KPI Dashboard Component Balance Scorecard

Jorge Higueros

Jorge.higueros@gmail.com

Nagios® WORLD CONFERENCE 2014

Who I am

Jorge Higueros

- 10 Years IT Experience
- Master IT security Systems
- Cobit 5 Certified
- Offensive Security Certified
- ITIL V3 Service Operation
- ISO 20000 Implementing
- PCI Auditor

Introduction

We talk about the requirements for reports, KPIs, and metrics differ for each business/organization.

A range of metrics that can be used will be covered, along with information on what types of reports are useful, how we built the KPI system with Nagios XI , and objectives we used to evaluate the KPIs.

Benefits

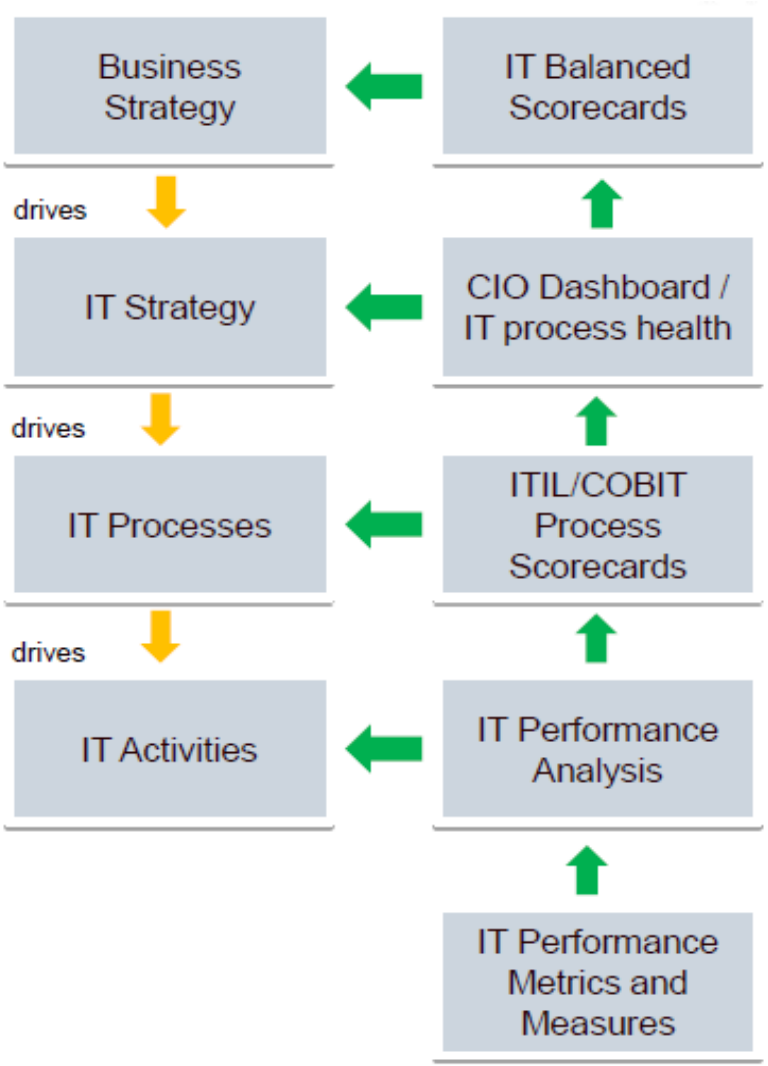
- Know the KPIs and the activities specific for ITIL processes;
- Identify, select and analyze KPIs from the IT Service Management perspective;
- Exercise the utilization of ITIL practices, the application of IT standards and interpret the connections between processes around Nagios.

Agenda

- What is driving IT Today?
- IT Performance Managment
- What is a Key Performance Indicator (KPI)?
- What Are Metrics?
- ITIL Service Design with Nagios XI
- Our Target Availability Management
- Our Target Capacity Planing

What is driving IT Today?

Monitoring



IT Performance Management

IT Performance Management

IT Performance Management is about measuring, improving, and demonstrating the value of IT

"IT Performance Management is the effective combination of methods, metrics, data, and tools that enables organizations to define KPIs that are relevant to them, understand their current performance against predetermined goals, and enables organizations to build on this information, initiate improvement activities, and achieve optimal IT performance in line with business requirements"

* Metricus definition for IT Performance Management

IT Performance Management

IT Performance Management is closely related to IT performance measurement.

They are sometimes mistaken for each other. Strictly speaking, Performance Management is the larger domain and includes performance measurement as a component.

- Performance measurement is the process of assessing progress toward achieving predetermined goals*. Performance Management builds on that process, adding the relevant communication and action on the progress achieved against these predetermined goals.

* Wikipedia

IT Performance Management

What is not defined cannot be controlled.

What is not controlled cannot be measured

what is not measured cannot be managed or improved

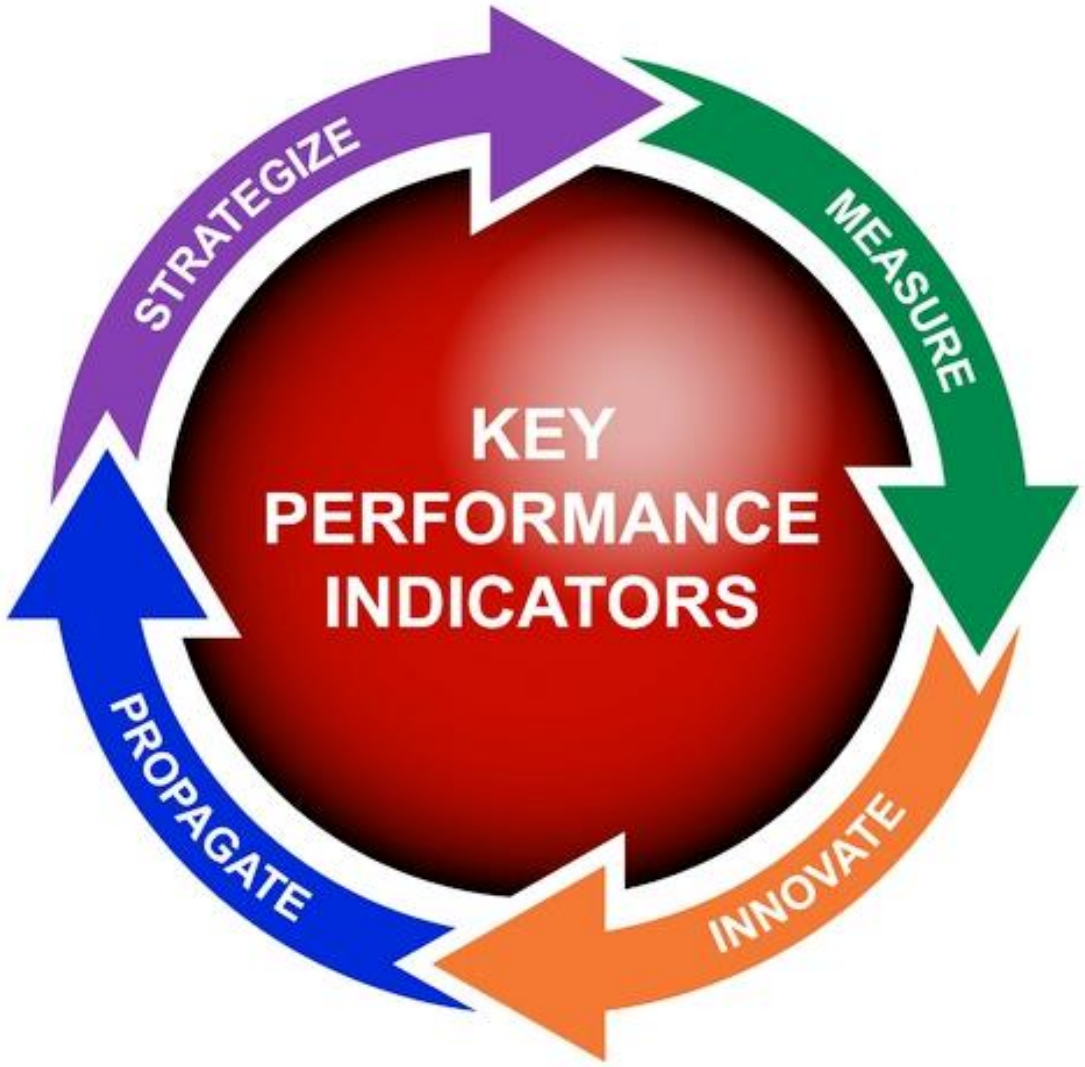
- Just like other business departments, IT has to continuously improve and ensure alignment with the business
- Ultimately the only way for IT management to demonstrate value and control is by defining, measuring and managing IT performance
- A great idea, but the idea often gets stuck at not being able to successfully measure IT performance and not being able to bring everything together into a view that allows the IT management to take informed IT decisions.

What is a Key Performance Indicator (KPI)?

What is a Key Performance Indicator (KPI)?

Key Performance Indicators (KPIs) help organizations understand how well they are performing in relation to their strategic goals and objectives. In the broadest sense, a KPI can be defined as providing the most important performance information that enables organizations or their stakeholders to understand whether the organization is on track or not.

What is a Key Performance Indicator (KPI)?

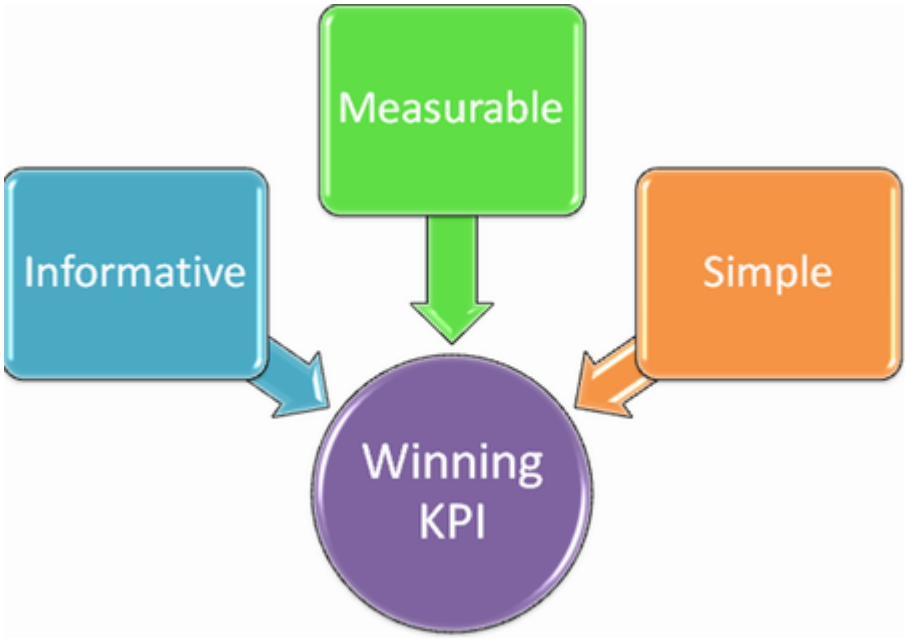


Measuring what matters the most

Before KPIs can be identified, the following requirements must be met:

A predefined organizational process.

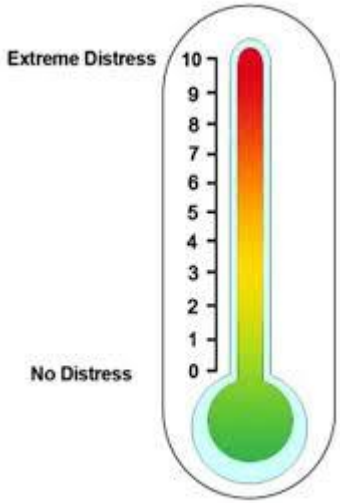
Clear business objectives for the process.

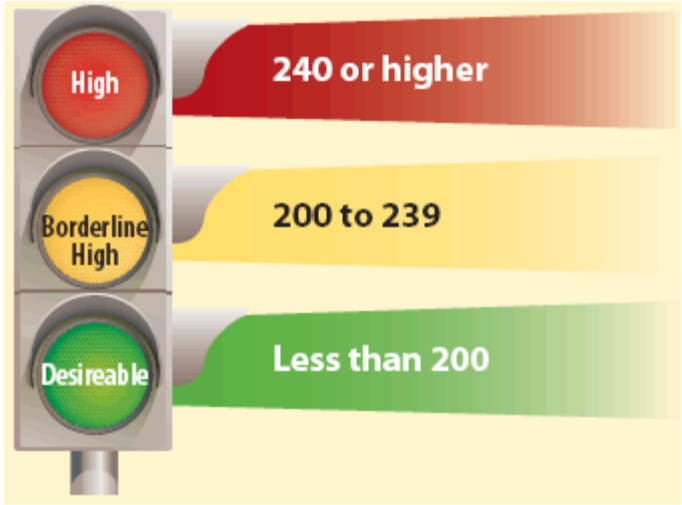


Quantitative and qualitative measurements.
An active approach to finding and remedying enterprise variances.

Example

For example, when you go to your doctor he might measure blood pressure, cholesterol levels, heart rate and your body mass index as key indicators of your health. With KPIs we are trying to do the same in our organizations



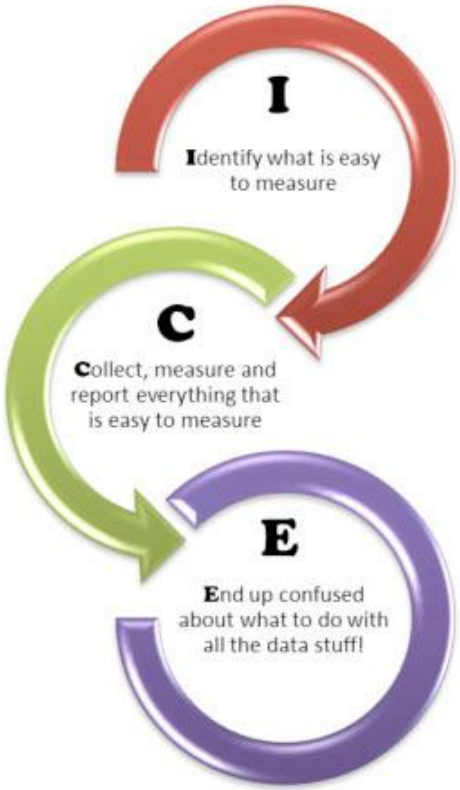


Why Use KPIs?

KPIs serve to reduce the complex nature of organizational performance to a small number of key indicators in order to make performance more understandable and digestible for us. This is the same approach we use in our daily lives.

Why Use KPIs?

KPIs are above all else, a set of indicators to measure data against, a sort-of enterprise success gauge. Ultimately, they help an organization assess progress toward declared goals.

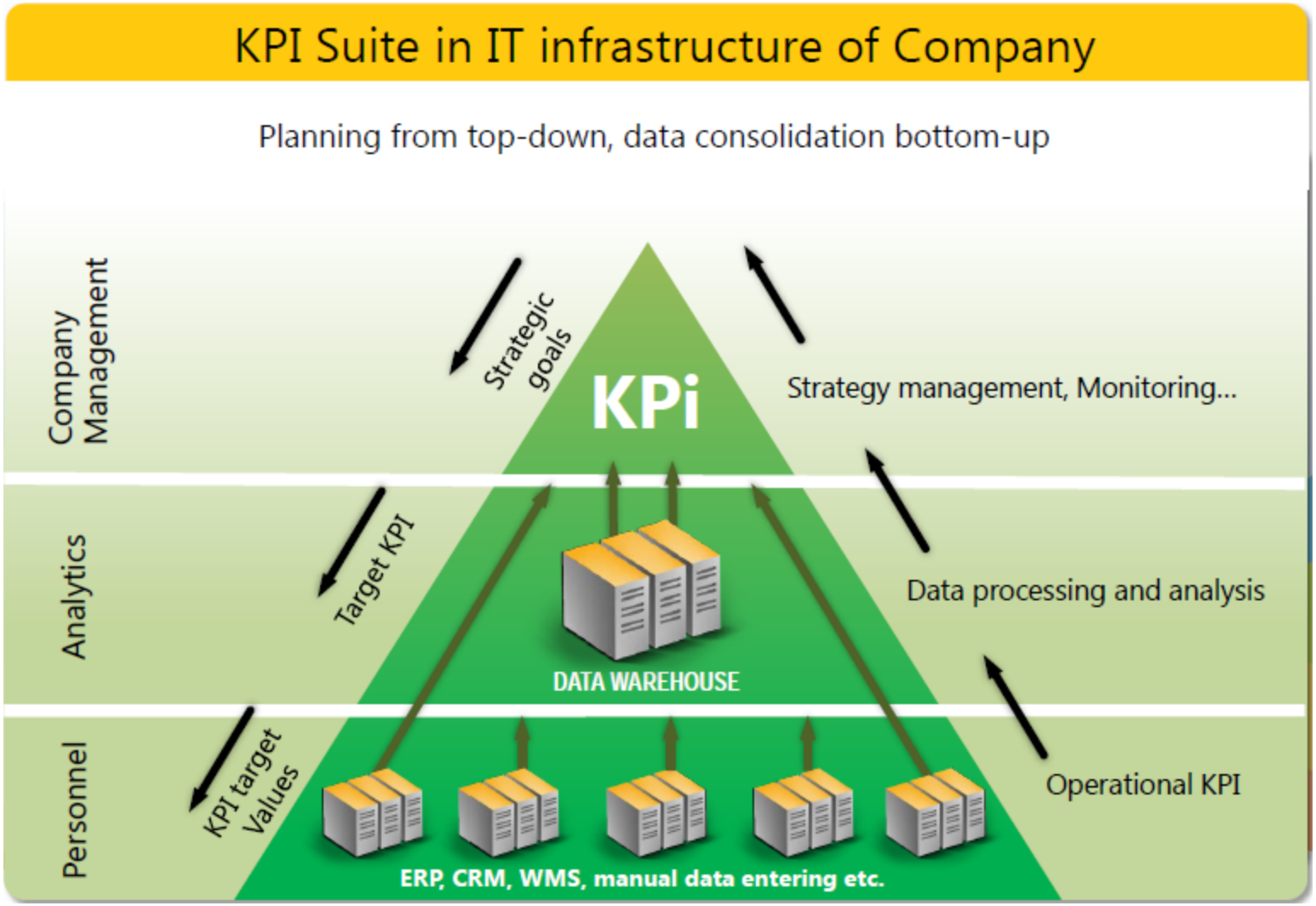


Why do we measure performance?

The reason why we measure performance in organizations is often reduced to simple homilies, such as ‘you can’t manage anything unless you measure it’ or ‘what gets measured gets done’. The three main reasons for measuring performance are :

- To learn and improve
- To report externally and demonstrate compliance
- To control and monitor people & IT Systems

KPI in the real life!!



Metrics?

What Are Metrics?

When we use the term metric we are referring to a direct numerical measure that represents a piece of business data in the relationship of one or more dimensions.

What Are Metrics?

$$\% \text{ Availability} = \frac{\text{Agreed Service time} - \text{Down Time}}{\text{Agreed Service time}} * 100\%$$

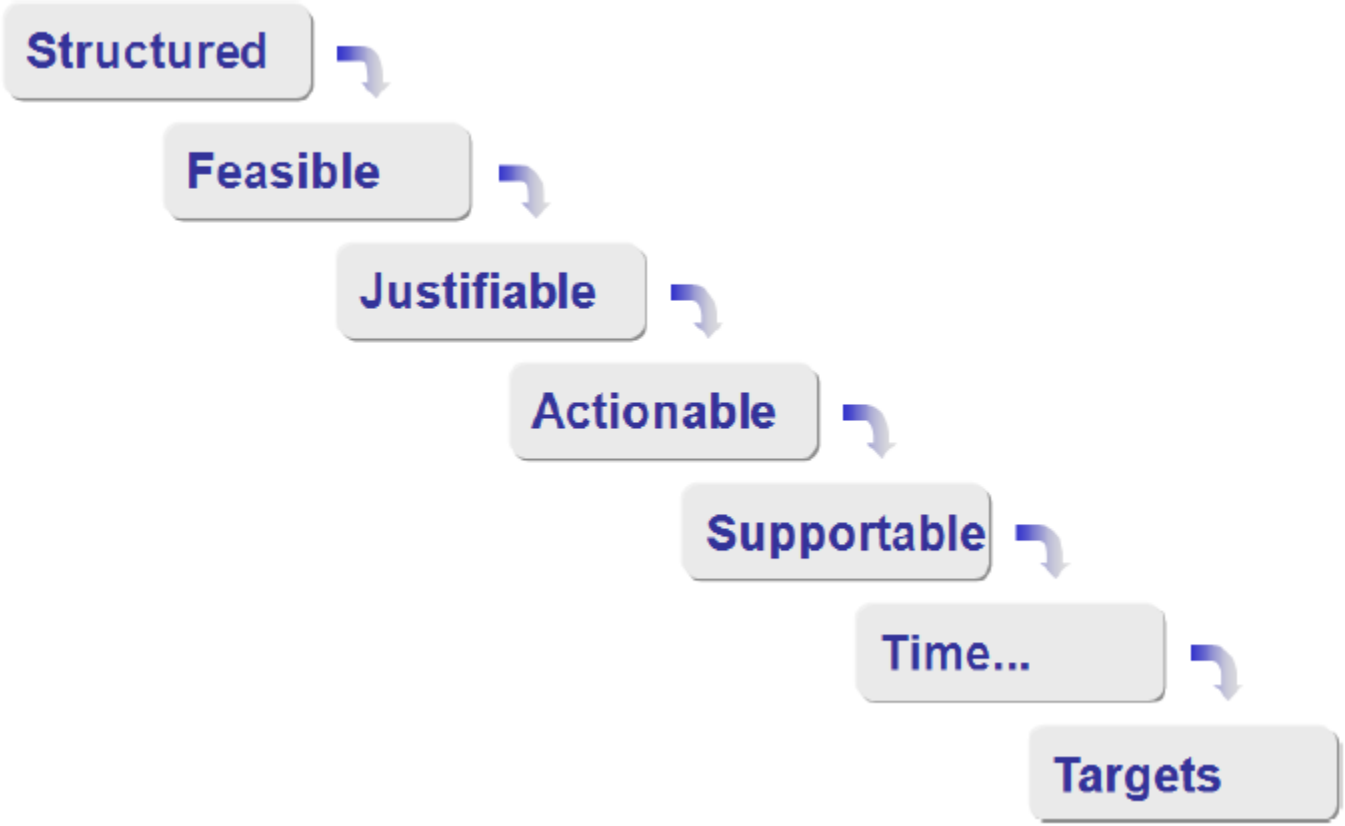
$$\text{Mean Time to Restore Service (MTRS)} = \frac{\text{Total Down Time}}{\text{Number of Breaks}}$$

$$\text{Mean Time Between System Incidents (MTBSI)} = \frac{\text{Available Time}}{\text{Number of Breaks}}$$

$$\text{Mean Time Between Failures (MTBF)} = \frac{\text{Available Time} - \text{Down Time}}{\text{Number of Breaks}}$$

Metrics are not the KPIs themselves; rather they are needed in order to determine if our KPIs have been satisfied. The KPI that might use the above metric could be "% reduction in CIs in error each month" – you need the number actually in error in order to determine the % of reduction over the previous month's # of CIs in error.

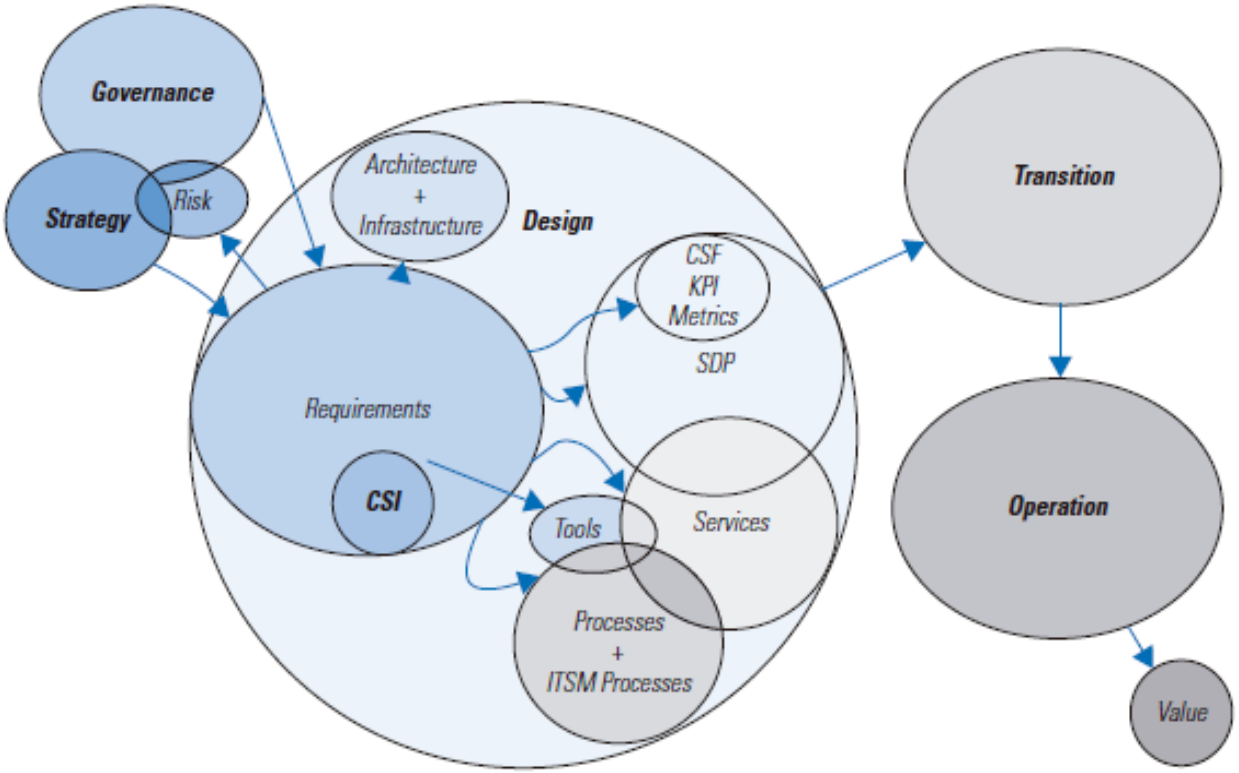
Characteristics of good Metrics



Creating Metrics with Nagios XI?

Service Design With Nagios XI

ITIL Service Design With Nagios XI



ITIL Service Design With Nagios XI

Service Groups

Logged in as: nagiosadmin Logout

Pages: 1 2 3 »

Check All Search Search Clear

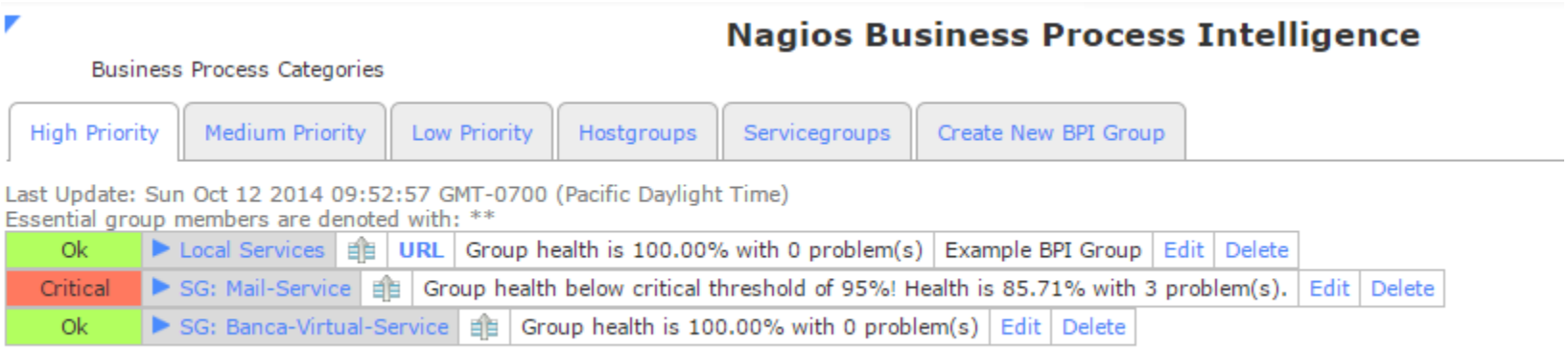
Displaying 1-15 of 41 results

Servicegroup Name	Alias	Active	Actions	ID
Administration-Services	Administracion	Yes		1
all_emc_services	All EMC SAN Services	Yes		2
Alternate -Site-Services	Sitio Alterno	Yes		3
Aseguradora-Services	Servicios de Aseguradora	Yes		4
Backup-Services	Servicio de Respaldos	Yes		5
Banca-Virtual-Service	Servicios de Banca Virtual	Yes		6
Bovedas	Bovedas	Yes		7
Cartera-Service	Servicio de Cartera	Yes		8
Chat-Services	Servicio de Chat	Yes		9
Cobis-Service	Servicios de Cobis	Yes		10
Cobros-Service	Servicio de Cobros	Yes		11
Compensacion-Service	Servicios de Compensacion	Yes		12
Credits-Service	Creditos	Yes		13
DBA-Services	DBA	Yes		14
Desktop-Service	Escritorio	Yes		15

Objective: The objective of ITIL Service Design is to design new IT services. The scope of Service Design includes the design of new services, as well as changes and improvements to existing ones.

Lets start with Processes: ITIL Service Design inside Nagios

Service Design identifies service requirements to clasify a critic levels of the group service of the company



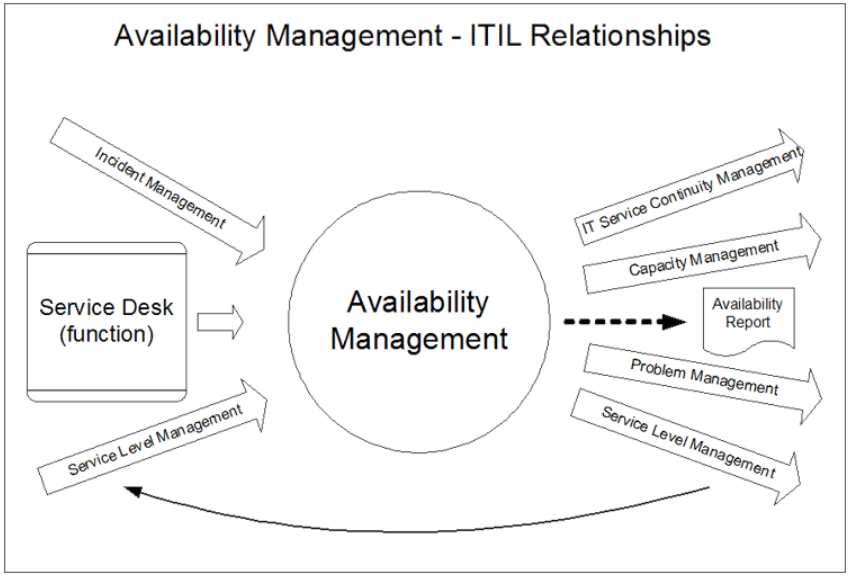
Design Coordination

Process Objective: To coordinate all service design activities, processes and resources. Design coordination ensures the consistent and effective design of new or changed IT services, service management information systems, architectures, technology, processes, information and metrics.

KPI Availability Management Component for Nagios XI

Our Target Availability Management

- Process Objective: To define, analyze, plan, measure and improve all aspects of the availability of IT services. Availability Management is responsible for ensuring that all IT infrastructure, processes, tools, roles etc. are appropriate for the agreed availability targets.



Our Target Availability Management

ITIL KPIs Availability Management

Key Performance Indicator (KPI)	Definition
Service Availability	▪ Availability of IT Services relative to the availability agreed in SLAs and OLAs
Number of Service Interruptions	▪ Number of service interruptions
Duration of Service Interruptions	▪ Average duration of service interruptions
Availability Monitoring	▪ Percentage of services and infrastructure components under availability monitoring
Availability Measures	▪ Number of implemented measures with the objective of increasing availability

KPIs in 'ITIL Availability management'

Availability (excluding planned downtime)

Servicegroup Availability Report
Last Updated: Sun Oct 12 10:58:51 CST 2014
Nagios® Core™ 4.0.7 - www.nagios.org
Logged in as *nagiosadmin*

Servicegroup 'Administration-Services'

10-05-2014 10:58:51 to 10-12-2014 10:58:51
Duration: 7d 0h 0m 0s

First assumed host state: Unspecified
First assumed service state: Unspecified
Report period: Last 7 Days
Backtracked archives: 4
Update

[Availability report completed in 0 min 0 sec]

Servicegroup 'Administration-Services' Host State Breakdowns:

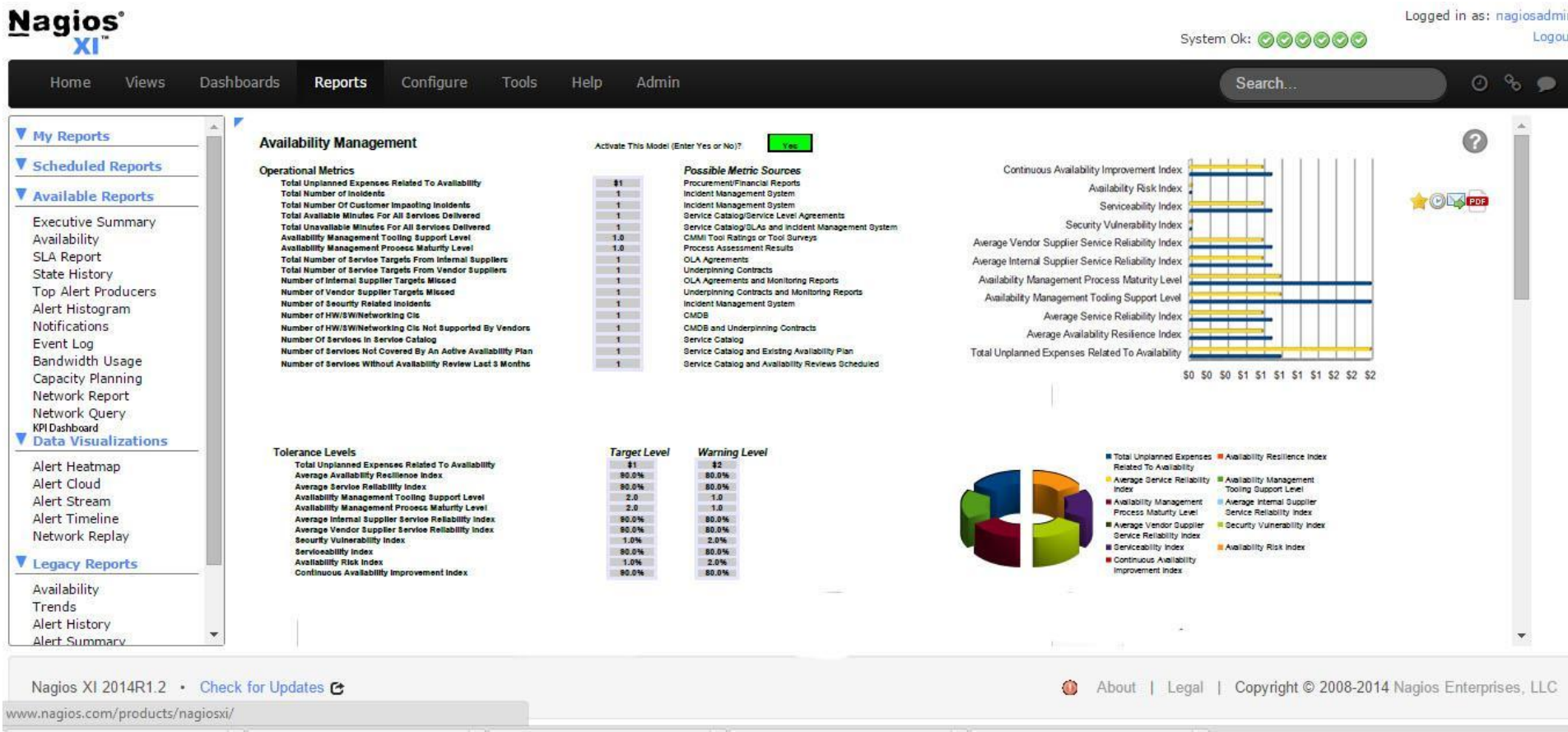
Host	% Time Up	% Time Down	% Time Unreachable	% Time Undetermined
vsr-cts	77.965% (100.000%)	0.000% (0.000%)	0.000% (0.000%)	22.035%
Average	77.965% (100.000%)	0.000% (0.000%)	0.000% (0.000%)	22.035%

Servicegroup 'Administration-Services' Service State Breakdowns:

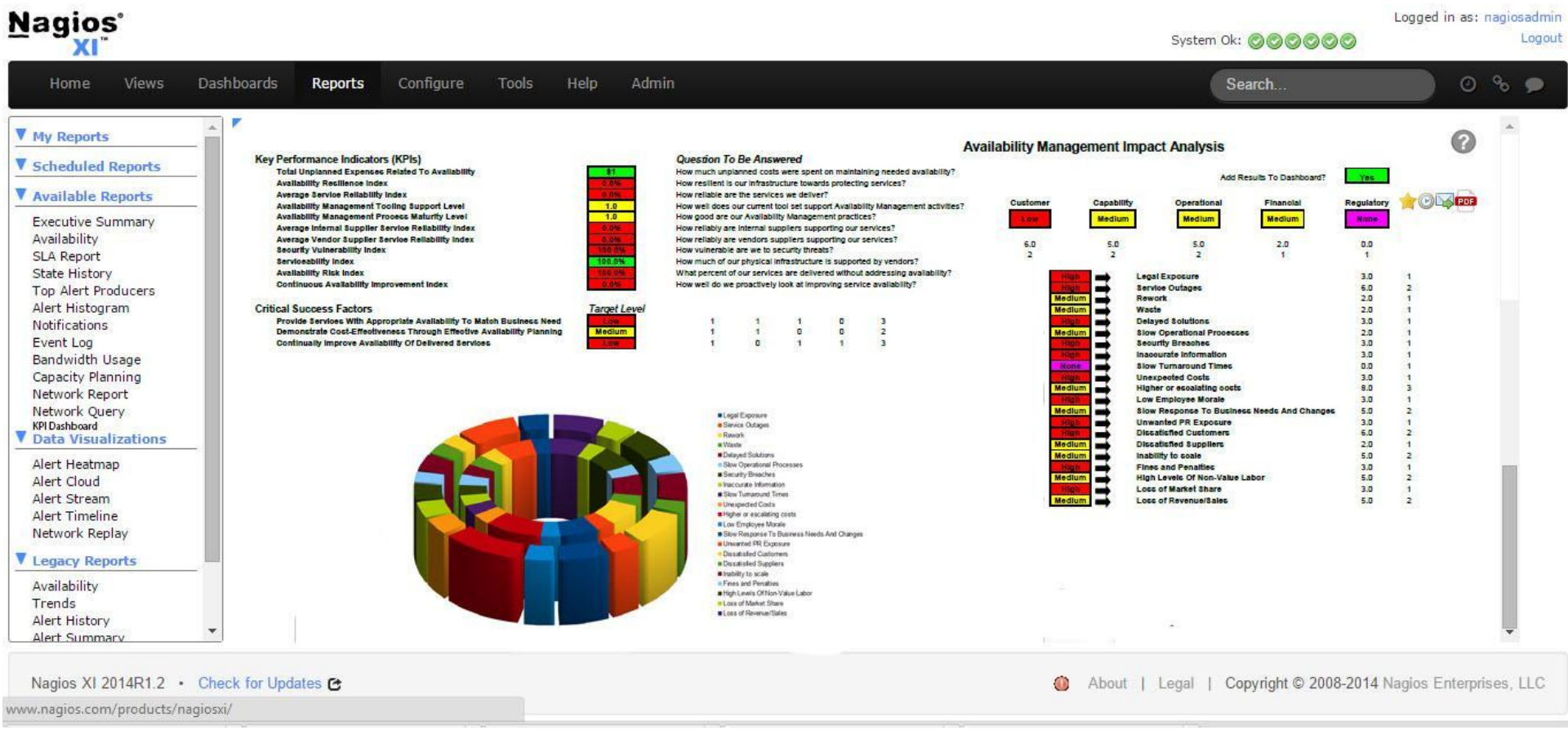
Host	Service	% Time OK	% Time Warning	% Time Unknown	% Time Critical	% Time Undetermined
vsr-cts	CPU Usage	56.704% (71.381%)	0.000% (0.000%)	0.000% (0.000%)	22.735% (28.619%)	20.561%
	Drive C: Disk Usage	56.688% (71.366%)	0.000% (0.000%)	0.000% (0.000%)	22.745% (28.634%)	20.566%
	Logon Errors	56.682% (71.363%)	0.000% (0.000%)	0.000% (0.000%)	22.746% (28.637%)	20.572%
	Memory Usage	56.680% (71.365%)	0.000% (0.000%)	0.000% (0.000%)	22.742% (28.635%)	20.578%
	Page File Usage	56.673% (71.361%)	0.000% (0.000%)	0.000% (0.000%)	22.744% (28.639%)	20.583%
	Ping	77.965% (100.000%)	0.000% (0.000%)	0.000% (0.000%)	0.000% (0.000%)	22.035%
	Server Work Queues	56.671% (71.369%)	0.000% (0.000%)	0.000% (0.000%)	22.734% (28.631%)	20.595%
	Uptime	56.670% (71.373%)	0.000% (0.000%)	0.000% (0.000%)	22.730% (28.627%)	20.601%
Average		59.342% (74.947%)	0.000% (0.000%)	0.000% (0.000%)	19.897% (25.053%)	20.761%

KPIs ‘Availability management Dashboard’

KPIs in 'ITIL Availability management'



KPIs in 'ITIL Availability management'



Nagios ‘ Availability management Report’

KPI Capacity Planing Component for Nagios XI

Our Target Capacity Planing

Objective: ITIL Capacity Management aims to ensure that the capacity of IT services and the IT infrastructure is able to deliver the agreed service level targets in a cost effective and timely manner. Capacity Management considers all resources required to deliver the IT service, and plans for short, medium and long term business requirements.

$$\text{Efficiency} = \frac{\text{Actual ouput}}{\text{Effective capacity}}$$

$$\text{Utilization} = \frac{\text{Actual output}}{\text{Design capacity}}$$

Our Target Capacity Planing

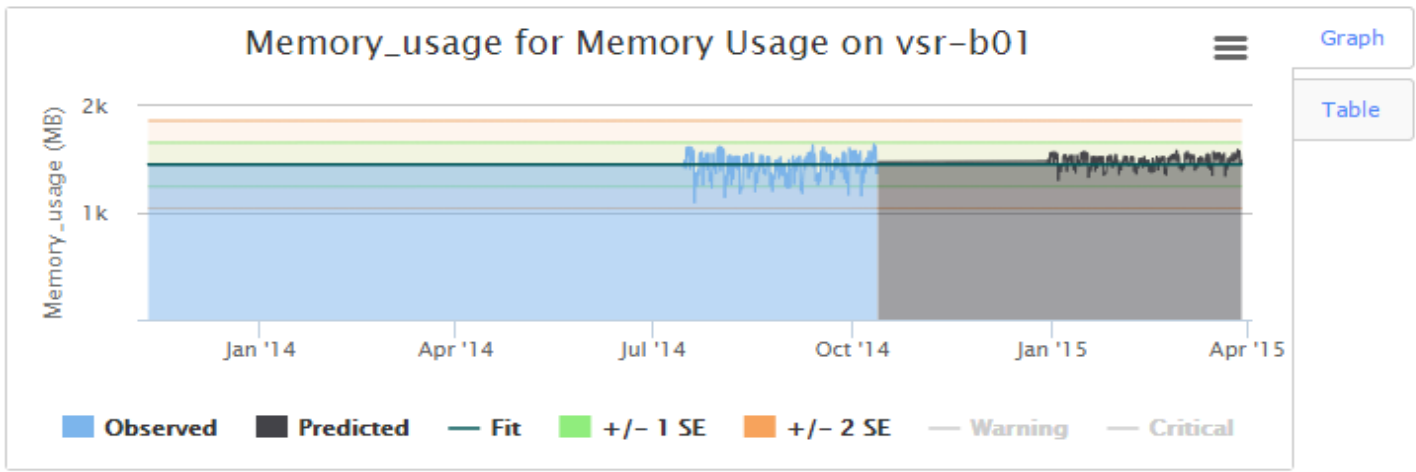
ITIL KPIs Capacity Management

Key Performance Indicator (KPI)	Definition
Incidents due to Capacity Shortages	▪ Number of incidents occurring because of insufficient service or component capacity
Exactness of Capacity Forecast	▪ Deviation of the predicted capacity development from actual course
Capacity Adjustments	▪ Number of adjustments to service and component capacities due to changing demand
Unplanned Capacity Adjustments	▪ Number of unplanned increases to service or component capacity as result of capacity bottlenecks
Resolution Time of Capacity Shortage	▪ Resolution time for identified capacity bottlenecks
Capacity Reserves	▪ Percentage of capacity reserves at times of normal and maximum demand
Percentage of Capacity Monitoring	▪ Percentage of services and infrastructure components under capacity monitoring

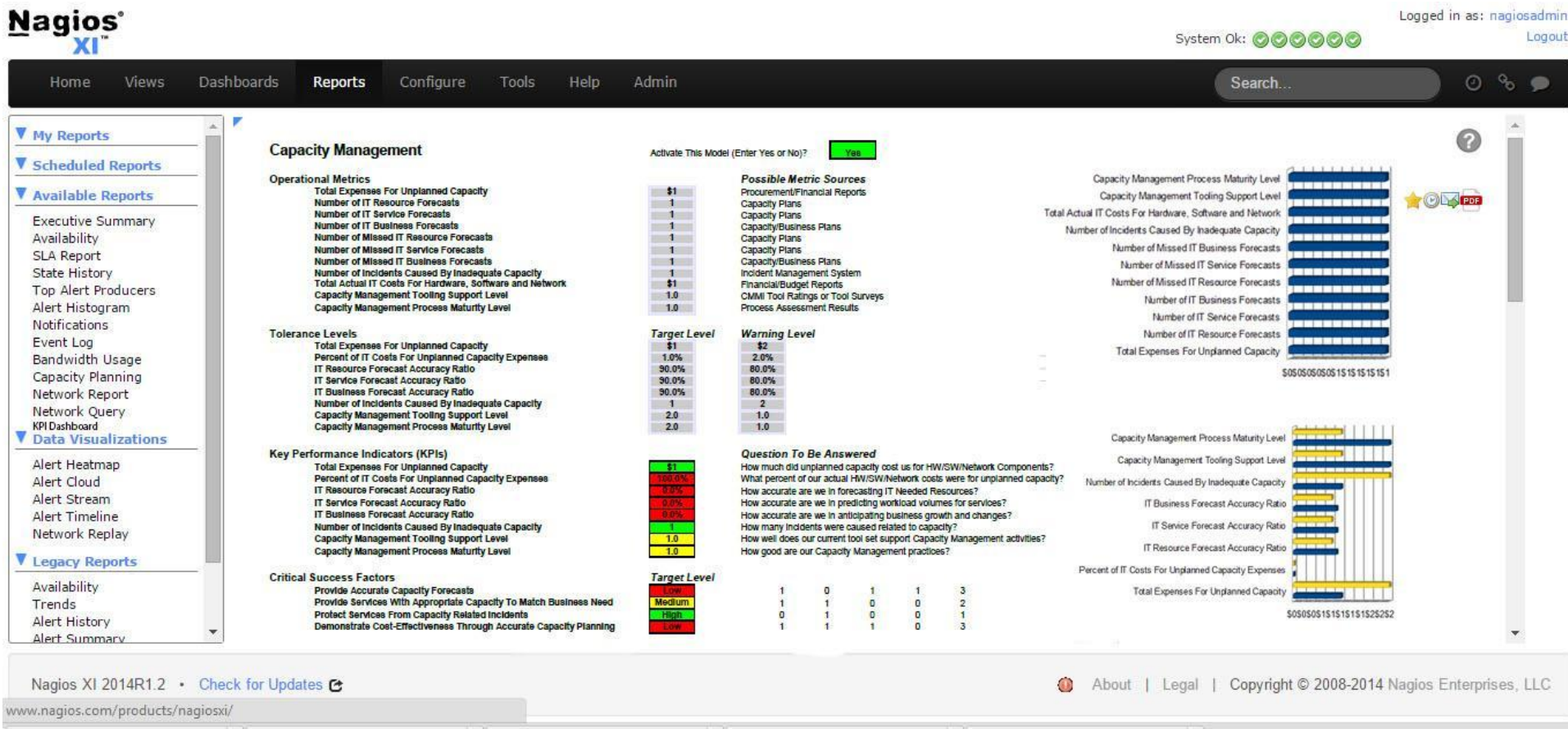
KPIs in 'ITIL Capacity management'

Capacity Planning

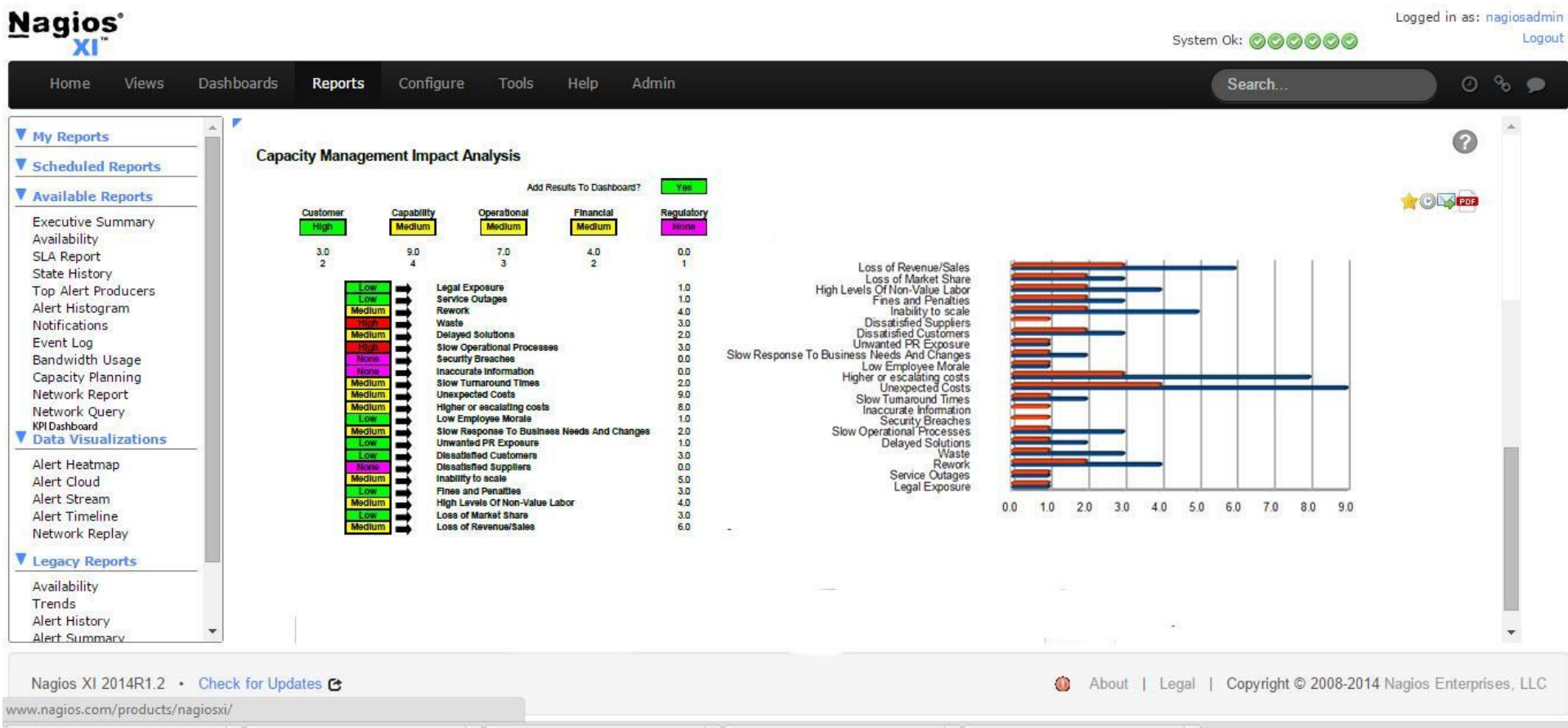
Report is showing the next **6 months**. Displaying 6-9 of 9 total matches for **vsr-b01**



KPIs in 'ITIL Capacity management'

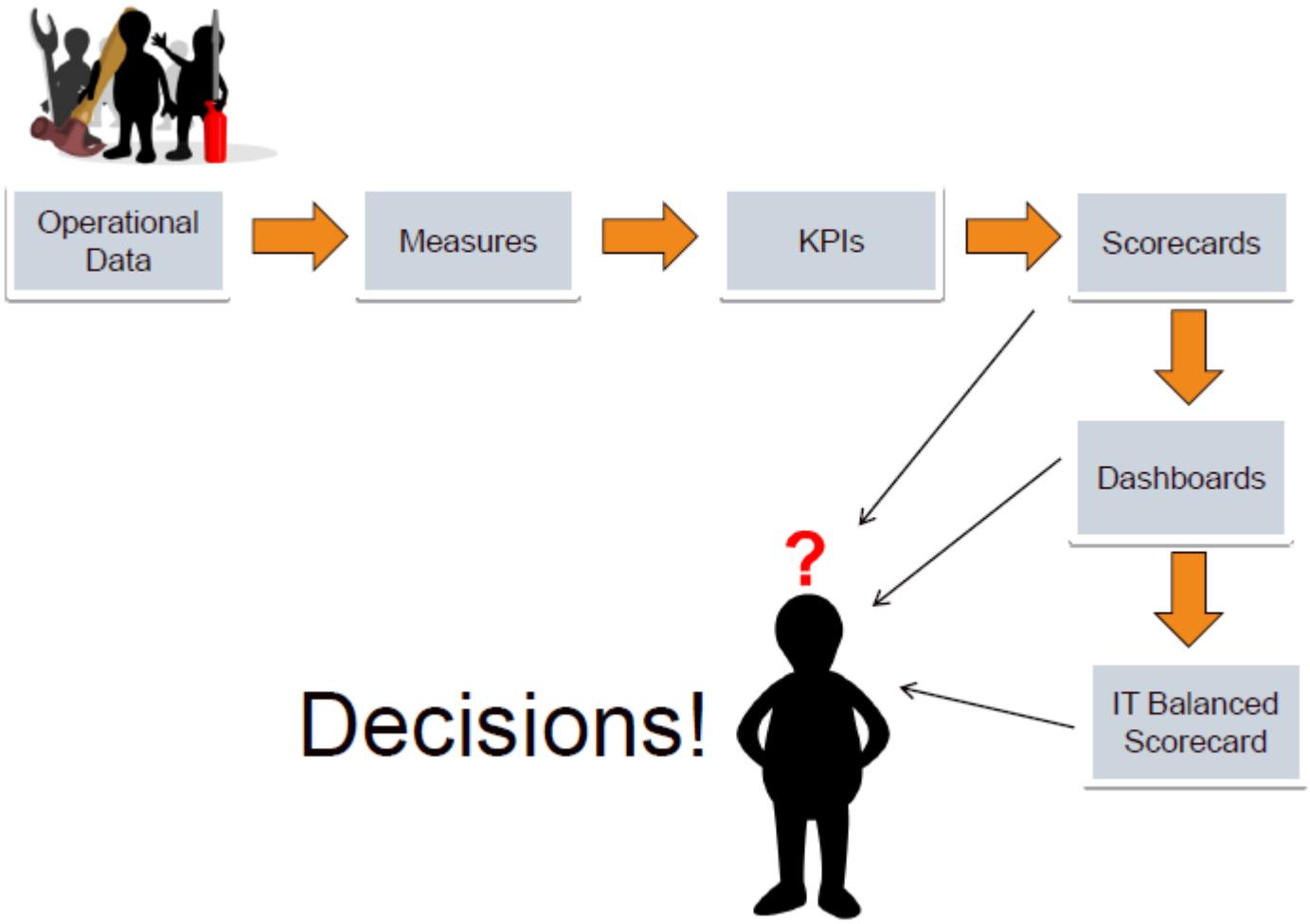


KPIs in ‘ITIL Capacity management’



KPIs in ‘ Capacity management Report’

From Measures to decision



Conclusions

- Metrics need not be viewed as an arcane dark art. Instead, the use of KPIs should be grounded in measuring the progress towards, and protection of, the objective(s) of a process. If the objective is clearly understood then the identification of metrics and how they should be constructed become much more apparent. In addition, it helps to bear in mind where the processes are at in terms of adoption in the organization and the behavior that the metric may drive.
- Understand what stakeholders need and tailor metrics and reports accordingly. It is far better to start focused and evolve KPIs and reporting to stay relevant and truly help stakeholders with their management decisions. Hopefully this document has given you some ideas to discuss in your teams and improve the value that metrics bring


ANY
QUESTIONS
?

The End

Jorge Higueros

jorge.higueros@consulmatic.com

Nagios® WORLD CONFERENCE 2014