

Service Level Management With Apdex

**GACMG and SCMG Meetings
April 22 and 23, 2009**

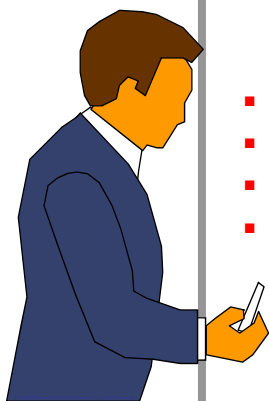


*Voice, Video and Data
Application Performance Experts*

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Outline



- **Apdex Overview**
- **Apdex Parameters**
- **Apdex in Service Level Management**
- **Apdex SLM Case Studies**

Apdex Defined

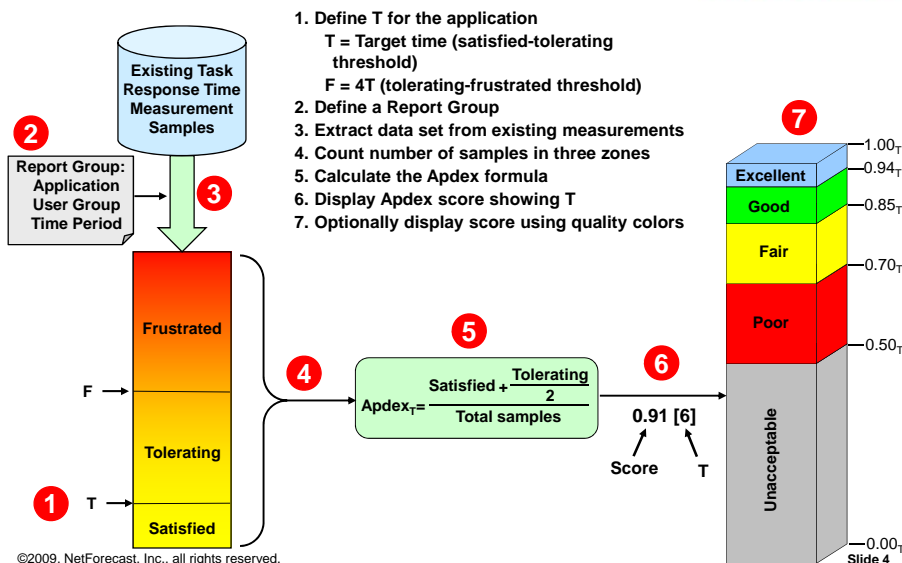


- Apdex is a numerical measure of user satisfaction with the performance of enterprise applications
- It defines a method that converts many measurements into one number
 - Uniform 0-1 scale
 - 0 = no users satisfied
 - 1 = all users satisfied
- Standardized method that is a comparable metric across
 - Applications,
 - Measurement approaches, and
 - Enterprises

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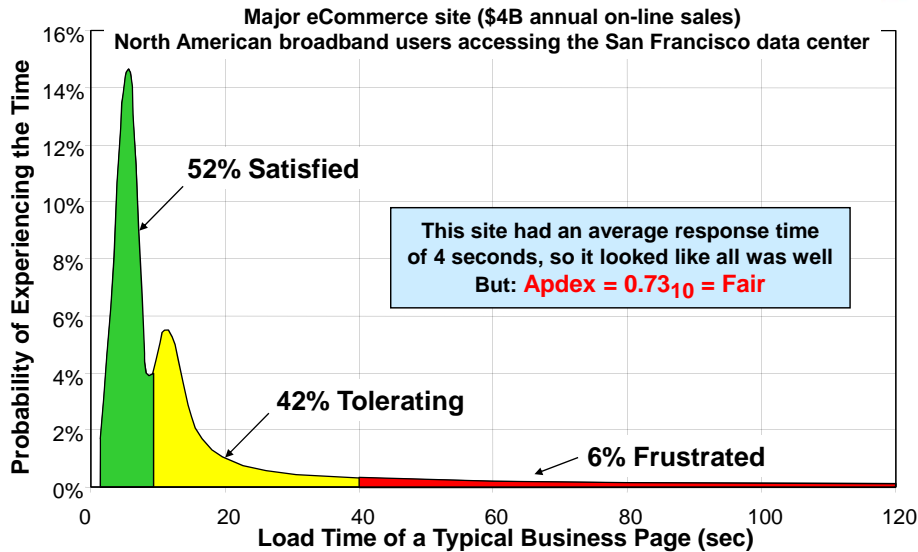
How Apdex Works



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Case Study: B-to-B Commerce Website



Where Apdex is Applied



The Apdex Alliance wants to make all of the green cells viable
The Alliance is defining specification extensions
The Alliance is defining intermodal guidelines

	Desktop	WAN (private or Internet)	Data Center Edge	Web Server	App Server	Database Server
Task	X	X	X	X		
Turn		X	X	X	X	
Packet or DB call		X	X			X

Apdex is already being applied in each cell with an X

The Apdex Alliance



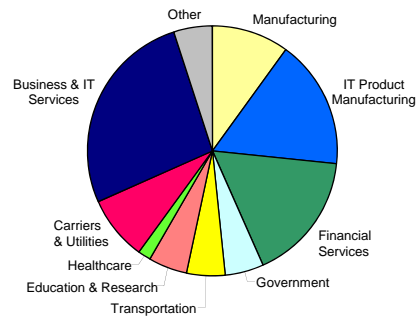
Contributing Members

Pay annual dues
Extend the standard



Supporting Members

Free
Individual interested in applying
Apdex within their organization
Currently more than **800 members**



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Please Join the Alliance



Fill out the green card to become a Supporting Member (free)
You will be added to our newsletter mailing list (4 mailings per year)
You will be invited to participate on the blog and bulletin board (opt in)

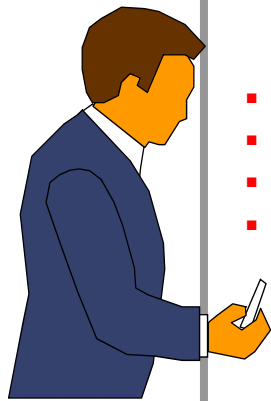
Name:
Title:
Company:
Email Address:

please print clearly

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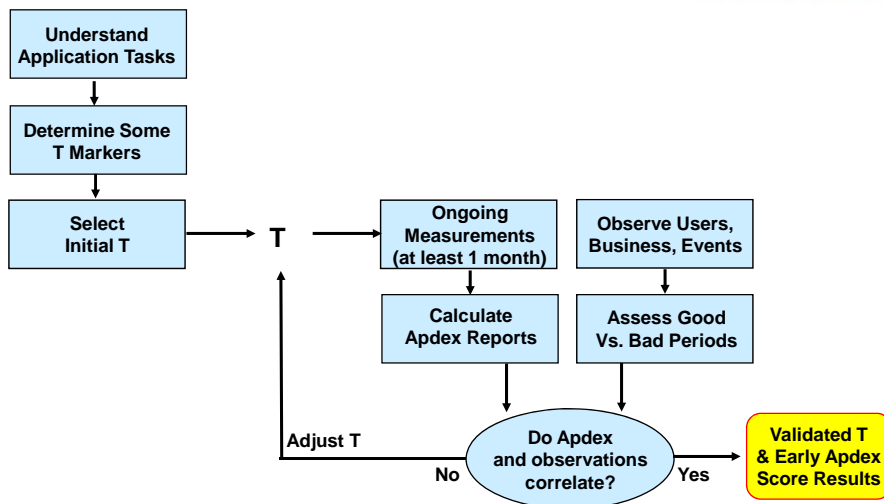
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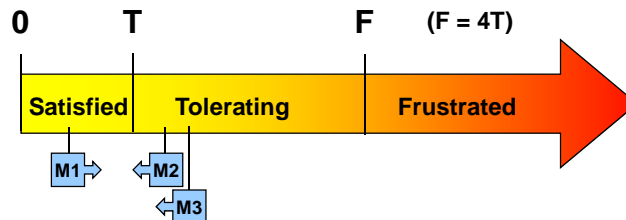
Process for Setting the Apdex T



What is a T Marker?



Performance Zone Boundaries



- A T Marker (TM) is an indicator of the user satisfied-tolerating boundary for an application
- Some T Markers have a greater than or less than property
- Multiple T Markers can be used to converge on an initial T value

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T Marker Alternatives



1. Default Value
2. Empirical Data
3. User Behavior Model
4. Outside References
5. Observing the User
6. Controlled Performance Experiment
7. Best Time Multiple
8. Frustration Indicator
9. Interview Stakeholders
10. Mathematical Inflection Point

See the annual
Apdex Symposium
presentations at
Apdex.org
to learn more

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Case Study: Initial T Selection Process



- **Interview Stakeholders (#9)**
 - Ahead of workshop meeting
 - Performed an on-line survey
 - Data center staff, network staff, business managers
- **Mathematical Inflection Point (#10)**
 - Ahead of workshop meeting
 - Measure the key tasks using a synthetic agent service
 - Gather data for two weeks
 - Perform the inflection point analysis on each web service
- **User Behavior Model (#3)**
 - During workshop put posters on the walls with scales
 - Number of elements viewed
 - Task repetitiveness
 - Have attendees vote on each scale for each web service
 - Use colored dots

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Case Study: Initial Ts Selection



	T Markers From Three Sources			Initial T Selection	
	9 Survey Targets	10 Measured (T Inflection)	3 Behavior Model Voting	T Markers Average	Consensus Initial Ts
Circle # indicates setting T method					
Home	6.5	4.4	8	6.3	5
Search	2.7	1.3	2	2.0	2
My Page	5.8	2.9	6	4.9	5
Shopping	6.3	6.7	16	9.7	7
Community	12.4	10.4	9	10.6	9

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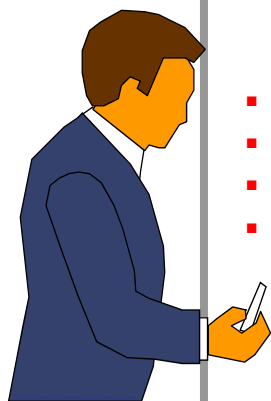
Different T Values at Each Tier



Typical Apdex T in seconds

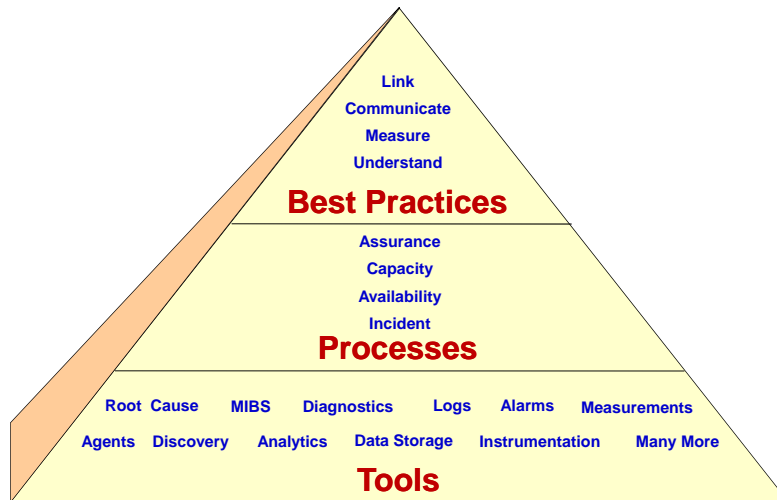
	Desktop	WAN (private or Internet)	Data Center Edge	Web Server	App Server	Database Server
Task	2 – 10	2 – 10				
Turn		0.2 – 1.0	0.1 – 0.8	0.1 – 0.8	0.1 – 0.8	
Packet or DB call		0.1 – 0.3				0.01 - 0.05

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Performance Management Layers



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Service Level Management as Defined by ITIL



- **SLR – Service Level Requirement**
 - What the business needs
- **SLO – Service Level Objective**
 - Business need in IT terms
- **SLT – Service Level Target**
 - Goal in measurements of the IT terms
- **SLA – Service Level Agreement**
 - Delivery terms and conditions added



Different types of reports are applied along this spectrum

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Apdex Mapped Into ITIL SLM



- **SLR – Service Level Requirement**
 - Apdex methodology defines 10+ ways to map requirements
- **SLO – Service Level Objective**
 - This is Apdex T
- **SLT – Service Level Target**
 - This is the Apdex score that you should be above
- **SLA – Service Level Agreement**
 - This is the window of time when the above matters

Apdex T is not the SLA!

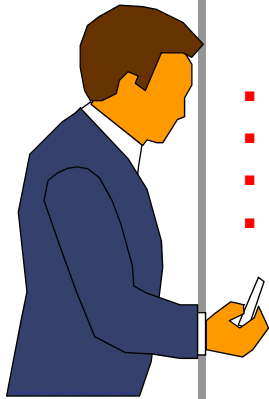
Apdex in Each Part of ITIL SLM



	KPI	Report
SLR	From 10-ways to define T	Initial T agreement
SLO	Apdex T	Formal T agreement
SLT	Apdex Score Goal	Report of Apdex scores
SLA	Percent Score Goal is met	Apdex-based SLA report

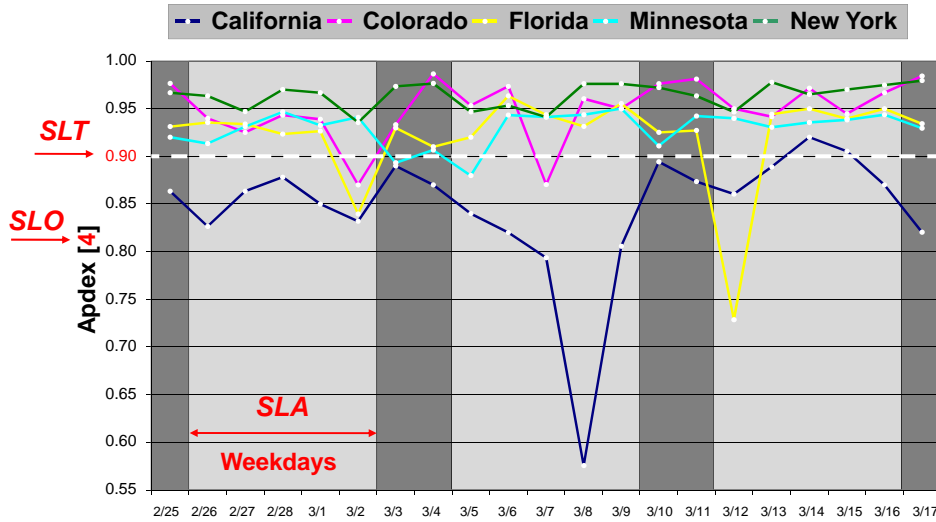
Apdex is listed in the KPI Library
See <http://kpilibrary.com/>

Outline

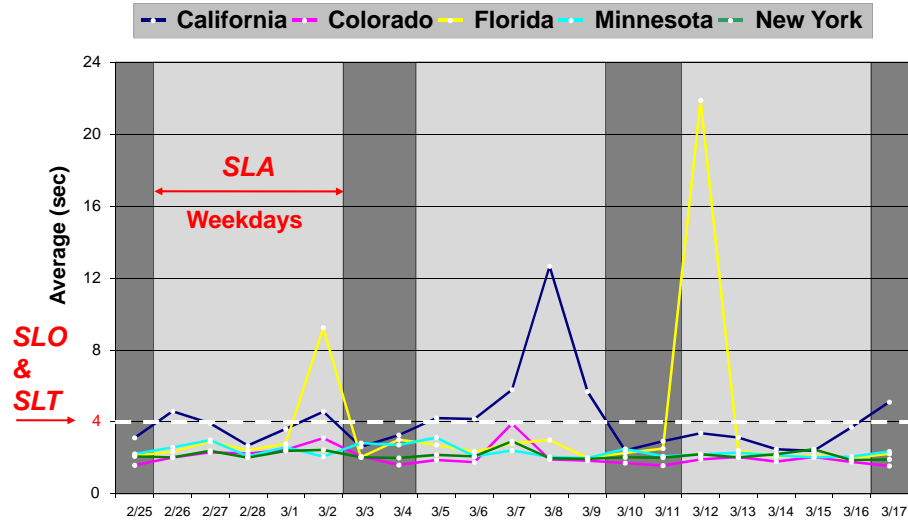


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Case Study: Web Service Apdex Report



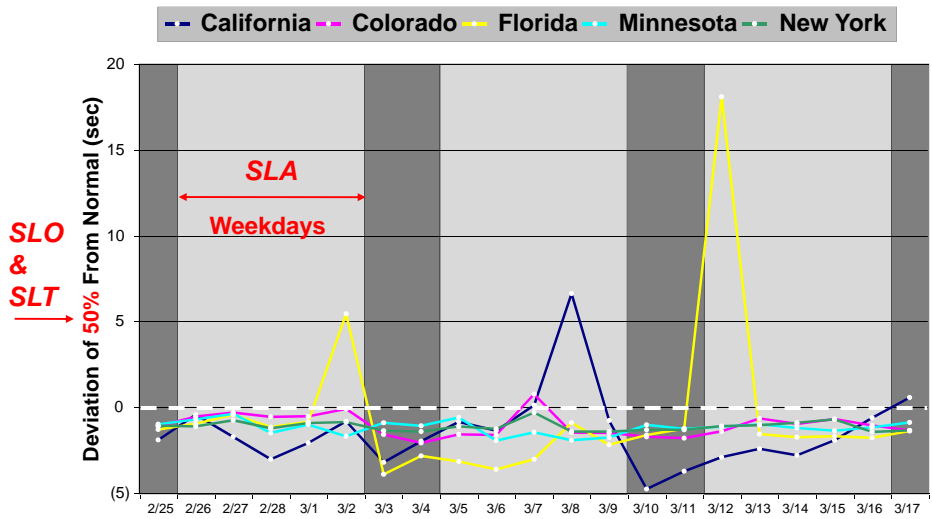
Not Using Apex: Average With Threshold



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Not Using Apex: Deviation From Normal



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Very Different SLA Compliance Reports



SLA compliance report is the percentage of days that the SLA was met
(5 states, 5 days per week, 3 weeks in the report = 75 state-days)

	Apdex	Averages	Deviation from Normal
SLO	= 4 sec	<= 4 sec	>= 50%
SLT	>= 0.9 Score	N/A	N/A
SLA	Weekdays	Weekdays	Weekdays
SLA Compliance	76%	88%	93%

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Case Study: e-Government Portal



Apdex Report Group

Begin Date Time:	9/1/2008 12:00 AM	End Date Time:	10/1/2008 12:00 AM	Interval:	Hourly
Server:	CACWAZ01.IIS 6.0	BusinessGroup:	BG-All		
URL:	.*	Target Threshold (sec):	5		

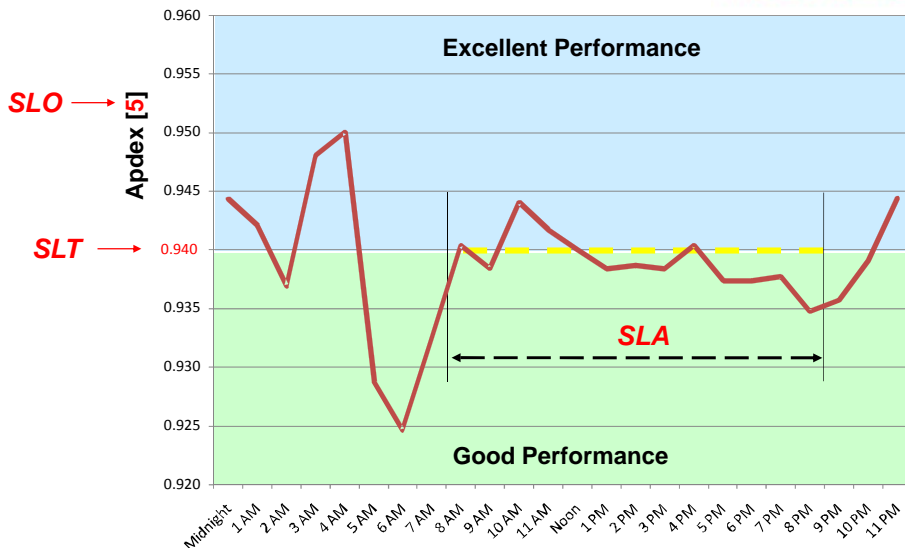
Apdex Report

Interval	Apdex	#Page Hits	RtAvg
Overall	0.94 [5]	544718	6.29
9/1/2008 12:00:00 AM	0.95 [5]	230	5.38
9/1/2008 1:00:00 AM	0.99 [5]	139	3.17
9/1/2008 2:00:00 AM	0.91 [5]*	90	6.11
9/1/2008 3:00:00 AM	0.85 [5]*	94	9.61
9/1/2008 4:00:00 AM	0.91 [5]*	61	9.14
9/1/2008 5:00:00 AM	0.95 [5]*	54	4.72
9/1/2008 6:00:00 AM	0.84 [5]*	32	19.57
9/1/2008 7:00:00 AM	0.94 [5]	264	10.70
9/1/2008 8:00:00 AM	0.95 [5]	321	6.11
9/1/2008 9:00:00 AM	0.94 [5]	604	6.93
9/1/2008 10:00:00 AM	0.94 [5]	671	7.31
9/1/2008 11:00:00 AM	0.94 [5]	442	6.16

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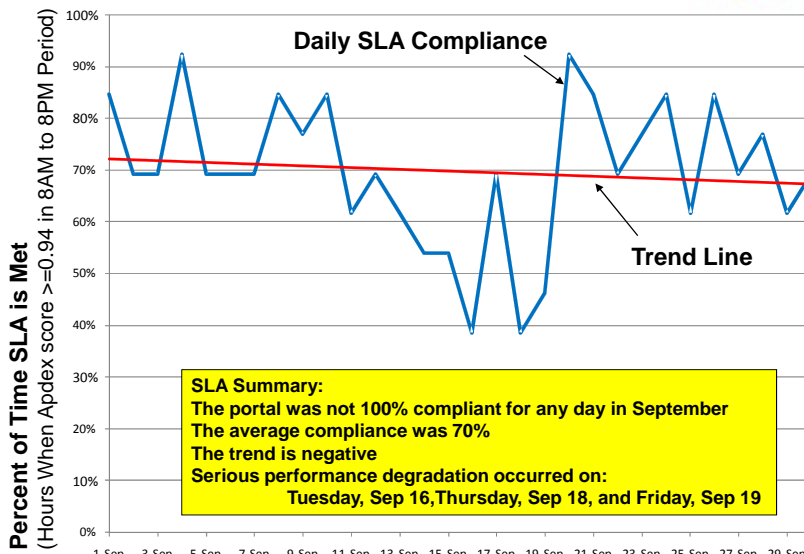
Government Portal Apdex SLA, a Typical Day in September 2008



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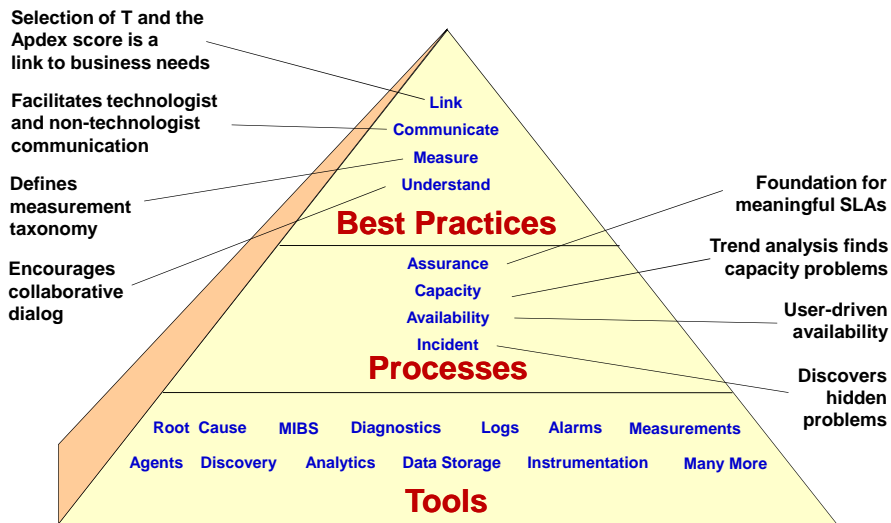
Government Portal SLA Compliance Report



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Apdex Helps Performance Management



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Thank You



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Free articles and reports on performance measurement, analysis, and management are available at www.netforecast.com

See www.apdex.org for more information on how to use Apdex