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The Metric Tree

Consider a Service Desk that is posting excellent first-call response metrics for hung router ports. However, the concurrent service metrics are showing customer dissatisfaction with quality levels because of the frequency of the interruptions caused by the malfunctioning routers. In this case, a combination of process and component metrics would have given a more complete picture of the service's metrics.

Process theory and practice drive the ITIL Lifecycle phases and activities within them. The Service Design phase of the ITIL's IT Service Management Lifecycle is no exception. Service Design and its activities adopt a process-oriented approach to the design of new or changed IT Services. What is different, however, is that the Service Design phase also assumes the responsibility for assisting ITIL process owners in designing processes to ensure that all processes use standard terms and templates, are consistent, and provides end-to-end integration across all areas. In other words, it is "processes designing processes."

One objective of the Service Design phase is to design process templates that focus on built-in improvement mechanisms. In general, ITIL considers it preferable to design practical processes that can be easily adopted throughout the or-

ganization, even if the processes are less than 'perfect.' Built-in improvement mechanisms will allow improvement in the future. A similar approach should be taken when designing IT Service measurement systems.

Almost everyone in IT knows the old saw, "If you can't measure it you can't control it." Yet the majority of new or changed systems deployed today either operate under no, or an inadequate, measurement system. An IT Service measurement system should consider all aspects of what it takes to measure an IT Service's utility (fit for purpose) and warranty (fit for use). This means that the scope of the measurement system extends beyond just the technical measurements of component or system availability and performance.

The diagram on the next page illustrates this. Here we look at this concept as a function of the capability of the service provider, its service management process capability and the performance of the supported IT Services.

The Service Provider

The Service Provider is measured in the context of its "organizational capabilities" to utilize its "resources" to provide the IT Service required by its customer. This is applicable for both internal

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“The whole idea behind ITIL is that IT Services should be delivered in the natural context of an IT Service’s lifecycle.”

and external service providers. Their organizational capabilities span management, organizational structure, deployed processes, organiza-



tional knowledge and people. These capabilities are needed to act efficiently and effectively on the organization’s available resources (capital, infrastructure, application, information and people) to deliver IT Services that are fit for purpose and fit for use.

The “dot bomb” era was littered with the bleached bones of service providers that had plenty of resources (money and technology) and very little organizational capability.

The Service Management Processes

The whole idea behind ITIL is that IT Services should be delivered in the natural context of an IT Service’s lifecycle, and that the phases of that lifecycle are supported by processes and their activities. The quality of an organization’s process capability (Quality of Practice) is measured by the four metrics.

Progress metrics measure the progress toward the completion of something. Examples are milestones and deliverables as defined in a formal project plan. Note that if there is no project plan, it becomes exceedingly difficult to define a milestone or to declare a deliverable as evidencing progress.

Compliance metrics measure compliance to a regulatory standard or goal. It is generally an all or nothing measurement. Although you may comply with 6 out of 10 (60%) of some regulatory standards or points, you cannot comply 60% to any one standard or point.

Effectiveness metrics measure accuracy and completeness. An example is ‘responding to 90% of Service Desk calls within 20 minutes’ or ‘reducing repeat calls about the same incident from 15% to 5%.’

Efficiency metrics measure the utilization of resources. An example would be to measure the efficiency gained from establishing an automated Request Fulfillment system versus a previous manual one.

All metrics start by establishing goals, defined by Key Goal Indicators that indicate which attributes contribute to the success of reaching the goal. A method to define goals and their supporting metrics is the Goal Question Metric (GQM) approach.

GQM

The [Goal-Question-Metric \(GQM\)](#) approach arose from work done in software engineering. GQM offers a solution for clarifying any statement, especially statements expressing or related to attaining a goal. GQM is very useful for defining and clarifying transparent Goals, *Critical Success Factors (CSFs)*, as well as *Key Performance Indicator (KPI)* metrics.

GQM can help derive metrics from questions about goals. Fundamentally, KPIs measure progress toward goals as reflected in CSFs. KPIs are then quantifiable measurements, or metrics. GQM has some powerful benefits when applied to IT Service Management:

- Simple, form-driven application
- Easy to use in groups
- Works with all processes

Classroom Training Programs

itSM Solutions’ classroom training programs are delivered by an certified instructor in a physical or virtual (webinar) classroom. Classroom program are one to five days in length and come with student workbooks, checkpoints and sample exams. Instructor services can be provided by itSM Solutions or by an instructor selected by the client who meets the certification requirements to deliver the program. Onsite, online or testing center exam services are available for most ITSM training programs.

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“Organizations realize the full benefit of metrics only when they aggregate them to provide a picture of how well the organization is doing as a whole.”

Education Management Service

itSM Solutions' IT Education Management Service enables enterprise training coordinators to put in place a comprehensive student planning and management service that will ensure a successful education outcome for both student and employer. This easy to implement education management service helps IT organizations get the right training to the right person at the right time by identifying and justifying anticipated IT training needs.

- Produces metrics customized to the *Continuous Service Improvement* (CSI)
- Delivers powerful insight into organizational and process structure
- Reflects the viewpoints of the staff (IT, customer, stakeholder) involved

The Service

The Quality of Service is an aggregation of the quality of each component that participates in a given IT Service. The difficulty is understanding and documenting the complex component relationships within the infrastructure, and understanding and monitoring the components in such a way as to gather and manage the minimal amount of meaningful data. These data are usually grouped into five broad areas; availability, performance, capacity, failures and changes.

The Metrics Tree

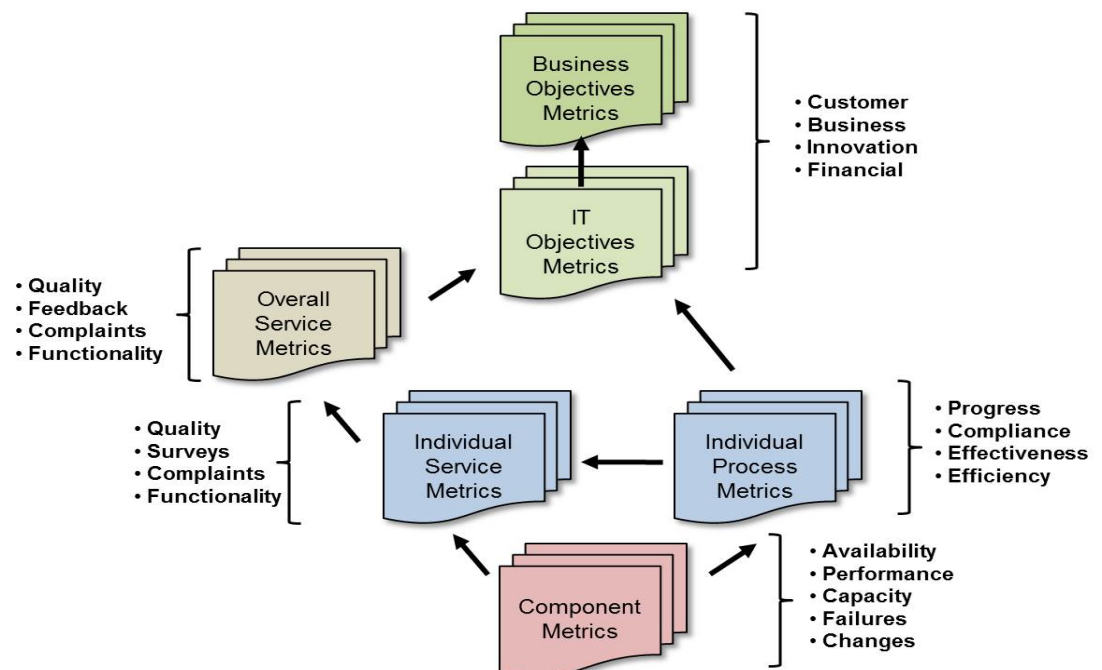
Detail metrics do an outstanding job of chronicling the success or problem areas of individual

processes or tools. However, organizations realize the full benefit of metrics only when they aggregate them to provide a picture of how well the organization is doing as a whole.

Consider a Service Desk that is posting excellent first-call response metrics for hung router ports. However, the concurrent service metrics are showing customer dissatisfaction with quality levels because of the frequency of the interruptions caused by the malfunctioning routers. In this case, a combination of process and component metrics would have given a complete picture of the service metrics.

The “metrics tree” depicted here progressively aggregates metrics. Based on a “tree data structure” It considers how individual component metrics contribute to both individual process and individual service metrics, and further folds individual process metrics into the metrics for the individual services and ultimately overall services.

The top two levels borrow from the four quadrants of the Balanced Scorecard, developed by



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“The “metric tree” is just one of the techniques well managed and highly-effective IT organizations use .”

Drs. Robert S. Kaplan and David P. Norton, to demonstrate how well the IT and business strategies are being achieved in each area.

Summary

A major difference between a marginally-effective and a highly-effective IT organization is that the latter knows their Capability of Practice, Quality of Practice (Process) and Quality of Service. The “metric tree” is just one of the techniques well managed and highly-effective IT organizations use to measure their capabilities and maturity as service providers.

About the Author: David Nichols



Dave is a founding member of itSM Solutions® LLC. He has over 35 years in information technology (IT); including graphic arts, medical, newspaper and computer graphics industries. As one of the founders of itSM Solutions he drew on that experience in the development and delivery of innovative consulting and training products that meet the real life needs of today's IT professionals.

Along with co-founder Janet Kuhn, he was an early pioneer in the development of web-based ITIL certification programs and online and classroom blended distance learning solutions. Together David and Janet were awarded the itSMF 2001 Product of the Year award for ITSM Best Practices Online (the first accredited ITIL online training program). David authored itSM Solutions' ITIL courseware along with numerous study guides and “Do IT Yourself” newsletter and industry articles. Along with partner Rick Lemieux, he's co-authored several whitepapers on ITIL adoption and IT Service Management

training. Over the years he's worked with several Fortune 500 companies to align their IT goals to meet the business' objectives and achieve IT operational excellence. David holds an Expert certification in IT Service Management and has served several years as a representative of the ITIL Accredited Training Organizations (ATO) on the ITIL ATO Sub Group, and the ITIL Qualifications Board.



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