Measuring ITSM
Are Your Processes Making The Grade?

Executive Summary

One of the major ambitions of IT Service Management (ITSM) is for an organization to break down silos and operate as a unified group of functional teams with a focus on providing value in the form of services to the business. Common and consistent process across the organization based on ITIL® best practices is accomplishing this in organizations, but often the process measurement remains compartmentalized with each process responsible for its own metrics. Process metrics are important to demonstrate that a process is achieving its objectives in an effective and efficient way, and best practice recommends that all processes be measureable. The next step is to bring these process measures together in a way that will allow an organization to determine the health and effectiveness of their overall ITSM process capability, support ITSM governance, and drive continual service improvement.

The most effective way to accomplish this is through an ITSM Balanced scorecard. In this approach, each process has a set of measurements defined. Results of these measurements are combined to produce an overall process score. Once all processes are measured, the overall score for each process is combined to result in an ITSM balanced score. Think of each process as a subject in school (Math, Science, Spelling, etc.) Each subject has a number of exams that are graded and the average of those exams determines your grade in that subject. At the end of term, the final grade from each subject is included on the grade card and may be combined to yield a grade point average. In this analogy, the subjects are like the processes being measured, and the exams are the individual measurements within the process. Our grade card, therefore, is the overall ITSM balanced scorecard which can provide a single summary score suitable for executive management while allowing the ability to drill down to details used for functional and process management.

The purpose of this white paper is to describe a practical method for developing process measurements in a way that facilitates coordinated assessment of ITSM process efficiency and effectiveness across the organization.

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1)   PROCESS MEASUREMENT

The ITSM balanced scorecard starts with each process defining measurements. It is these process measurements that will demonstrate if the process is achieving the defined objectives in an effective and efficient way. To do this, it is recommended that each process define 3-4 Critical Success Factors (CSFs), which support the defined objectives of each process. A CSF is something that must happen in order for a process to be successful. Each CSF should have 3-4 Key Performance Indicators (KPIs) defined. These are the actual measurements that prove achievement of the CSF.
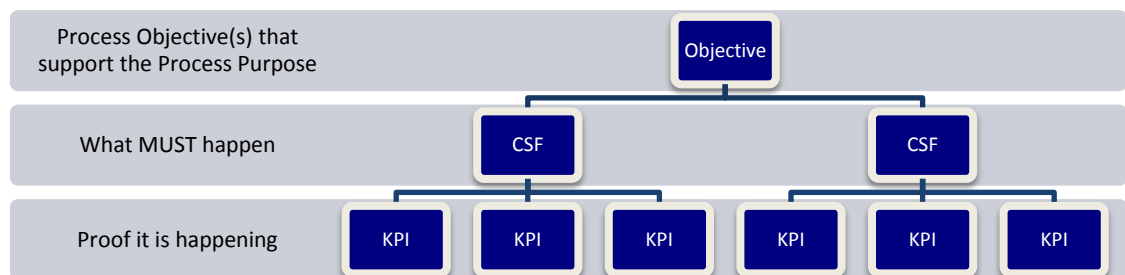

Figure 1: Relationship of KPIs to CSFs and Process Objective

It is important that the KPIs that are chosen not only support the CSFs, but also are balanced across various categories. ITSM measurements generally come in four categories (Compliance, Quality, Performance, Value), and careful planning must take place to ensure that process measurements are chosen from all categories (thus a 'balanced' approach).

1.1   Compliance Metrics

Compliance metrics determine if the process is being performed as documented in policies and procedures. This is one category where many organizations struggle with when creating KPIs. Often the challenge with defining compliance KPIs is how to measure something that isn't happening (and if it is not happening, no data exists to measure!). One approach is to look at the documented process policies. This may be a great starting point to define compliance metrics, but it may be necessary to do a little data relation and inference – looking at 'cause and effect' relationships with other processes. For example, it may be possible to identify Incidents that were not logged, by looking at Problem Management and Change Management data. By definition, a Problem "is the underlying cause of one or more Incidents" (Source ITIL Service Operation 2011 edition. Section 4.4), so a Problem record with no related Incidents may indicate lack of compliance (after having accounted for 'proactive' problem management).

> *The challenge with defining compliance KPIs is how to measure something that isn't happening (if it is not happening, no data exists to measure!).*

Change requests for 'corrective' changes with no documented Incident (either direct or via an attached problem) may also point out lack of compliance. For example, the Change Management process gets a change request described as to 'Fix XYZ' and there is no record of XYZ ever being broken. While these examples are not necessarily true 100% of the time, this approach may serve as a starting point with further (likely manual) inspection and scrutiny against documented process policies being required.

Some other examples of Compliance metrics may include:

- Percentage of Changes released within the approved window
- Percentage of Services with agreed Service Level Agreements
- Percentage of Configuration Items (CIs) modified without authorized Change request

1.2. Quality Metrics

Quality metrics are used to demonstrate how well something is being done (or how free it is of errors). Clearly, all processes should be performed with high quality so as to achieve their defined objectives.

Some examples of Quality metrics may include:

- Percentage of Incidents misassigned
- Percentage of Incidents not closed after being marked as 'resolved' (due to user feedback of Incident not actually resolved)

1.3. Performance Metrics

Performance metrics demonstrate how fast or slow something is happening. Some processes directly reference speed in their objective such as Incident Management which aims to "restore normal service operation as quickly as possible" making performance measures especially important (Source ITIL Service Operation 2011 edition. Section 4.2.1). It must be noted that, even in Incident Management, speed alone is not a comprehensive measure. Too often, emphasis is placed on speed sacrificing quality and value. Worse, speed is used as an excuse to circumvent or bypass a defined process. When used correctly, performance metrics can be a good indicator of overall process throughput.

Some examples of Performance-based KPIs might include:

- Average Incident Resolution Time
- Percentage of Incidents Resolved within Agreed Target Times
- Average time to hold Root Cause Analysis session after Problem Identification

1.4. Value Metrics

One of the most powerful KPI categories is *Value*. These measures seek to answer the question "Are we making a difference?". At the end of the day, this is the true measure of the process output. Value is most difficult to define since the customer generally determines value. Therefore, it must be understood who is receiving the output of the process. This may be an IT customer, business customer, or another process. Value metrics should look at the output from their point of view.

Some examples of Value metrics might include:

- User satisfaction following Incident resolution
- Percentage of Incidents opened by Event Management and resolved prior to user impact

A 'KPI Sheet' is a helpful way to document and agree on these items, and adds an important level of transparency to the KPI.

Each process should contain a balance of KPIs that represent all four categories to properly measure efficiency and effectiveness. The very best process will be useless if no one is actually doing it. A process that happens fast, but must be repeated several times to get the right result, is no more effective or efficient than a process that produces output slowly, or one that makes no difference to the customer.

Once process CSFs and KPIs are documented and agreed upon, the KPIs must be defined in enough detail to leave no ambiguity as to their source, calculation, target, and other details. A 'KPI Sheet' is a helpful way to document and agree on these items, and adds an important level of transparency to the KPI. This also helps reduce the disagreement about results once they are calculated and published, so discussion can focus on improvement rather than how the result was obtained.

The KPI sheet should include information such as:

- KPI Name
    - o The name of the KPI describing the measurement
- KPI Owner
    - o Who is accountable for the result (and achievement) of this KPI?
- Frequency of Calculation Interval
    - o How often is this KPI calculated (monthly, annual, etc.)?
- KPI Category
    - o Compliance, Quality, Performance or Value
- Key Performance Indicator Goal
    - o What does success look like? (what is a good result?)
- Source of Data/Table/Definition
    - o Where is the data coming from (specific database, field or query used to obtain the data)?
- Calculations to be performed
    - o What calculation is performed on the data to obtain the KPI result?

Key Performance Indicator:			
KPI Owner		KPI Goal:	
Calculation Interval:		KPI Category:	
Metrics Required	Data Source	Data Table	Definition
KPI Calculation			

Figure 2: Example of a blank KPI Sheet

It is important to note that the result of KPIs should all be expressed as a percentage. This will allow the combining or averaging of scores to produce a single process score, and even higher, to produce an overall ITSM balanced health score.

2) CALCULATING KPIs & PROCESS SCORE

Once KPIs are defined in a KPI sheet, the calculation of metrics becomes pretty straightforward. The KPI is calculated as described, and a 'score' is determined by measuring the progress toward the defined goal. As an example, if the goal is that 90% of Incidents are resolved within their target time and this period, and 85% of Incidents were resolved within their target time, it can be calculated that the KPI scored a 94%.

$$\frac{85}{90} = \frac{x}{100} \implies 90x = 8500 \implies x = \frac{8500}{90} = 94.4$$

Once all KPIs are calculated, their scores can be averaged together to produce a single score for the entire process. If desired, letter grades, colors, or other indicators may also be used to demonstrate what score is considered 'good' or 'in need of improvement'.

Request Fulfillment					
Measure	**KPI/PI**	**Perspective**	**Monthly Result**	**Goal**	**Monthly Score**
Percent of Service Requests with fulfillment workflow defined	KPI	Quality	47%	50%	94%
Increased Percentage of Service Requests completed within agreed target times	KPI	Performance	88%	80%	100%
Decreased number of Incidents marked as Service Requests	KPI	Compliance	23%	10%	86%
Increased level of client satisfaction with the handline of Service Requests	KPI	Value	94.70%	92.30%	100%
Increased percentage of Service Requests initiated by Self Service	KPI	Value	28.00%	50%	56%
Score			87%		

Figure 3: Example of Process KPI measurements with averaged monthly score at bottom

3)   THE SCORECARD

Each overall process score for the measurement period can be combined to produce a single score which represents an organization's overall ITSM process health. This score can be trended over time to chart progress toward ITSM program goals and may become a permanent contributor to an organization's overall IT balanced scorecard (For example, the balanced scorecard developed by Kaplan-Norton).

The final score may be viewed two ways. First, as described, all process scores average to a single score. Alternatively, all KPIs from all processes may be grouped into the four categories and averaged to produce a single score for each category. These four scores may still be averaged to produce a single balanced score. This approach provides a slightly different view and may be very helpful in targeting improvements in culture at the program level. As an example, an ITSM score of 85% may have been produced from all contributing process scores. In a case where all processes individually scored close to the 85% it may be difficult to identify improvements. An analysis of the scores across four categories, however, may reveal that the Performance, Quality, and Value scores are near 90% and the Compliance measure is around 60% indicating some opportunity for organization-wide improvement related to education, training, and controls for established processes.

Process Health By Month

	July	August	September	October	November	December	January	February	March	April	May	June
Incident	83%	90%	95%	90%	92%	92%						
Request	80%	87%	82%	85%	85%	85%						
Problem	43%	62%	70%	70%	65%	75%						
Change	79%	80%	82%	80%	85%	85%						
Financial	67%	67%	70%	72%	80%	82%						
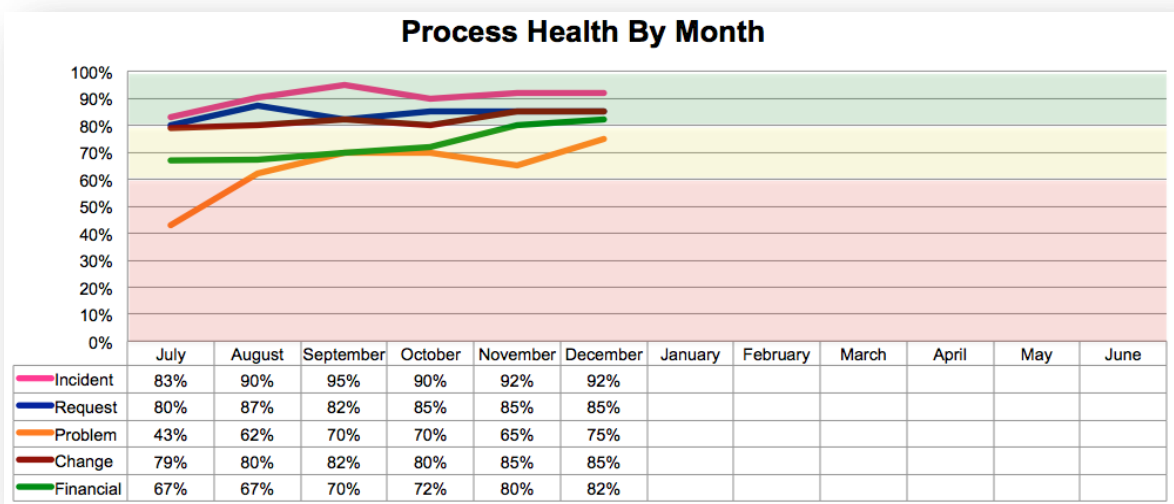
Figure 4: Example showing process score for each process trended over time

Overall Process Health
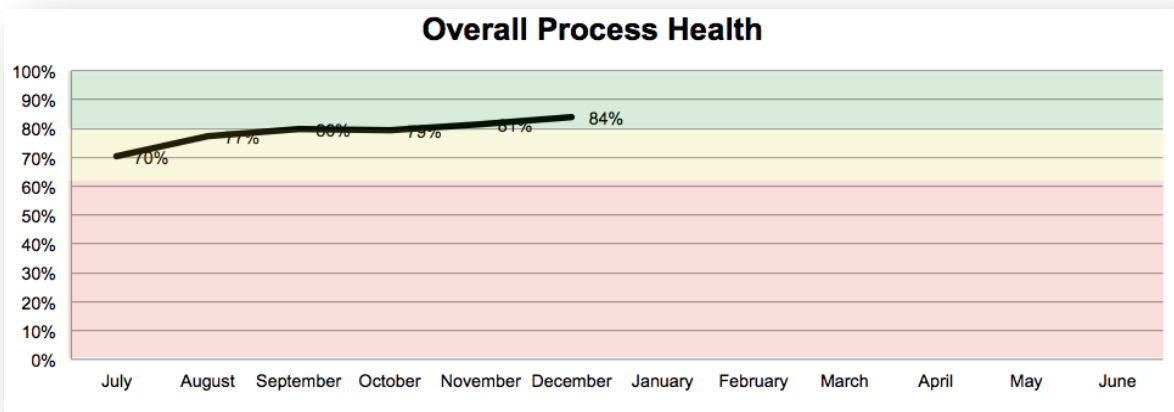
Figure 5: Example showing combined process score trended over time

Monthly Balanced Scorecard by Perspective

	July	August	September	October	November	December	January	February	March	April	May	June
Performance	83	93.75	93.75	90	95	92						
Quality	90	94.60	94.60	90	85	88						
Value	67	88.00	88.00	90	92	95						
Compliance	61	48.83	50.00	52	53	55						
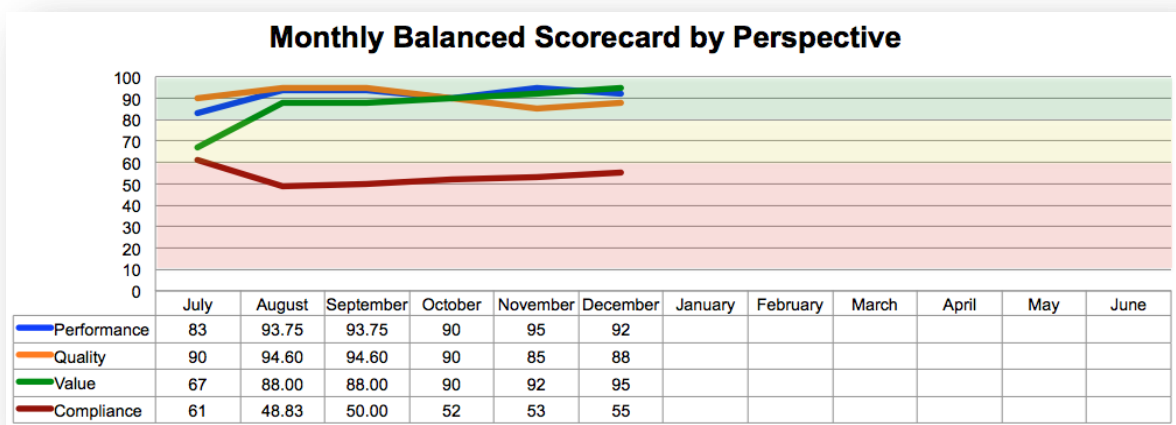
Figure 6: Example showing process scores grouped by KPI Category trended over time

Balanced Score: 81.5%

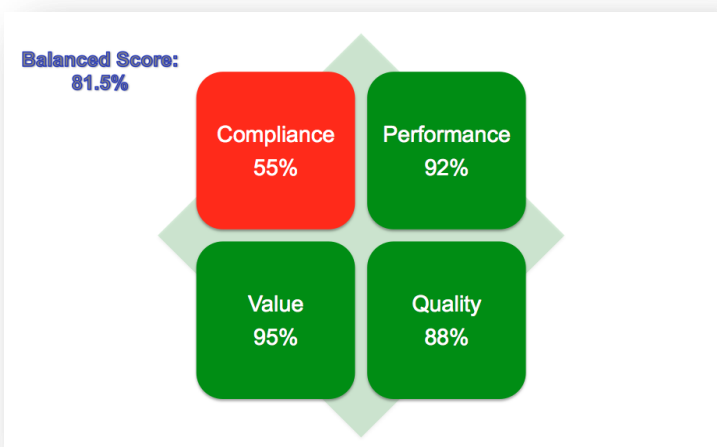| Compliance 55%	Performance 92%
Value 95%	Quality 88%

Figure 7: Example showing KPI scores by Category and averaged balanced score

4) WHAT TO DO WITH THE SCORECARD

Once the process metrics have been defined and produced along with the ITSM process Balanced Scorecard, it is critical that the results are communicated and action items defined and agreed. The primary benefit of presenting process measurements in this way is that it provides the ability to 'roll up' and 'drill down'.

Each level of management/leadership or stakeholder role in the organization will want to view the information in a slightly different way. In many cases, executive IT leadership may be interested only in the top-level score and breakdown by process (where they will look to process owners to be accountable for individual process KPIs). Process Owners will be interested in their process(es') overall score and how it influences the combined ITSM process score (positively or negatively). They can then work with their process managers to take appropriate action to improve their process and contribution to the overall ITSM process score.

The ITSM leadership or Service Management Office (SMO) will take a holistic look at all process measurements within the scorecard to support Continual Service Improvement. While process owners are accountable for their process(es') measurements and results, it is common that the SMO (or appropriate role within the ITSM leadership) is accountable for creation of, action on, and results associated with the overall ITSM scorecard. This is a key part of the organization's ITSM process governance model and continual service improvement effort.

5) COMMON PITFALLS

The first area many organizations have trouble with is changing process CSFs and KPIs. While it is not forbidden to change measurements, it must be done with careful consideration and for the right reasons. Process CSFs and KPIs should not only support the defined objectives of the process, but should also be set to drive desired behaviors.

Over time, as the new behaviors become the 'norm' and are rooted in the organization's culture, it may be appropriate to update CSFs and KPIs to drive or re-enforce new behaviors, and continue the growth of the organization's capabilities. Care should be taken, however, not to change process measurements only because there is displeasure with the results. Also, extreme attention should be given to how a change in KPI will affect the overall score trending and history for that process, as well as the overall ITSM process Balanced Scorecard. Needless to say, best practice would suggest that the documented process measurements are within the scope of the Change Management process for any changes to KPIs.

The second challenge many organizations may encounter is information overload. With too many numbers, reports and goals, implementation of process measurement and even the overall ITSM Balanced Scorecard may seem redundant, adding work, or just "more numbers we don't need".

If this is the case, it may present an opportunity to streamline, and ensure the right information is communicated to the right audience. Remember, process measurements are not the same as 'reports', and how an organization presents and communicates their measurements will greatly influence opinions in this area.

> *Care should be taken, however, not to change process measurements only because there is displeasure with the results.*

The 'roll up/drill down' approach may be most helpful by allowing defined KPIs to be summarized for leadership, while still providing the ability to drill down to details. This summary also sets the base or starting point for functional teams to apply an additional filter, and see results for just their area.

In this case, it is important that teams realize that this filtered view is helpful for the management and improvement of a specific team, by showing how their contribution positively or negatively, affects the overall process and ITSM score. *It must be clear that while a single team may be doing great; at the end of the day, the score that counts is the one that looks at the process(es) across the entire organization.*

6)   CONCLUSION

Metrics, measures, KPI and CSF and reports are abundant in every organization, but too often these results are not chosen correctly, not clearly defined, have no established target/goal, and drive no real action or change. One way to help drive actionable process measurement is to define accountability not only at the process level, but to roll up each process measurement into an overall ITSM process balanced scorecard which reflects an organization's ability to perform ITSM in an efficient and effective manor supporting the delivery of IT services.

CSFs should be chosen that align to defined process objectives and be supported by Key Performance Indicators. These KPIs should represent all four of the recommended categories (Compliance, Quality, Performance, Value) so that a well-rounded, balanced, measurement can be made. Process metrics should be carefully documented and formally agreed to remove any ambiguity as to their source, calculation, goal, owner, and relation to the process objectives.

It is important that process measurement not stop at the process level. Each process 'score' should contribute to a larger ITSM process balanced scorecard owned at an SMO or program leadership level and used to measure the overall capabilities of an organization to deliver quality IT services that meet business need.

7) ABOUT PINK ELEPHANT

Pink Elephant is proud to be celebrating 20 years of ITIL experience – more than any other supplier. Operating through many offices across the globe, the company is the world's #1 supplier of ITIL and ITSM conferences, education and consulting services. To date, more than 350,000 IT professionals have benefited from Pink Elephant's expertise. Pink Elephant has been championing the growth of ITIL worldwide since its inception in 1989, and was selected as an international expert to contribute to the ITIL V3 project as authors of V3's Continual Service Improvement book and through representation on the International Exam Panel. For more information, please visit www.pinkelephant.com.

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CONFERENCES: Pink Elephant is the world's largest producer of ITSM conferences and delivers several major events per year to thousands of IT professionals.

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