



# ITSM: A Critical Piece of the Utility Computing Puzzle

## Introduction

Pick up a phone and hear a dial tone. Flip a switch and a light goes on. Things like phones and electricity are utilities that provide us with services that we use all day long, everyday, and make our lives convenient, predictable, and functional. The assumption is that when we need to use the utility it is there, “always on”, ready, willing, and able for use. It is waiting to provide service to us, for a cost. It is assumed that the services provided utilize a cost effective infrastructure that is available, reliable, serviceable, maintainable, and secure.

It is with a similar state with which we look to Utility Computing to provide for us, “always on” services for a cost. The goal is to ultimately achieve the high quality level of consistent service with the lowest possible cost. Further, its infrastructure is scaleable such that it grows “on demand” as needed, when needed.

## The Challenge

What lies behind the ability of the existing utilities model such as phones and electricity is not just the infrastructure, and its availability, reliability, serviceability, maintainability, and security of the services provided but the subject matter expertise of the people and the best practice methods and processes that have been developed, maintained, and are used within the infrastructure that supports the utility day-to-day and plans for its strategic requirements in a cost effective manner.

Further, how these 3 perspectives of people, processes, and technology infrastructure come together within any given particular set of usage requirements and to what level they are applied and integrated into our tactical and strategic usage requirements is critical. How this occurs relates directly to quantify and qualify the effectiveness and efficiency of whether the utility provides the highest consistent service at the lowest possible cost.

Dealing with and maximizing the use of technology, both hardware and software, regardless of its breath, depth, and scope of implementation and usage, regardless of its level of sophistication and maturity, without the support of subject matter expertise that is capable of utilizing a well defined and tailored set of best practices to support the technology, the maximum benefits cannot be achieved. In fact, the use of technology by itself to achieve the goal of Utility Computing will attain a plateau of decreasing benefits that, over time, will cause a negative return on investment, providing lower levels of required service and greater levels of inconsistency. The reason is threefold: almost all technology environments are complex in level and complexity of their infrastructure, the existing technology infrastructure is heterogeneous and will continue to be more so in the future, and finally technology refresh has been, is, and will continue to be done at an ever-increasing rate if for no other reason than the ever-decreasing cost.

The challenge then becomes what must be developed or in place in conjunction with a Utility Computing technology focused solution set to help ensure that its goal can be achieved tactically and strategically. Further, this needs to be scaleable, portable, heterogeneous, and adaptable as the technology infrastructure it will support and enable.



## Employing ITSM to Achieve A Successful Utility Computing Model

IT service management and ITIL<sup>®</sup> upon which it is based are both an integrated, process based, set of best practices to manage IT services. The basic premise is that IT is a service provider to the organization. In this fashion, the parallelism between the nature of ITSM and the core of what Utility Computing is and what it is trying to achieve is readily apparent. Further, it can be derived that ITSM which is founded in ITIL<sup>®</sup> industry accepted best practices is the necessary enabler for Utility Computing to achieve its goals and realize its benefits.

Whereas ITIL<sup>®</sup> defines and documents the best practices, ITSM employs them to meet unique customer requirements and priorities. Using the perspectives of people, process, technology, organization, and integration, the processes can be better defined, delineated, developed, and deployed to the Utility Computing model of “always on”, “ever ready”, “on demand” services and computing.

The following is a high level list of activities designed to leverage ITSM to enable Utility Computing:

- 1) Determine through an assessment process the Business, Service, Operational, and Organizational requirements for the organization. This would help to determine how well the organization is in alignment between IT and business. It would help determine the cost effectiveness of the IT services provided and the areas that would need to be addressed in order to enhance it and/or enhance the quality of the services being provided. This assessment would include perspectives of the level of expertise that the personnel is employing when utilizing the existing technology infrastructure, the best practice processes that are being employed (a combination of industry accepted best practices such as ITIL<sup>®</sup>/ITSM, the existing organization processes, and the future processes that are needed to be developed to meet the unique organization requirements), the breadth, depth, and scope of the level of utilization of technology within the customer IT infrastructure, how well and to what extent these technologies are integrated into the organization's total IT management strategy both day-to-day and long term, and lastly the “appropriateness” of the usage of technology infrastructure given whatever unique organization requirements are in place or being followed.
- 2) Evaluate the maturity level for each perspective of people, process, technology, integration, and organization to determine where the organization is currently and where they would or are required to be in ITIL<sup>®</sup>/ITSM Service Support and Service Delivery areas. The maturity levels are standardized by the IT Service CMM as follows:
  - Initial: The process is recognized but there is little or no process management activity
  - Repeatable: The process is recognized and is allocated little importance, resource or focus within the operation
  - Defined: The process is recognized and is documented but there is no formal agreement, acceptance and recognition of its role within the IT operation as a whole
  - Managed: The process is fully recognized and accepted throughout IT, it is service focused with objectives and targets that are based on business objectives and goals
  - Optimized: The process is fully recognized and has strategic objectives and goals aligned with overall strategic business and IT goals
- 3) The following ITIL<sup>®</sup>/ITSM areas would be focused in on initially: Service Level Management, Availability Management (includes Security), Capacity Management



- (includes Performance), IT Service Continuity Management, and Release Management. This assumes that the organization is already performing Configuration, Change, and Incident Management and has a Service Desk both effectively and efficiently with a minimum maturity level of "Managed".
- 4) In Service Level Management: Service Level Objectives, Requirements, and Agreements (SLOs, SLRs, and SLAs) should be reviewed or developed as required. Operational Level Agreements (OLAs) should be reviewed or developed as required. Lastly, any Underpinning Contracts (UCs) should be reviewed or developed as required. The various subject content areas should consist of: identifying the parties to the agreement, describing the service to be provided, specifying the volume of demand for service over time, defining the timeliness requirements for the service, specifying the availability of the service required, defining the reliability of the service provided, quantifying the compensation for providing the service, and describing the measurement procedures to be used.
  - 5) In Availability Management: Review/develop the planning and maintaining of IT services and the recovery of failed systems and data unavailability to ensure that the availability and reliability of IT services to customers is in accordance with Service Level Agreements. This is articulated in an Availability Plan that includes and plans for Vital Business Functions. Within Availability Management are included availability, reliability, serviceability, maintainability, and security (the confidentiality, integrity, and availability of the data). This is for every IT interface link (hardware, OS, software, IT infrastructure, and network) within the chain from the server and the data to the customer/end user.
  - 6) In Capacity (Performance) Management: Review/develop the effective capacity utilization and performance of all resources utilized including servers, OS, software, storage, etc. This includes resource usage profile characteristics and requirements for both day-to-day monitoring and reporting but trending and forecasting for all resources.
  - 7) In IT Service Continuity: Review/develop based on Business Impact Analysis findings the criticality of the applications systems that support the business functions that denotes what IT infrastructure, OS, networks, application systems, and data is recovered and in what sequence.
  - 8) In Release Management: Review/develop the storage, protection, and release of management-authorized hardware and software in both centralized and distributed systems.

Once an initial requirements analysis and maturity assessment is completed, architect a "roadmap" that depicts how to get to the desired future state from the current state. Subsequently determine what steps are needed to execute the "roadmap" and achieve the desired future state. It must be noted that all perspectives of people, process, technology, organization, and integration need to be addressed.

## Summary

Maximizing the use of hardware and software technology without employing subject matter expertise that is capable of utilizing a well defined and tailored set of best practices to support that technology will not be sufficient to achieve a Utility Computing environment that is capable of providing the highest level of consistent service at the lowest possible cost.

Employing ITIL<sup>®</sup>/ITSM best practice IT management methods is a critical component to leverage the technology perspective employing the use of resource expertise to help provide a scaleable, portable, heterogeneous, and adaptable technology infrastructure that can be supported both tactically and strategically, enterprise-wide.