service provider, Pink Elephant has an undisputed reputation for leading the way. We're proud of our pioneering and innovative spirit, which has enabled us to introduce and spearhead many revolutionary concepts and programs since our inception forty years ago.

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