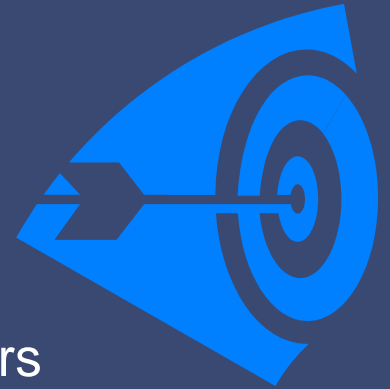


# Course: Business models and Public Private Partnership (PPP) for e- Governance Project

Day 2

Session 3: Service Level Management

# Agenda



- Introduction to Service Levels/Key Performance Indicators
- Introduction to Service Level Management Lifecycle
- Challenges in definition of SLA/KPIs
- Considerations in definition of SLAs/KPIs
- Illustrative SLAs/KPIs for e-Governance projects

# Understanding Service Levels/KPIs in e-Governance

'Services' in an e-Government Project (differentiating government services and third party services)

**Government**

Department enablement

1. Registration
2. Filing
3. Issuance
4. Registration
5. Payment

Government is responsible for 'Quality' of Government Services

**Services** and **Third parties**

1. Development of software
2. Implementation
3. Maintenance of infrastructure
4. Establishment of service centers
5. Establishment of etc.

& Third party service provider is responsible for 'Quality' of Systems/Technical services

# Understanding Service Levels/KPIs in e-Governance

Service levels or Key Performance Indicators support in measuring 'Quality' of Services....

## Government Services (Recap from GPR):

'Quality' attributes of government services include (illustrative list):

1. Time for service completion
2. Cost for service completion
3. Accuracy of service delivered
4. Completeness of service delivered
5. Transparency in service delivery...

## Services provided by third parties:

'Quality' attributes of technical systems and services include:

1. Completion of systems development in time, to the requirements, standards and cost...
2. 'Availability' of services online
3. 'Performance' of systems to deliver online services
4. 'Security' of online services.....

# Understanding Service Levels/KPIs in e-Governance

Improving the 'Quality' of services in e-Governance initiatives..

## Government Services:

'Quality' attributes of government services are improved through (illustrative):

1. Government Process Reengineering
2. Leveraging Information Technology
3. Privatisation/PPP (to leverage private sector strengths...)....

## Services provided by third parties:

High 'Quality' technical systems and services are delivered through:

1. Clear understanding of requirements
2. Adopting proven technology and standards
3. Employing skilled resources
4. Right project management approaches
5. Quality assurance processes...

# Understanding Service Levels/KPIs in e-Governance

Need for measuring the 'Quality' of services in e-Governance initiatives..

## Government Services:

'Quality' attributes of government services need to be measured for:

1. Understanding performance and perception of citizens
2. To assess the outcomes and impact of initiatives undertaken for improving quality
3. To understand the progress towards the defined targets....

## Services provided by third parties:

'Quality' attributes of technical systems and services need to be measured for:

1. To ensure compliance with defined performance levels – which in turn have impact on quality attributes of govt services
2. Proactive identification and resolution of technical issues
3. To ensure return on investment....

## New trends in e-Governance includes leveraging third party service providers in delivering government services...

1. E.g. leveraging service providers for delivering government services (CSCs, eSeva, MCA21...)

This requires measuring performance of service providers on both 'process' and 'systems/technical' measures

# Service Level Agreements – Some Definitions

- **Service:** A Service is an outcome of an request and it provides an economic, social or personal benefit or right to the requestor or results in efficiency gains to an organization.
- **Service Level:** A Service Level defines the quality and quantity of service, in a measurable and objective way.
- **Service Level Objective (SLO):** is the set of purposes or objectives sought to be achieved through defining and prescribing the Service Levels for an initiative or organization.
- **Service Level Agreement (SLA):** is an agreement between the Service Provider and the Service Seeker that defines the Service Levels, the terms and conditions for enforcing the Service Levels and the remedies in case the Service Levels are not fulfilled.
- **Service Level Management (SLM):** is an institutional arrangement that ensures effective implementation of the Service Levels and enforcement of the SLA

# Key Challenges in SLA Definition & Management

- **Minimal Understanding & awareness on Service Level Management**
  - Type of SLAs, Relevance to Project objectives, Measurement process etc...
- **Non-alignment with business goals**
  - Criticality of server uptime vs service uptime
- **Non-alignment with project benefits**
  - Is it a service delivery project or an IT Infrastructure project?
- **Lack of impact assessment on business goals**
  - Do we understand the business impact between 96% (12 hrs) and 99.99 % (1 hr) SLA
- **Are we listening to the customers???**
  - User perception SLAs???
  - 99% system uptime with unsatisfied customers



# Key Challenges in SLA Definition & Management

- **Lack of measurability**
  - 99% of Application uptime?????
  - Ambiguity in measurement process
- **Lack of understanding on the cost implications of SLA definition**
  - Achieving 99% uptime requires significant redundancy in infrastructure & resources
- **Redundancy in infrastructure & resources for SLA Management across projects (3 infrastructure projects, 10+ State MMPs....)**
  - SLA Monitoring solution for monitoring & reporting SLAs
  - Resources for measuring and certifying SLAs....
- **Who does SLA Monitoring?**
  - In several projects, SLA monitoring systems are implemented and managed by the same agency which provides services???

# Key Challenges in SLA Definition & Management

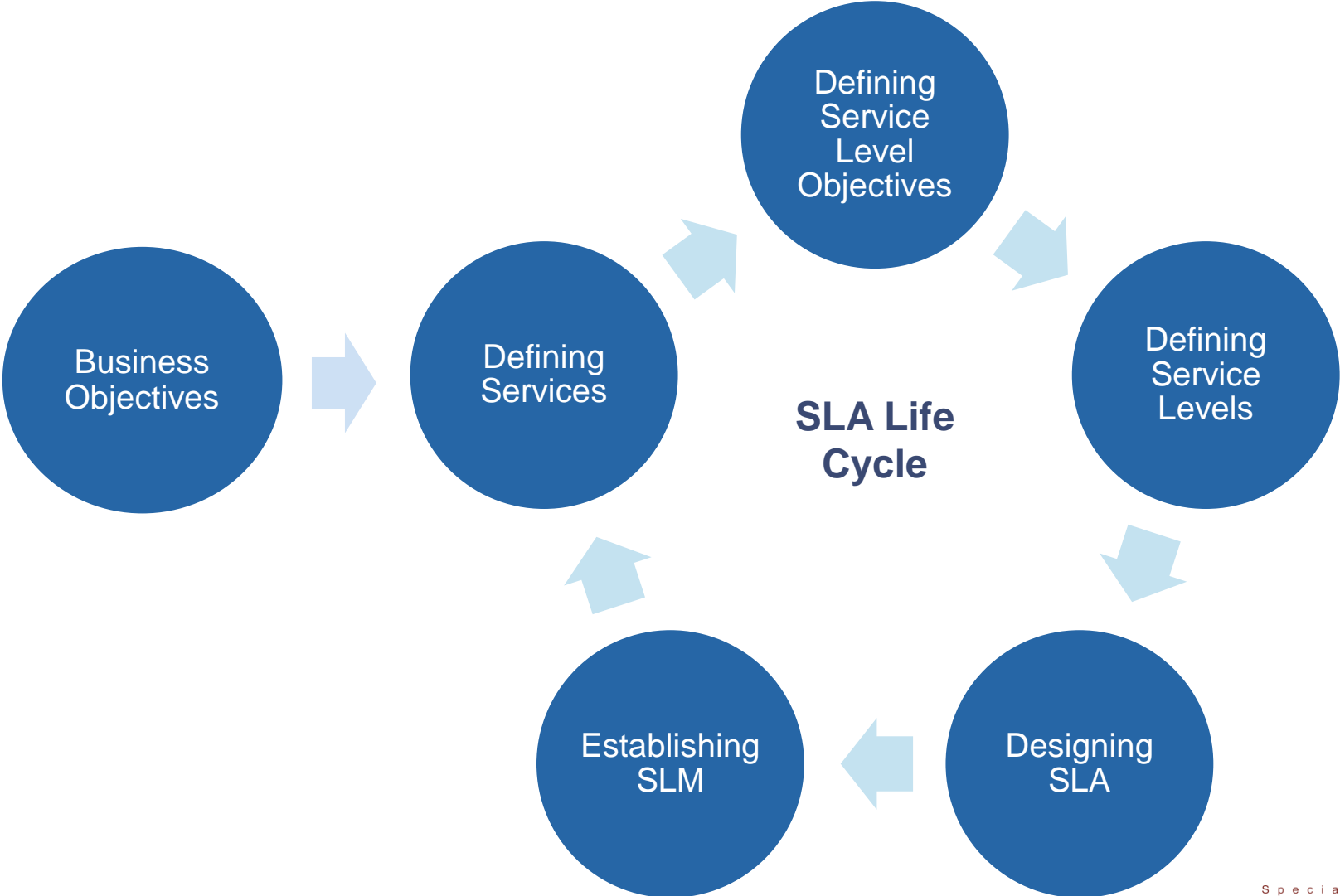
- **Incentivizing performance**
  - Not only punitive measures
- **Validity of SLAs through the project period**
  - Several SLAs become invalid during the contract period

# Some Considerations for SLAs for e-Gov Projects

The Service Levels/KPIs defined for the project should fulfill the following design criteria:

- Should be based on the business objectives and goals proposed to be addressed through the project
- Should be measurable and enforceable
- Clear accountability and responsibility for SLAs (based on the stakeholders and their allocated responsibilities)
  - IT service provider can not be responsible for 'government services quality' if his scope is only limited to IT systems design and development...
- Should be inline with the phase of project development (SLAs during project development are different than the SLAs post project implementation)
- SLA's to be time bound....

# SLA Life Cycle



# Defining Services (recap)

'Services' in an e-Government Project (differentiating government services and third party services)

## Government Services:

Department Services identified for 'e' enablement .e.g.

1. Registration of companies
2. Filing of returns
3. Issuing passports
4. Registration of birth and death
5. Payment of taxes and duties.....

## Services provided by third parties

1. Development of application software
2. Implementation of IT infrastructure
3. Maintenance of systems and infrastructure
4. Establishment of call centre
5. Establishment of service delivery centers etc...

# Service Level Objectives

- Service Level Objective is the value that the management intends to give to various sets of stakeholders, and the value it intends to derive from the investment in Technology and Infrastructure
- Illustrative set of SLOs given in table below:

Stakeholder Group	Value Proposition (SLO)
<b>External:</b> Customers, Suppliers, Financiers	Efficiency, Convenience, Reliability, Responsiveness, Cost Effectiveness
<b>Internal:</b> Employees, Management, Auditors	Usability, Accountability, Traceability, Effectiveness
Investment Area	Value to be derived (SLO)
<b>Technology &amp; Process:</b> Standards, Architecture, BPR	Interoperability, Cost Effectiveness, Transformation, Simplicity
<b>Infrastructure &amp; People areas:</b> Data Centre, DR Site, Change Management	Performance, Security, Availability, Efficiency, Ownership

# Defining Service Levels

- Service Levels need to be defined for services proposed to be covered under the e-governance project:
- Service Levels defined for those services to be delivered by the vendor forms the basis of the Service Level Agreements
- The components of the Service Level Definition are:
  - **Service Level Parameters:** measurable attributes of the service, which will provide a reliable and objective estimate of the quality and quantity of service
  - **Service Level Metrics:** A set of norms prescribed against each service level parameters to provide baseline performance expected from Vendor
  - **Service Level Measurement Method:** Precise, reliable and consistent method by which the service level parameter can be measured
  - **Service Level Enforcement Method:** Method by which the service level agreement can be enforced (deduction from payments, penalties etc)

# Sample SLA definition – G2B Service Delivery

Service Metrics Parameters	Baseline		Lower performance		Breach	Measurement method
	Metric	Credit	Metric	Credit	Metric	
Service Related – Citizen Facing						
1. Average wait-period at Service Centre (Peak dates , Peak hours)	< 15 min	15	min	10	>30 min	Time between issuance of the token to the customer at the kiosk on arrival and initiation of registration process in the system by the CSC executive (as measured by SLA Monitoring system)
2. Average wait-period at Service Centre (Peak dates, Non-Peak hours)	< 10 min	12	min	8	> 20 min	
3. Average wait-period at Service Centre (Non-Peak dates , Peak hours)	< 5 min	9	5-10 min	6	>10 min	
4. Average wait-period at Service Centre (Non-Peak dates , Non- Peak hours)	No waiting	7	0 – 3 min	5		

SLA Parameter

SLA Metric

SLA Measurement

SLA Enforcement



# Sample SLA definition – 2

Service Metrics Parameters	Baseline		Lower performance		Breach		Measurement method
	Metric	Credit	Metric	Credit	Metric	Credit	
Technology – Performance Related							
Capacity of the Application Server	10000 service transactions per hour	6	No tolerance for lower performance. Zero credit will be given for performance below baseline		<6000	-6	Measurements from the Enterprise SLA Monitoring System at the State Data Centre
Uptime of Servers	> 95%	12			<96%	-8	
Uptime of Internet services	>98%	4			>95%	-4	
Time to restore Data Centre from failure	<1 hour	5			>3 hours	-5	

# Criteria for defining Service Level Parameters

- The set of Service Level Parameters should be defined to fulfill the following criteria:
  - Alignment with Service Level Objectives
  - Coverage of complete range of services under the project
  - Number of SLPs in each service area and their weightage should correspond to the priority of the service area
  - The number of SLPs should not be excessively large, affecting the ease of SLA monitoring
  - If required, SLPs may be defined for different phases of the project, based on the priorities of each phase (e.g. System Development phase, Pilot phase, Operations and Maintenance phase)

# Indicative list of SLP categories

- SLPs may be defined to capture the quality of service delivery in any of the broad service categories:
  - Design and development of e-Government Projects
  - Speed of Delivery of Services
  - Waiting times of customers
  - Maintenance of IT assets created for a project
  - Maintenance of non-IT assets created for a project
  - User experience
  - User convenience
  - Responsiveness of systems
  - Responsiveness of service delivery agents
  - Adherence to security standards
  - Response to security incidents
  - Defect-free / error-free service

# Definition of Service Level Metrics

- The following performance metrics (range of values) to be defined for each service level parameter:
  - Baseline: Acceptable level of service by the vendor
  - Lower: Degraded level of service, for which vendor may be penalized
  - Higher (optional): Higher level of service for which vendor may be incentivized
  - Breach: Highly degraded level of service / material breach, which may invite termination contract
- Service level metrics should be realistic without compromising on Service Level Objectives
  - E.g. Baseline metric for portal load time can be anywhere between 5-10 seconds (which does not adversely affect the SLO of user experience). Setting a portal load time of 2 seconds is unrealistic

# Measurement of Service Levels

- “If you can’t measure it, you can’t manage it !”
- Tools designed for measuring SLA metric should be precise, reliable, accurate, consistent and trustworthy
- Automated measurement by SLA Management System should be used wherever possible
- The conditions under which measurement is taken should be defined precisely:
  - e.g. Measurement of portal page loading: measured over a broadband connection of 128 Kbps
- Some SLAs (e.g. user experience) may require periodic surveys and feedback from end users. The methodology for this should be precisely defined in the Contract so as to eliminate later ambiguities and disputes

# Service Level Enforcement

- SLA can be most effectively enforced by linking the payments to the Service Provider to the degree of compliance with the SLA
- Deduction Method:
  - Vendor gets 100% payments (monthly / quarterly / milestone) for full compliance to the SLA
  - For lower performance from SLA, specified percentage is deducted. Higher performance may be incentivized by bonus payments
- Addition Method:
  - A percentage of the payment (e.g. 40%) to the SP is made dependant on the fulfillment of Service Level Matrix
  - All SLPs are assigned credits for baseline, lower, higher and breach metric. Credits will depend on the priority of the SLP
  - Scores prescribed for baseline performance will add up to 100%

# Deduction Method – Illustrative example

Sl. no:	SLA Parameter	Metric		
		Baseline	Lower	Breach
1	Time taken for setting up Deployment Infrastructure	Up to 15 days from Letter of Intent	15-30 days (Penalty of Rs. 2000 per day)	Above 30 days (Termination of contract)
2	Delay in completion of milestone	1 week delay	1-2 week delay (Penalty of 5% of milestone payment for 1 week, additional 1% penalty for each additional day)	Above 2 weeks (2% additional penalty of each additional day, termination of contract)

# Addition Method – Illustrative example

Service Metrics Parameters	Baseline		Lower performance		Breach	
	Metric	Credit	Metric	Credit	Metric	Credit
Service Related – Citizen Facing						
1. Average wait-period at Service Centre (Peak dates , Peak hours)	<15 min	12	15-25 min	<b>6</b>	>30 min	0
2. Average wait-period at Service Centre (Peak dates, Non-Peak hours)	< 10 min	8	10 -15 min	<b>4</b>	>20 min	0
3. Average wait-period at Service Centre (Non-Peak dates , Peak hours)	< 5 min	5	5-10 min	<b>2</b>	>10 min	0
4. Average wait-period at Service Centre (Non-Peak dates , Non-Peak hours)	No waiting	5	0 – 3 min	2	> 3 min	0
<b>Total Credit</b>		<b>30</b>		<b>14</b>		<b>0</b>

Sample calculation: If bidder meets baseline in SLP 1 & 3, lower in SLP 2 and breach in SLP 3, payout will be  $12+4+5+0 = 21\%$ . Hence  $21\%+70\%$  (fixed part of payout) will be paid to the vendor



# End of Session