The role of service level agreements in IT service delivery

Kent D. Larson
Senior Consultant, Nolan, Norton & Co., Melbourne, Australia

Introduces the concept of service level agreements (SLAs) in IT service provision, especially in the case of outsourced service provision. Reports the experience of several consulting engagements and surveys to substantiate suggested frameworks and checklists. Discusses the reasons for exercising rigour around SLAs. Differentiates between SLAs negotiated for internal versus external service providers. Describes the structure of good service level agreements. Outlines the most important elements of measurement for monitoring service level performance. Concludes with the importance of SLAs to the management of commercial relationships in which services are provided.

Additional material taken from KPMG outsourcing specialists Deb Houser, Ian Law, Glen Linsley and Jim Murphy

Information Management & Computer Security
6/3 [1998] 128–132

[ISSN 0968-5227]

Background to service level agreements

Service level agreements (SLAs) have been around in one guise or another ever since there have been fee-for-service arrangements. The nature, completeness and enforceability of this agreement between service buyer and service provider are what vary.

Information technology (IT) services have been undergoing dramatic changes in the past decade. Price/performance ratios of technology, extreme cost pressures, rapid technological change and a scarcity of key technology skills have all put pressure on the providers of IT services to seek alternative modes of managing and providing IT services. An increasingly-popular option has created a whole new industry: outsourced IT service provision.

Because it is a relatively new way of providing and receiving IT services, the managers of outsourced IT servicing arrangements are still ascending a learning curve. The mechanics of such relationships are still not thoroughly defined in many instances. The most basic (though still underdeveloped) requirement of successfully managing these arrangements is to define the expectations of both service buyer and service provider in unambiguous terms: to develop a mutually acceptable service level agreement.

Why SLAs?

Well-defined services and their associated service levels are fundamental components of any successful outsourcing contract for the management or operation of part, or all, of an organisation's services by an external source, particularly information technology services.

The key to successful outsourcing encompasses defining services and service levels, that:

- can be measured and managed;
- can be audited;
- can be provided at an economic price; and
- give maximum value to the users of the services.

Although the terms of management of the contractual relationship is the responsibility of the buying organisation, the contract terms – and the associated service level agreements – should be used to condition the service provider's desired behaviour rather than to trigger penalties. The contract should be sufficiently flexible to accommodate the changing service needs of all parties. Unlike many internal service arrangements, the definition of services involving an external party requires detailed consideration and, in many cases, legally enforceable requirements (see Table I).

What is a service level agreement?

Broadly speaking, the output(s) of one or more processes or interfaces designed to meet the customer's expectations – or a defined set of expectations – form the basis of the contracted services and service level agreements. The purpose of an SLA is to provide the user of the service with the information necessary to understand and use the contracted services. It is imperative that the SLAs contain the necessary information to use and manage the service delivery.

A service level agreement identifies the service commitments of both service supplier and service buyer to each other at the boundary of their responsibilities. SLAs comprise the definitions, the repeatable functions, processes or outputs delivered from another part of the user's (buyer's) enterprise or from a third party, and a set of pre-agreed performance levels. SLAs can be divided into two basic types: direct services and indirect (or support) services.

Table I

Internal SLAs	External SLAs
Terminology is "understood"	Teminology defined
Not legalised	Legalised
Responsibilities defined	Responsibilities defined
Service definition not precise	Service definition precise
Processes understood	Processes defined
Cost rather than price, if at all	Price rather than cost

Direct services

Direct services are a set of specific services or deliverables aimed at a specific set of users. For a typical outsourced IT servicing agreement, these services may include:

- processing services (e.g. payroll);
- processing environments to support development;
- infrastructure services (e.g. email system);
- infrastructure support services (e.g. desktop devices); and
- other support or advice (e.g. help desk).

Indirect (support) services

Indirect services support the provision of direct services, but are not specifically the services being contracted. Some examples of indirect services include:

- periodic status or review meetings;
- attendance at meetings to provide expert views;
- performance reporting of service level achievement, problem events or change requests;
- testing of disaster recovery procedures;
- maintenance of equipment or asset inventory;.
- consultancy on strategy and standards; and
- service billing.

What does a service level agreement define?

An effective service level agreement defines the what, where, and when of a contracted service:

- *What are the functions and facilities that comprise the components of the service?* What does the user/buyer actually receive at the point of service delivery (POSD)? It may be reports or transaction responses on-screen, advice on what to do, or training (e.g. electronic file transfer of data). A unique identification of the deliverable and a short description are normally adequate. The emphasis here is on the end result from the buyer's point of view, not on the background items that the supplier of service may need to put in place to make it happen.
- *Where is the point of service delivery?* From the user's viewpoint the POSD is the "point of service receipt" and can be described by the location – which names the geographic location, building and/or departmental point at which delivery takes place – and medium – which defines the place/device in the location at which the service element is delivered (e.g. screen, reception, etc.).
- *When are the services delivered?* The aspect of service delivery time can be defined as the deadline by which time the service element is to be delivered, the window of time in which the service will be available, or the turnaround time (often referred to as response time).

SLA structure and components

A service level agreement is comprised of several components:

- service definition;
- service element groups; and
- service elements.

The most important components are the service elements, which comprise the foundation of the SLA structure.

A service element is defined as a single service deliverable in terms of what the service is and where and when it is delivered. Levels above the service elements can be regarded as discretionary groupings of service elements (see Figure 1).

The building blocks of SLAs – service elements – each contain four key components:

- A service description, which is a complete definition of the service boundaries from the user's viewpoint;
- Constraints, which define the rules and regulations within which the service will be delivered and achieved, the level of demand/activity beyond which the defined performance will not be assured, and any requirements placed by the service provider on the users, which, if not fulfilled, will mean the service provider may not achieve the agreed service levels;
- Performance measures – typically measured as time of service delivery duration or completion – which define the extent to which deviation from the service definition, or even perfection, will be tolerated; and
- Pricing, which defines the cost or charge to the customer for use of the service.

SLAs in outsourcing management

There are three main players in the management of SLAs (see Figure 2):

- steward (client-side contract manager);
- service provider; and
- users.

The stewardship role in an outsourcing contract is focused primarily on the measurement and auditing of the service provider's performance against the defined service levels. The steward – in conjunction with the users – is responsible for creating and maintaining the framework within which services are delivered and exploited. This framework includes contract terms and variations,

Figure 1
SLA structure and components

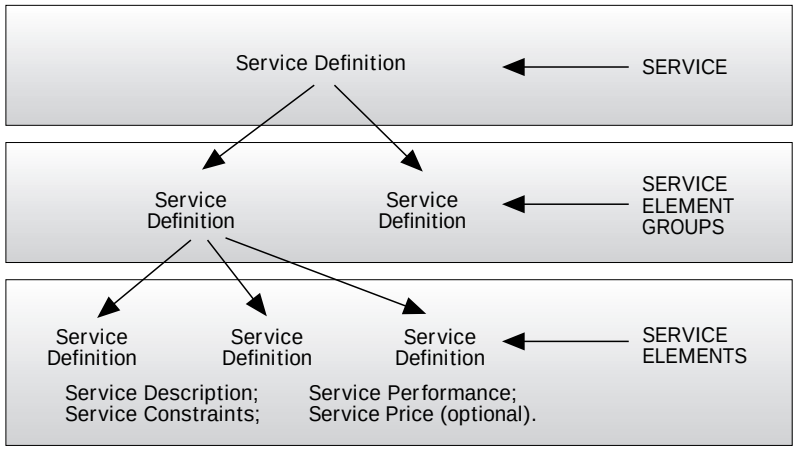
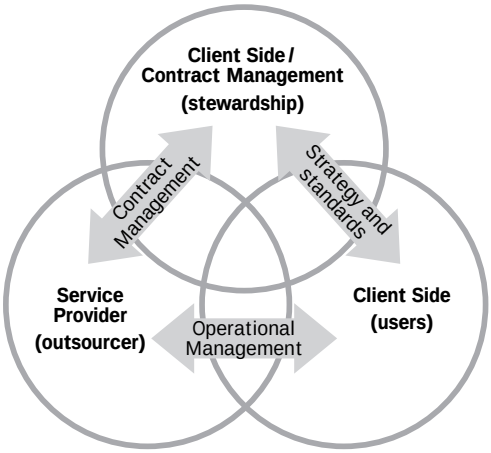


Figure 2
The three main players in the management of an SLA



standards, strategies and budgets. Additionally, the outsourcing steward generally is responsible for implementing contract variations, dealing with charges and compensation, and contracting for new services and projects.

The service provider (outsourcer) is responsible for delivering the contracted services, resolving day-to-day operational problems and managing the request and implementation of routine changes in accordance with the framework of contracts, standards, etc. The operational management interface between the service provider and the users focuses on the demand and supply of the contracted services. The client side only gets involved in operational management when the contracted service is threatened and/or demands deviate from the contract, The users are responsible for exploiting the services to generate value. Users should also be involved in the identification of requirements for the SLAs.

Measurement of SLA

Performance measurement of service delivery – and therefore compliance with the SLAs – is achieved using one or more of the following metrics:

- availability;
- reliability;
- serviceability;
- response; and
- user satisfaction.

Where the service provider exceeds the service level, the steward may reward the provider. Conversely, where the service provider fails to achieve the agreed service level, the service provider may pay "failure credits" to the client.

Availability

Measurement of availability identifies the proportion (percentage) of the time that the contracted service scheduled is actually accessible and useable over a defined measurement period (e.g. weekly or monthly).

Reliability

Reliability defines the frequency with which the scheduled service is withdrawn or fails over a defined measurement period (e.g. not more than three failures per week).

Serviceability

Serviceability is an extension of reliability, and measures the duration of available time lost between the point of service failure and service reinstatement (e.g. 95 percent of network failures in any working week will be restored within 30 minutes of the failure being reported).

Response
Response measures the time delay between a demand for service and the subsequent reply. Response time can be measured as turn-around time, transfer time (as in the case of a help desk call) or cycle time (as for recurring system batch processing).

User satisfaction
A measure of perceived performance relative to expectation. User satisfaction is often measured by survey using a repeatable process to track change over time.

Developing SLAs

The extensive effort required to develop complete and accurate SLAs should not be underestimated. Because SLAs form the core of the service delivery framework, understanding all of the users' expectations is a key component of developing thorough and successful SLAs.

The SLA development process has three major steps.

Step 1: project initiation
The project initiation phase of SLA development focuses on bringing together all of the resources that will be responsible for managing and measuring the achievement of the SLAs to ensure a high level of understanding of what the SLAs will involve. Identifying all of the affected users of the services is also critical in the early stages of the process. The initial phase of the project should also be used to select one or more services to act as a pilot or prototype SLA. Structurally, an SLA should contain the following information:

- services;
- service element requirements;
- service levels;
- forms;
- service management framework (e.g. reports); and
- glossary of terms.

Step 2: develop pilot SLA
In the second, and most time-consuming, phase of the development process, the full team must identify and collect the detailed service element data that will form the heart of the SLAs. Measurable, meaningful service elements must be defined and the associated minimum service levels identified. The collected data should be verified and agreed on by service users. Lessons learned from the pilot are documented for use when remaining SLAs are developed.

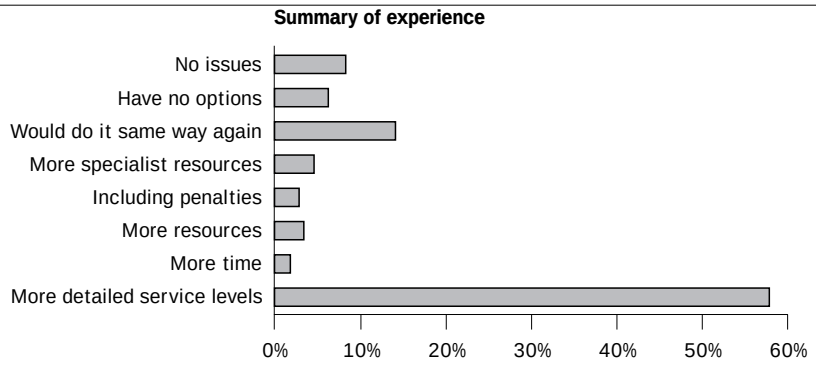
Step 3: develop SLAs
The final phase of the SLA development process focuses on the process of reviewing and fine-tuning the SLAs prior to approval and implementation.

Conclusion

The importance of developing comprehensive SLAs was highlighted in an Australian outsourcing poll conducted in 1997 by KPMG and its Nolan Norton Institute. When asked to summarise the outsourcing experience, over half of the organisations that have outsourced services to a service provider stated that they would have preferred to put more effort into developing more detailed service levels (see Figure 3).

In managing any commercial relationship, particularly outsourcing, information is critical for understanding the success or failure of the contracted arrangements. Without defining and measuring the services to be delivered, the information you need to manage the relationship will be difficult or impossible to obtain.

Figure 3
Summary of experiences of outsourcing agreements (responses to a poll conducted by KPMG and the Nolan Norton Institute)



Information Management & Computer Security
6/3 [1998] 128–132

To develop SLAs that can used on an ongoing basis – not a stack of worthless paper tucked away in a filing cabinet somewhere – remember that what you define is what you get. Service measures must reflect user requirements and have a clearly-defined scope, because there is not a "standard service" you can rely on the service provider to divine.

References

Hurley, M. and Schaumann, F. (1997),"The IT outsourcing decision", *Information Management and Computer Security*, Vol. 5 No. 4.

Lowrey, R. (1997), "'Owning' IT: the stewardship role", *NNI: Opinion*, Melbourne, Vol. 1 No. 5.

Rundell, J. *et al.* (1997), *IT Outsourcing: Intelligently Managing the Inevitable Decision*, KPMG Nolan Norton Institute, Melbourne.

This article has been cited by:

1. Guo Li, Yu-chen Kang, Xu GuanFashion Supply Chain Inventory Optimization Models with Service Level and Lead Time Considerations 237-249. [CrossRef]
2. Shaymaa Al-Shammari, Adil Al-YasiriMonSLAR: a middleware for monitoring SLA for RESTFUL services in cloud computing 46-50. [CrossRef]
3. Zainab M. AljazzafTQoSM: Total quality of service model 1-8. [CrossRef]
4. Mario Silic Institute of Information Management (IWI), University of St Gallen, St Gallen, Switzerland Andrea Back Institute of Information Management (IWI), University of St Gallen, St Gallen, Switzerland . 2014. Information security. *Information Management & Computer Security* **22**:3, 279-308. [Abstract] [Full Text] [PDF]
5. Huihong He, Zhiyi Ma, Hongjie Chen, Dan Wu, Huanhuan Liu, Weizhong ShaoAn SLA-Driven Cache Optimization Approach for Multi-tenant Application on PaaS 139-148. [CrossRef]
6. Kim Weyns, Martin HostService level agreements in Municipal IT dependability management 1-9. [CrossRef]
7. R. M. AbushabanAssessing and Improving SLAs for IT Service Providers, Linking Theory with Business 43-50. [CrossRef]
8. Vanita Yadav, B.A. Metri. 2012. Outsourcing Contract Success. *International Journal of Innovation in the Digital Economy* **1**:4, 41-53. [CrossRef]
9. Merat Ziyarazavi, Christer Magnusson, Torbjorn Tergesten. 2012. Qualifying and Quantifying IT Services Added Values in Outsourcing Assignments—Service Value Agreement. *Journal of Service Science and Management* **05**:04, 318-330. [CrossRef]
10. Leong Lai Hoong, Govindan MarthandanFactors influencing the success of the disaster recovery planning process: A conceptual paper 1-6. [CrossRef]
11. JaeJonKim, ###, SoonHu So, ###. 2010. Developing SLA Indicators for BPO Services Using BSC Framework. *Jounal of Korea Service Management Society* **11**:2, 1-24. [CrossRef]
12. Min-Sun Kim, Seung-Yoon Kim, Seung-Joon Lee, Jae-Beom Lee. 2009. The Effects of IT Service Management upon IT Service Management Performance: An Empirical Approach. *The Journal of Information Systems* **18**:1, 1-24. [CrossRef]
13. References 101-106. [CrossRef]
14. Anu Bask and Karen SpensSari UusipaavalniemiDepartment of Industrial Engineering and Management, University of Oulu, Oulu, Finland Jari JugaDepartment of Management and Entrepreneurship, University of Oulu, Oulu, Finland. 2008. Information integration in maintenance services. *International Journal of Productivity and Performance Management* **58**:1, 92-110. [Abstract] [Full Text] [PDF]
15. T.T. NiranjanManagement Development Institute, Gurgaon, India K.B.C. SaxenaManagement Development Institute, Gurgaon, India Sangeeta S. BharadwajManagement Development Institute, Gurgaon, India. 2007. Process-oriented taxonomy of BPOs: an exploratory study. *Business Process Management Journal* **13**:4, 588-606. [Abstract] [Full Text] [PDF]
16. Antti TuomelaSenate Properties Business Development, Lintulahdenkatu 5 A, PO Box 237, 00531 Helsinki, Finland; Tel: +358 205 811 365; Fax: +358 205 811 240; E-mail: antti.tuomela@senaatti.com. 2003. Tracing workplace knowledge in 'network service organisations'. *Journal of Facilities Management* **2**:2, 160-176. [Abstract] [PDF]
17. Adrián Hernández-López, Ricardo Colomo-Palacios, Ángel García-Crespo, Fernando Paniagua Martín, Pedro Soto AcostaPersonnel Performance Management in IT eSourcing Environments 202-219. [CrossRef]
18. Adrián Hernández-López, Ricardo Colomo-Palacios, Ángel García-Crespo, Fernando Paniagua Martín, Pedro Soto AcostaPersonnel Performance Management in IT eSourcing Environments 1615-1632. [CrossRef]
19. Vanita Yadav, B.A. MetriOutsourcing Contract Success 257-269. [CrossRef]