Chapter 12
Managing Enterprise Service Level Agreement

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ABSTRACT
The continued trend of globalization and technology improvement like the internet and transportation have spawned an increasing number of complex service chains that span across local, regional and national boundaries. Service level agreement (SLA) plays a crucial role in gluing service chains together. In that regard, this paper provides a complete guidance of end-to-end lifecycle management of SLA, including SLA-aware service modelling and terms optimization, contract drafting and compliance tracking. Among these, the author introduces his work in the area of enterprise SLA optimization to address existing deficiencies in this area including a roadmap for industry-strength SLA optimization capability and an initial version of SLA modeling and optimization toolset—code-named SLA-OASIS. Some out-of-box toolsets for SLA contract drafting and compliance tracking are also introduced.

1. INTRODUCTION
Services are economic activities offered by one party to another, most commonly employing time-based performances to bring about desired results in recipients themselves or in objects or other assets for which purchasers have responsibility. In exchange for their money, time and effort, service customers expect to obtain value from access to goods, labor, professional skills, facilities, networks, and systems; but they do not normally take ownership of any of the physical elements involved (Lovelock, 2007).

Service level agreements (SLAs) are part of service contracts where the levels of services are formally defined. It records the common understanding about services, priorities, responsibility, guarantees and such — collectively, the level of service. For example, it may specify the level of...
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availability, serviceability, performance, opera-
tion, or other attributes of service like billing and
even penalties in the case of violation of the SLA
(Encyclopedia, 2007).

During 1980s, there were a wave of privatiza-
tions in the service sector that liberated service
markets and called for regulations to protect the
interests of service consumers and providers alike.
Companies chose SLAs as legal means to handle
relationships with their customers. In recent years,
the tide of globalization further highlighted the
needs of service standardization, as complex log-
istics and service chains emerged and spanned
across country borders, which requires stricter
legislation and enforcement on quality of services.
European Committee, for instance, has set up ini-
tiatives on service standardization that takes effect
in December 2009 (European Committee, 2007).

A full SLA management cycle consists of the
following activities: terms negotiation and opti-
mization, contract drafting, compliance tracking
and reporting:

- Terms negotiation and optimization. For
  large service enterprises, by regulations,
  uniform SLAs are often provided to ser-
  vice customers to guarantee equivalence
  of services; for small and medium service
  providers, SLAs are often established via
  negotiations between service providers
  and service consumers.
- Contract drafting. To produce an appropri-
  ate and focused SLA requires non-trivial
  legal knowledge and efforts. There are
  some tools in the market that were de-
 signed to make the creation of SLA con-
  tracts more straightforward, which is often
  achieved via a collection of templates that
  facilitate contract drafting in a formal way
  (SLA-World, 2002).
- Compliance tracking and reporting. Once
  SLAs are created, it is important that such
  SLAs are kept being monitored to ensure
  its compliance. Industry practice showed
  that active monitoring of SLAs can typi-
  cally save 5 to 10% of annual service con-
  tract costs. There are some commercial
tools to offer the functionalities of SLA
tracking and reporting (NimBUS, 2007).

Drafting SLA contracts and tracking their
compliance both occur after term negotiation.
During the SLA negotiations, either with regula-
tors or service customers, it is crucial for service
providers to see the direct impact of proposed SLA
terms on their level of profitability, such that they
can have reasoned and informed decision makings.
To our knowledge, there is no commercial tool in
the market that can check levels of profitability
for any specified SLAs.

This paper will walk the reader through state
of the art of SLA lifecycle. To remain focused and
generic, the discussions will have to be limited to
a set of key SLA and operation parameters. The
author will explore some work related to SLA
optimization and outline some R&D tracks that
help build industry-strength SLA optimization
capabilities. An initial version of SLA optimization
toolkit code-named SLA-OASIS, will be reported,
in the context of a telecom service. Furthermore,
some typical out-of-box tools that are applicable
to certain activities, such as contract drafting and
compliance tracking will also be reviewed.

The remaining of the paper will be organized
as follows. Section 2 defines a set of key SLA
and operation parameters; Section 3 discusses
SLA terms negotiation and computer-assisted op-
timization; Section 4 covers template-based SLA
contract drafting; Section 5 reviews automated
SLA compliance tracking and reporting. Finally,
Section 6 concludes.

2. SLA AND OPERATION
PARAMETERS

Generally speaking, a service enterprise can be
considered as an entity that offers and fulfills a
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