



| WHITEPAPER

Straddling the Divide between IPT and IT: *Implementing ITIL to Optimize Your IP Telephony Investment*

CAPITALIZING ON BEST PRACTICES FOR SUCCESSFUL UNIFIED COMMUNICATIONS PROJECTS

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The recent momentum of Unified Communications (UC) and the disruptive enabling technology of IP Telephony have created a convergence between Voice Engineering and IT departments that is unprecedented – even since the advent of computer telephony integration. However, despite rapid and significant advances within these technologies, many enterprises, even the early adopters, have not fully embraced the alignment of these two worlds.

The alignment of Voice Engineering and IT has not occurred due to the fact that project lifecycles have evolved individually, yielding separate terminology as well as different priorities and methodologies. This scenario will likely continue for some time due to differing skill-sets and backgrounds that make the separation of the two worlds an operational necessity in most large enterprises. Should the inherent uniqueness of these two worlds be an impediment to the success of a properly executed Unified Communications vision? In most cases the answer is NO as best practices provide a combination of next generation policies and technologies that can, and will, straddle the divide.

As voice and data continue to converge under the umbrella of the technology-enabled business, the need to bridge these two “universes” becomes essential. With an emerging consensus that Voice should be viewed as another application under the overall IT purview, communications groups will benefit greatly by adopting workflow best practices from the IT industry that can close the gap.

One such initiative that is quickly making inroads is the IT Infrastructure Library (ITIL), a set of best practices that creates a high-level IT services workflow, to accommodate both existing environments.

ITIL, born in the 1980s did not fully reach the IT mainstream until the 1990s. It has since grown in the new millennium and considered the de facto standard for IT service delivery across many industries. Given the pressing need to optimize IT service budgets and resources, while reducing costs and improving organization-wide productivity, ITIL offers the framework companies need to make operations more efficient and responsive.

ITIL continues to be embraced because it provides a best practice-based framework that integrates and centralizes incident management, problem management, configuration management and change management. As a framework, companies of all sizes can benefit from ITIL in ways that are unique to their organization. For instance, large multi-national companies with tens of thousands of employees can implement all business processes covered under the ITIL framework, while small companies with just a handful of team members can integrate only the specific processes most appropriate for their needs.

The ITIL mindshare is phenomenal within the IT world. However, in the universe of IP telephony, ITIL has been virtually non-existent since most have incorporated the traditional Plan Design Implement Operate Optimize (PDIOO) methodology.

As organizations reap the benefits of a UC strategy, the paradigm shift now becomes apparent as these large, complex deployments are rivaling even the largest of IT project implementations within the enterprise. As IT departments increasingly adopt the internationally recognized ITIL best practices to ensure large IT projects are successful, the business-critical need to adapt that same mindset with UC deployments remains. There needs to be a transition and total transformation within the enterprise to “unify” IT implementations led by the chief IT architects and UC deployments driven by their counterparts in voice engineering or network engineering.

Once these adversarial forces embrace a collaborative IT and IPT model, then a UC infrastructure, built on the commonalities of ITIL, can nurture the alignment between Voice and IT to truly bridge the gap.

This white paper will provide an overview of ITIL while translating the differences, synergies and unique benefits from traditional PDIOO approaches. Finally, this paper will discuss the tangible benefits that organizations achieve when they commit to incorporating ITIL as part of their IP Telephony strategy to better align business and IT.

WHY IS ITIL RELEVANT FOR IPT NOW?

With roots in UK government, ITIL has evolved into an aggregation of books compiled over years that is built on a cadre of best practices when implementing IT projects. This repository of best practices combines experiences, templates, case studies, presentations and reading topics originally collected by the UK government's Central Computer and Telecommunications Agency.

Over the years, ITIL has gained widespread acceptance as a best practices methodology and continues to be updated on a consistent basis. The biggest contributor to ITIL momentum has been the ISO/IEC 20000, the first international standard for IT Service Management. The ISO/IEC 20000 promotes the adoption of an integrated process approach to effectively deliver managed services to meet the business and customer requirements. By leveraging ITIL to reach this goal of ISO/IEC 20000 certification, organizations must not only optimize this IT standard, but also take into consideration compliance and security. This combination makes an organization fully compliant.

ITIL v2 marked the beginning of the relevancy of the core volumes to IPT. By far, the most aggressively adopted component of ITIL v2 was the best practice for Service Support. This document outlined the best practices for the service desk incident, problem, and configuration management. These best practices translate very well within the operations of an IP Telephony environment.

Fast forward to July 2007 and the highly anticipated release of ITIL v3. This latest version offers an expanded scope and holds the most promise to leverage a UC strategy to bridge the gap between IT and IPT. In ITIL v3, definitions for the services relevant to IT are now augmented with definitions for the associated delivery processes and complementary technologies.



Figure 1: ITIL v3 Framework

ITIL – BUSINESS & IT ALIGNMENT IS NOW BUSINESS & IT INTEGRATION

ITIL v3 takes the alignment of business and IT that was touted in v2 and takes it to a new level to emphasize a more collaborative approach of business and IT integration working in tandem. ITIL v2 presents Value Chain Management whereas v3 focuses on Value Network Integration. ITIL v2 was also skewed toward the linear side while v3 discusses Dynamic Service Portfolios that integrate processes together.

Education on the value of ITIL and applying a life-cycle approach is critical to gaining buy-in from the Voice and Network Engineering departments that have minimal experience or awareness of the advances of these best practices.

Challenges of Implementing ITIL in an IP Telephony Environment

Adopting new best practices can be daunting, and “it don’t come easy,” as Ringo Starr sings. With that said, there are benefits to gaining acceptance for this approach. Within ITIL v2, enterprise systems and network management methodologies have flourished under the disciplines outlined in the ISO M.3000 FCAPS (*Fault, Configuration, Accounting, Performance, Security*) recommendations. The ongoing operational management of a data communications infrastructure has been comprehensively addressed by either fully-featured management frameworks or best-of-breed reference architectures. Over time, this methodology has proven its worth, by virtue of its extension up the ISO 7-Layer model, as client-server computing blurred the boundary between the network and the computer.

For example, as IP Telephony leverages an IP network infrastructure, the FCAPS disciplines remain valid, and existing investment in Network Management can be preserved -- the primary challenge becomes apparent in extending the capabilities of the management solutions within each discipline into the Application layer. History has shown that approach is best achieved by augmenting the reference architecture with specialized best-of-breed management solutions.

However, by being confined to the ongoing operational management of infrastructure, FCAPS fails to address the broader aspects of IT services.

Add in the x-factor of the division, and sometimes adversarial relationship, between IT people and the IPT department within an organization and therein lies the recipe for resistance. Part of the problem resides in the combination of legacy telecommunications workflow methodologies being translated into an IT world. IT specialists and analysts are naturally used to FCAPS since they are the traditional management categories into which the ISO model defines network management tasks. On the flipside, the telecommunications side of the enterprise is coming to grips with specific IP telephony initiatives as their IT infrastructure counterparts are still using 20 year old methodologies

Application developers, historically isolated in the proprietary mainframe world, developed effective life-cycle methodologies for application design, development and deployment. As the gap narrowed between applications, systems management and data communications networks in the late 1980’s, the opportunity for an overarching set of best practices was inevitable.

Now, both IT and IPT need to develop common ground to integrate best practices around a renewed commitment to leveraging the life-cycle approach of ITIL v3.

PDIOO versus PDIO

The lifecycle for deploying and provisioning telecommunications services to the enterprise has been mainstream for some time now. In fact, the PDIOO life-cycle methodology maps remarkably well to the Services life-cycle as described by ITIL, with two significant exceptions.

First, the historically proprietary and self-contained nature of enterprise PBX solutions has led to the development of vendor specific management solutions and methodologies – this contributed to the lack of consistency in the FCAPS methodology.

Second, PDIOO fails to recognize the dynamic nature of IP-based Telephony solutions. With systems remaining untouched, in some cases for 20 years, this concept is understandable. Typically, the Planning, Design and Implementation elements have been considered a one-time effort, terminating in the Day 2 Operations, or a more recently added Optimization loop. For the sake of clarity, companies such as Clarus Systems (along with most IT Operations departments) consider Optimization a subset of the activities of Operations.

However, unwittingly, these departments have evolved their own life-cycle best practices (PDIO) to leverage throughout the deployment and ongoing operations of an IPT environment – most importantly, they are consistent with the ITIL life-cycle approach. This lifecycle includes:

Pre-Sales/Planning & Design (Assess the Network Infrastructure, Prepare the Network to support Unified Communications, Analyze Network Management Best Practices)

Implement (Implementation Planning Meeting, Pre- Deployment Configuration Analysis, Production Device Deployment Management, System/Location/End User Cutover) and

Operate (Tier I/II/III Support, Voice Service Availability/Performance Monitoring, Configuration/Change Management).

In reality, the process of Planning, Design and Implementation within IP Telephony never really stops due to the nature of its trivial, user-enabled Moves, Adds, Changes, and the rapid and agile CTI application development possibilities. Indeed, even in the unlikely event of no changes to the IP Telephony environment, the underlying IP Data Communications infrastructure ensures that strict change management procedures be followed.

This meshing of ITIL with PPDIIO (See Figure 2) in the IPT environment presents an enormous opportunity to build upon the methodologies in the voice world and drive towards full alignment with IT. This can only be achieved under the caveat that the correct processes are adopted, and management technologies that support ITIL best practices are utilized.



Figure 2: Collaborative ITIL & PDIOO Model

Benefits of ITIL v3 in an IP Telephony World

The benefits of ITIL v3 in an IPT environment are apparent in the following core volumes:

- **Service Strategy**
 - Strategy Generation
 - Demand Management
 - Service Portfolio Management
 - Financial Management
- **Service Design**
 - Availability Management
 - Capacity Management
 - Continuity Management
 - Information Security Management
- **Service Transition**
 - Service Transition Planning and Support
 - Change Management
 - Release and Deployment Management
 - Service Asset and Configuration Management
 - Service Validation and Testing
 - Service Evaluation
 - Service Knowledge Management
- **Service Operation**
 - Incident Management
 - Problem Management
 - Request Fulfillment
- **Continual Service Improvement**
 - Service Reporting
 - Service Measurement
 - Service Level Management.

The Service Transition volume plays well in an IPT environment that depends on testing within a new infrastructure. With the rise of change management in enterprise organizations, the introduction of integrated testing ensures greater acceptance as new technology functionality is introduced. The Service Operation volume is tailor made for the help desk area where remote hands and diagnostic tools play a critical role in resolving trouble tickets.

Continual Service Improvement reminds voice engineering/network engineering executives of the importance of constantly fine tuning and refining the IPT infrastructure. For example, an organization opens a new branch office and the voice engineers must evaluate availability and capacity management before deployment. A linear approach will not work when adding a new cluster or enhancing existing IP phones but it is really a continual process that thrives by adapting the ITIL Life-cycle to IPT.

One of the more powerful aspects of the notion of Continual Service Improvement is embodied in the amount of thought that went into the use of the word Continual, rather than Continuous. Continuous would be very appropriate if restricted to a pure Operational, or “FCAPS” context, where the focus is on 24x7x365 “lights-out” management. However, ITIL V3 recognizes that there are many optimization activities that, while being a continual activity, have explicit start and end periods, and in some cases, long dormant periods in between. Optimal IP telephony examples include major feature releases, security patches, hardware upgrades, and even plant upgrades for UPS or Fire Suppression Systems, or a migration to a new Telecommunications Carrier.

One of the areas that has the biggest impact in addressing continual service improvement is Configuration Management, which itself is the cornerstone of Change Management. As further validation, Enterprise Management Associates, a leading independent industry analyst and consulting firm 100% dedicated to the IT Management market, noted in a 2007 survey that 71%

of the respondents set Configuration Management as a number one priority. The following are the basic elements of the configuration management process:

- Configuration control
- Configuration status accounting
- Configuration verification and audit
- Configuration baseline

In today's networks, even in a reasonably constrained project, addressing these requirements is impossible without tools and technology (See Figure 3). Technologies that play a pivotal role are IT Service Management solutions, Management systems, configuration management systems, installation and test tools, configuration analysis tools and reporting tools.

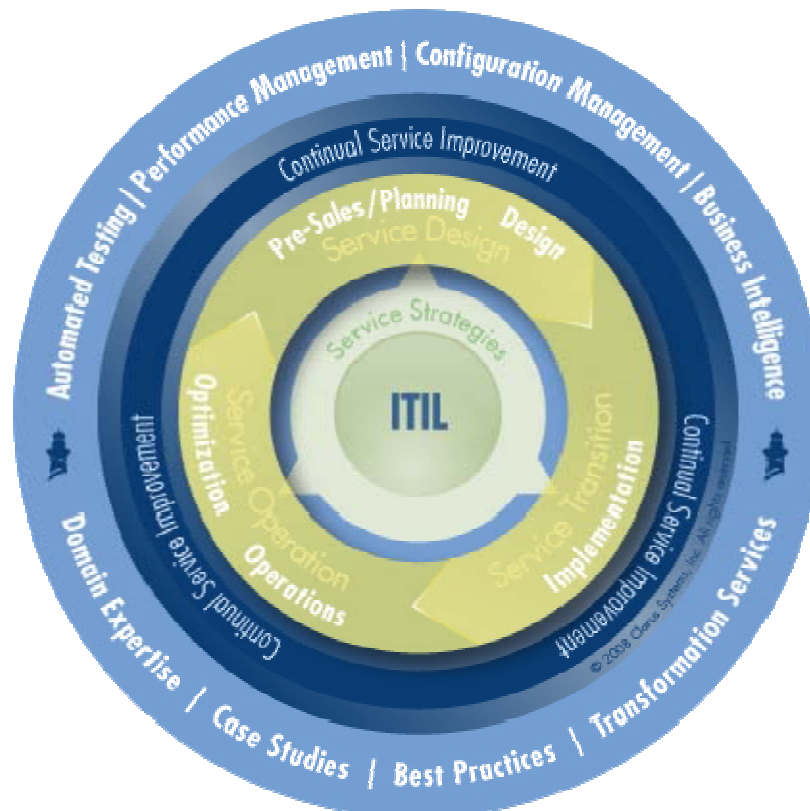


Figure 3: Implementing ITIL in IP Communications

In addition, one of the key concepts to come out of the ITIL best practices is the notion of a Configuration Management Database (CMDB). This acknowledges that holistic management of configuration across the enterprise is only possible, if all data is accessible from a central location. Early implementations of the CMDB attempted to do this in a literal form, storing all data in one physical location. However this is rarely practical or scalable. Conventional wisdom today, states that the CMDB will be a federation of databases, sharing data through open interfaces.

An example of federation would be the adoption of specific inventory and configuration management solutions in the areas of:

- network configuration,
- Security,
- data center visualization.

Rather than being restricted by the capabilities of a monolithic proprietary CMDM, enterprise are able to benefit from the interoperability facilitated by open interfaces, XML, and web-services.

Summary/Recommendations

ITIL, if embraced widely and wisely, can serve as the communications translation to bridge the gap between IT and IPT. Holding ITIL as the template for standards excellence, the adoption of best practices to provide a set of processes and methodologies to leverage throughout the deployment and ongoing operations becomes paramount. Leveraging these strategies can enable the successful execution and completion IPT deployment projects to straddle the divide.

About Clarus Systems and ITIL

Clarus Systems, Inc. is a leading provider of integrated voice service management and testing solutions for IP Communication deployments, upgrades and transformations. The company recently launched its new Transformation Services Deployment Best Practice guide, providing organizations with a standardized set of processes and methodologies to leverage throughout the deployment and ongoing operations of Cisco Unified Communications Manager (formerly CallManager). The adoption of these strategies can enable the successful execution and completion of CUCM Deployment projects based on a hybrid approach that bridges Cisco's PDIOO methodology with the Information Technology Infrastructure Library (ITIL) standards.

An enhanced version of Clarus Systems' flagship application, ClarusIPC® Plus⁺ includes a Voice Monitor module to help users monitor voice quality, service availability, and security conditions through the use of a sophisticated rules and policy engine. It also includes the Help Desk module, which empowers Tier 1 responders to be more effective by reducing end user involvement during troubleshooting.

The standard ClarusIPC® application is utilized by enterprises, systems integrators and managed service providers (MSPs) to support the deployment and optimization of CUCM solutions. ClarusIPC® is scalable and offers remote certification, configuration analysis, and troubleshooting – further validating operational integrity while building the foundation for a Unified Communications network. ClarusIPC® is the only testing solution endorsed by Cisco in the Best Practices guide, "Steps to Success" and recently received the "Best Tools" award from the 2007 Cisco's IP Telecommunications User Group (CIPTUG) Application Bake-Off.

About the Author

As Senior Vice President, Product Development, Gurmeet Lamba leads product development and the strategic direction of Clarus Systems voice service management application suite as well as represents the company at industry events, including keynotes and panels on Unified Communications. Prior to joining Clarus Systems, Gurmeet was Director of Engineering at Avaya, where he led the R&D division for its Unified Communications Solutions portfolio. He was responsible for all aspects of product development, leading a team of up to 300 engineers distributed across US, Europe and Asia developing IP Telephony applications. Gurmeet managed a portfolio that accounted for more than 85M voice mailboxes deployed worldwide. At Avaya, he led the transition to IP standards based next generation Unified Messaging solutions, speech recognition & wireless based mobility applications. Previously, he was the Director of Engineering at the Octel Messaging Division in Lucent Technologies, where he was accountable for driving product development in both enterprise and service provider converged communications solutions. Additionally, Gurmeet held engineering leadership positions at AT&T Bell Labs, where he developed various enterprise telephony and networking solutions, for which he and his team were awarded the Bell Labs Presidents Award..



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