

Modeling ITIL-SLM Process Flows with eTOM Level 3 Process Elements

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Abstract – The paper will demonstrate how the frameworks of the Information Technology Infrastructure Library (ITIL) and eTOM (Enhanced Telecommunications Operation Map) can be combined to face the challenge to expand from pure telecom business to the converged information technology and telecommunication market. Furthermore it validates concepts and recommendations outlined in GB921U, GB921V, TR143, and other TM Forum documents. The goal of this work is to provide a model of the ITIL - SLM (Service Level Management) Process Flow with eTOM Level 3 process elements.

Keywords – Information Technology Infrastructure Library, Enhanced Telecommunications Operation Map, Service Level Management.

I. INTRODUCTION

ITIL is a guideline for IT Service Management [1], [2]. ITIL was originally developed as a guideline to serve a single customer, though many Users, delivering many IT Services. The customer in this case is generally the organization or company that is using the IT Services to support its business whether they are provided using internal resources or external outsourcers. Below this single point of delivery any number of Operational Level Agreements (OLAs) and Underpinning Contracts (UC's) can be used to support the delivery of IT Services to the customer and their users. An OLA is an internal Service Level Agreement while an Underpinning Contract is a Service Level Agreement with a third party supplier.

ITIL is primarily non-prescriptive - it offers advice/guidance on the implementation and continued delivery of Service Management. It contains extensive advice covering the construction of cases for the systematic implementation of Service Management, overcoming objections raised to those proposals, planning their implementation and resolving typical problems likely to be encountered during the implementation process [3],[4],[5].

eTOM is a catalogue of process element categories [6]. eTOM is a business process framework to guide the development and management of key processes within an Information and Communications Service Provider. It provides this guidance by offering a catalogue of industry-standard names, descriptions and scope, at multiple hierarchical levels,

of all the Business Activities (or process elements) within an information and communications Service Provider [6], [7].

The current version of eTOM is customer centric viewing business processes in terms of their contribution (whether directly or indirectly) to customer service. At that level, it is difficult to discern the shape of some of the internal support processes dealing with the infrastructure, resource and business needs of the organization [8], [9]. Those processes supporting IT systems fall into this category. Future iterations of eTOM may illustrate the shape of these processes, as well as develop the linkages needed between these processes and customer-related processes.

To accelerate these enhancements to eTOM, reference to specialized process recommendations such as ITIL will bridge these gaps with proven, reliable process models. Further, the application of eTOM to the development of ITIL processes is likely to improve the scope and design of these processes, and will ensure their successful integration into a Service Provider's overall process environment.

II. THE SERVICE LEVEL MANAGEMENT PROCESS

The SLM process is responsible for negotiating Service Level Agreements, and ensuring that these are met. SLM is responsible for ensuring that all IT Service Management Processes, Operational Level Agreements, and Underpinning Contracts, are appropriate for the agreed Service Level targets. SLM monitors and reports on service levels, and holds regular customer reviews.

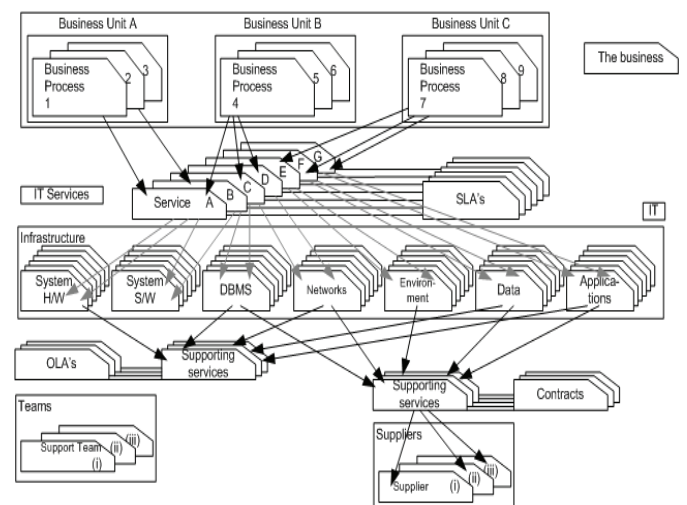


Fig. 1. Service Level Management [10]

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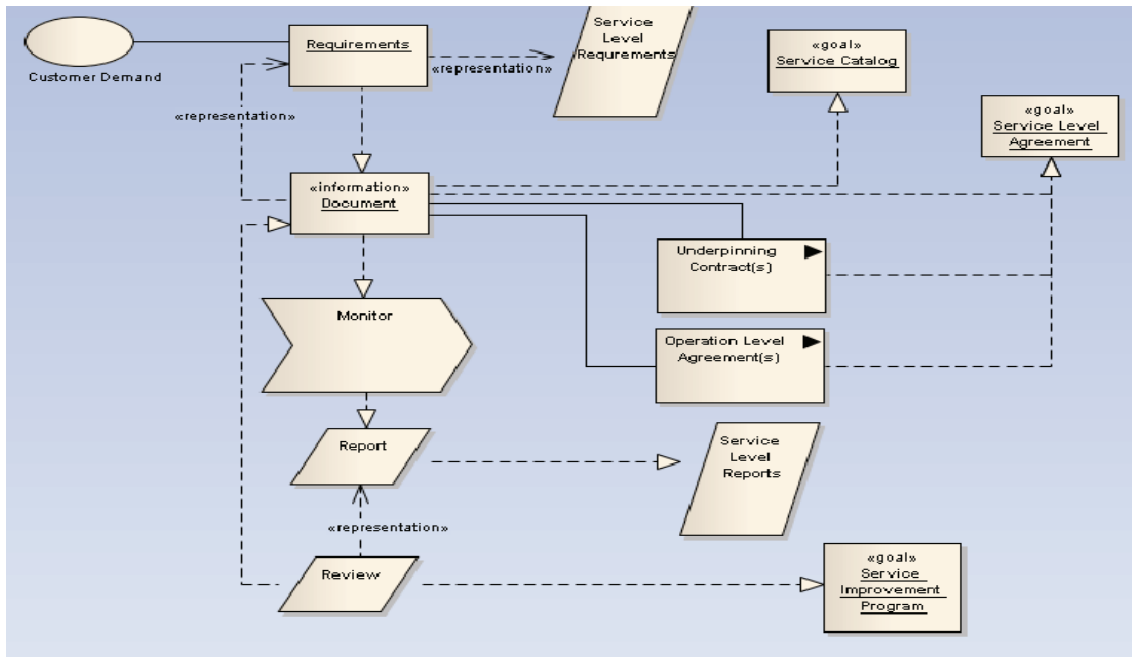


Fig. 2. The Service Level Management process (build and validated with Enterprise Architect® v8.0)

Service Level Management (SLM) negotiates, agrees and documents appropriate IT service targets with representatives of the business, and then monitors and produces reports on the service provider's ability to deliver the agreed level of service. SLM is a vital process for every IT service provider organization in that it is responsible for agreeing and documenting service level targets and responsibilities within SLAs and SLRs, for every activity within IT. If these targets are appropriate and accurately reflect the requirements of the business, then the service delivered by the service providers will align with business requirements and meet the expectations of the customers and users in terms of service quality. If the targets are not aligned with business needs, then service provider activities and service levels will not be aligned with business expectations and problems will develop. The SLA is effectively a level of assurance or warranty with regard to the level of service quality delivered by the service provider for each of the services delivered to the business. The success of SLM is very dependent on the quality of the Service Portfolio and the Service Catalogue and their contents, because they provide the necessary information on the services to be managed within the SLM process [10].

Figure 1 shows the relationship between the business and its processes and the services, and the associated technology, supporting services, teams and suppliers required to meet their needs. It demonstrates how important the SLAs, OLAs and contracts are in defining and achieving the level of service required by the business.

Although Figure 2 illustrates all the main activities of SLM as separate activities, they should be implemented as one integrated SLM process that can be consistently applied to all areas of the businesses and to all customers. These activities

are described in the following sections. The model is developed and validated with Enterprise Architect® v8.0.

III. MAPPING AND MODELLING BETWEEN ITIL AND ETOM

A. Scope and Type of Modelling

While eTOM and ITIL continue to provide value in their original fields of application, a number of factors are pushing the adoption of a combination of the two frameworks:

business drivers: Increase process efficiency by consolidating processes and technologies through standardization using the combined frameworks; Organizational consolidation between Operations Support Systems (OSS) and IT (driven by operational expenditure/capital expenditure [OpEx/CapEx] reduction pressure); Efficient management of convergent services requires more efficient end-to-end process management across Business Support Systems (BSS), OSS and IT; Interfacing with external or internal organisations that have adopted ITIL; Improvement of specific eTOM process segments by the adoption or reuse of ITIL best practices; Need for a consistent governance framework to govern strategy and align it to business objectives;

technology drivers: Service convergence on IP networks leads to the implementation of next-generation services, such as Voice over IP (VoIP), IP Television (IPTV), IP Multimedia Subsystem (IMS), and Service Delivery Platform (SDP) technologies. These services encompass pure network OSS layers and Value-Added Service (VAS) layers. End – to – end service management implies a fully

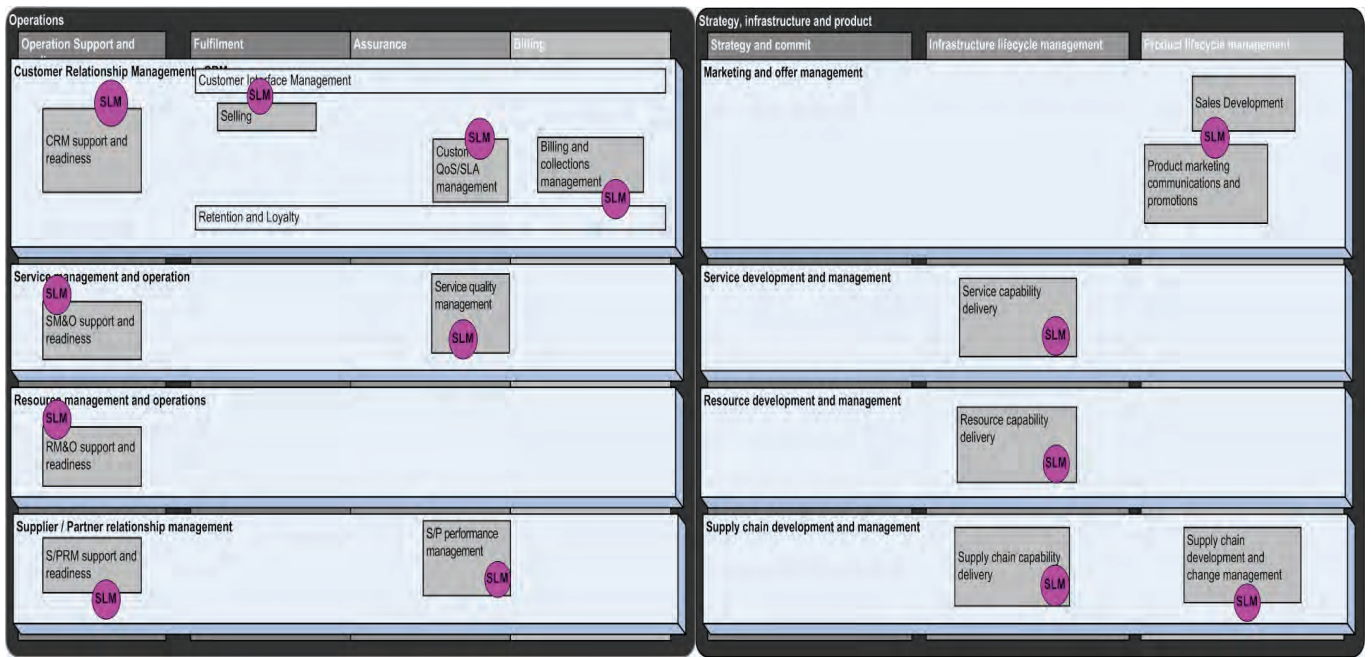


Fig. 3. Correlation between ITIL SLM processes and eTOM Operation process elements and SIP process elements

integrated service view that leads to end-to-end processes and interfaces across the OSS and IT organization.

There are several methods of mapping between the ITIL processes and the eTOM framework. One possible approach might be to decompose the ITIL processes into lower-level processes and end-to-end flows can be constructed from a combination of both eTOM and ITIL processes, alternatively ITIL processes can be constructed solely from lower-level eTOM process elements. The problem here is that the eTOM is currently defined to Level 2 for most processes and partially to Level 3.

The second way to map ITIL and eTOM is to define the correlation level between the major ITIL processes and the eTOM process elements.

The Fig. 3 represents the eTOM process elements and the position of the ITIL process elements toward to these elements. The different overlapping represents the correlation degree between them. The places and the correlations degree of the SLM Process are shown as well. The corresponding process flows that have to be modeled can be clearly seen on both figures.

The correlation degree is being fixed analytically by studying the SLM Process metrics and the predefined eTOM process elements metrics. Both metric types are the lowest-level decomposition of both ITIL and eTOM. According this study the Service Level Management Process corresponds to the eTOM Level 2 process elements shown on Fig. 3.

The eTOM Level 3 process elements were defined during the study as well. Because of the limited space Table I includes only some important eTOM process elements from the whole eTOM framework defined, that are relevant to the SLM process:

TABLE 1
eTOM PROCESS DECOMPOSITION

eTOM Level 2 Process	eTOM Level 3 Process
CRM, SM&O, RM&O and S/PRM Support and Readiness	Support Customer Interface Management Support Order Handling Support Problem Handling Support Billing & Collections - Support Bill Invoice Management - Support Bill Payment & Receivables Management - Support Bill Inquiry Handling Support Retention & Loyalty Support Marketing Fulfilment Support Selling Support Customer QoS/SLA
Customer QoS/SLA Management	Assess Customer QoS/SLA Performance Manage QoS/SLA Violation Report Customer QoS Performance - Create Customer QoS Performance Degradation Report - Track & Manage Customer QoS Performance Resolution - Close Customer QoS Performance Degradation Report
Service Quality Management	Monitor Service Quality Analyse Service Quality Improve service Quality Track & Manage service Quality Report Service Quality Performance
Service capability delivery	Map & Analyse Service Requirements Capture Service Capability Shortfalls Gain Service Capability Investment Approval Design Service Capabilities Enable Service Support & Operations Manage Service Capability Delivery Manage Handover to Service Operations
Technology Scanning	Scan for Emerging Technology from External Sources for the Enterprise Assess of Emerging Technology from External Sources for the Enterprise

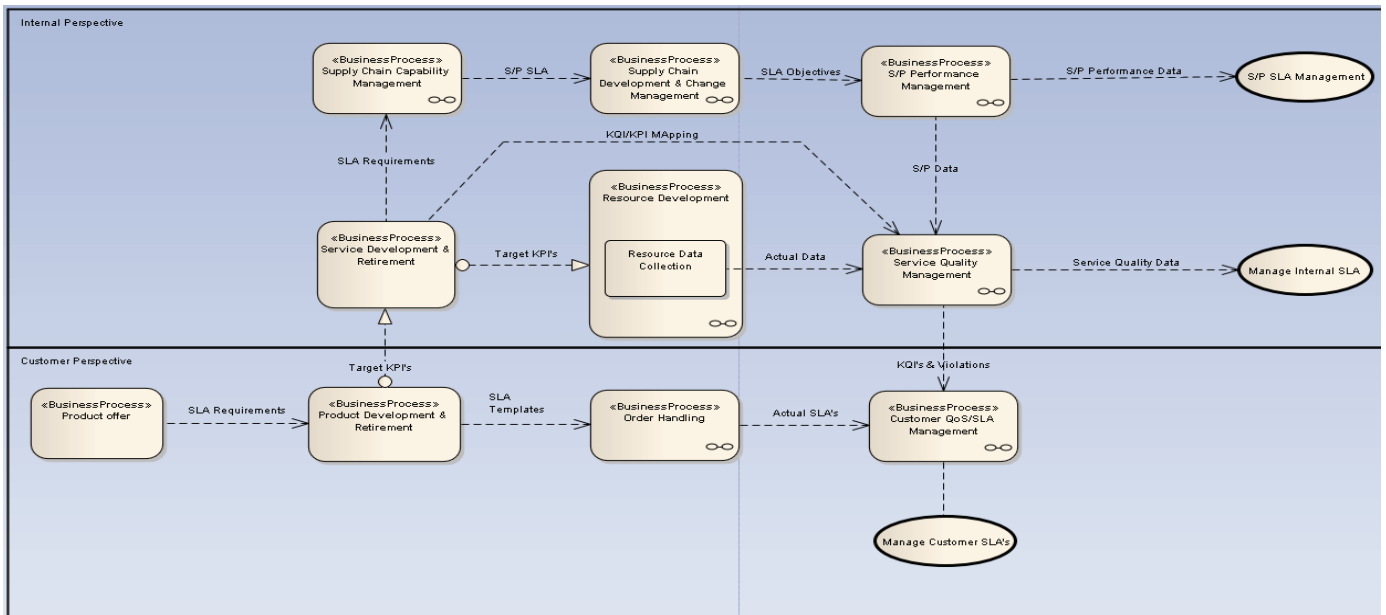


Fig. 4. The ITIL SLM Processes modeled with eTOM SIP Process Elements

B. Modelling ITIL Processes using eTOM Process Elements

Information and Communication Service Providers need to ensure that many different processes that they operate will work together effectively. The staff can easily understand the processes without having to learn a new language and they must be effectively implemented in IT. To do this they need to model all their operational process in a standard way and that can be done by modelling the processes using the Process Elements of the eTOM process framework.

Fig. 4 represents the goal of this work – the ITIL - SLM Process modelled with eTOM Process Elements. According to the eTOM Framework two areas were defined – the Customer- and the Internal Perspective. Each of them includes the appropriate business processes and activities, defined in eTOM and being mapped through the SLM Process. From the customer perspective the process starts with establishing the product offer and the leading requirements for the customer SLA. The goals of the customer centric process are the appropriate management activities and metrics for an optimal SLM process that includes the customer SLA's. The Service level monitoring process is internally fulfilled according to the predefined KPI's and KQI's of the Service Delivery and the Service Support processes. These processes involve the establishment, the management and the continual improvement of the corresponding UC's, internal SLA's and the relationship with the suppliers and the partners during the whole process.

Based on this model the optimal enterprise organisation can be developed in order to fulfil the processes needed without a redundancy or lack of workforces.

IV. CONCLUSION

This work is one of the series papers regarding the modeling of the ITIL Processes with eTOM Process elements.

The IT industry needs not only to deliver high quality services to their customers but also to find the optimal business flows of the process and the optimal structure of the enterprise. This could have an adverse effect of the service prices and on the revenue as well.

The approach used in this work was applied also for modeling other ITIL processes such as Incident Management, Problem Management etc. and have led to positive results regarding the business goals of the enterprise that implemented these models.

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