Planning Service Level Management Process using the Balanced Scorecard

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Abstract. *In the past, many IT organizations were internally focused on technical issues. These days, businesses have high expectations towards the quality of IT services and these expectations change with time. Furthermore, IT organizations have to provide the quality of IT services related to the business requirements and to concentrate on customer oriented approach. Service Level Management (SLM) process is used to ensure that adequate levels of services are delivered to all IT users in accordance with business needs and priorities within acceptable level of quality and costs. The goal of this paper is to analyze how organizations can apply Balanced Scorecard concept for planning SLM process because planning and implementation effective SLM process is a complex task requiring adequate resources.*

Keywords. Service Level Agreement (SLA), Service Level Management (SLM), Balanced Scorecard (BSC), IT Balanced Scorecard (IT BSC), SLM Balanced Scorecard.

1 Introduction

The quality of IT services depends on good relationships with the customer (users) of the IT organization. These relationships provide the basis for making different agreements. IT Customer Relationship Management plays an important role in developing the alignment between the IT organization (IT service provider) and business company purchasing (using) the IT services. Service Level Management (SLM) has the central role in the controlling of service levels. SLM is the process of negotiating, defining, measuring, managing and improving the quality of IT services at an acceptable cost [7]. Establishing an effective SLM process is very complex task requiring relevant and multidisciplinary resources. The first part of the paper presents the generic workflow of SLM process modelled by ARIS Business Architect Tools and shows the relevant external/internal documentation. In addition, the paper analyzes the generic Balanced Scorecard concept developed by Kaplan and Norton, especially its version applied on IT function (organization), IT Balanced Scorecard (IT BSC). Finally, the IT BSC is useful mechanism for planning SLM process. In connection with this, its translation into an SLM Balanced Scorecard is decribed and analyzed in this paper. The contribution of the paper is based on this analysis in order to show how the business company can plan and manage the SLM process raising its maturity level.

2 Service Level Management (SLM)

SLM has a central role in IT Service Management processes and provides the strategic alignment between the business company and IT organization (function), shown on Fig.1 [8]. The customer (user) can specify the business needs and IT organization then translates these requirements into technical specifications and activities.

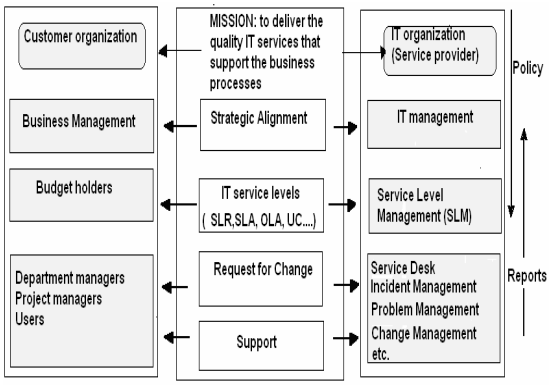

Figure 1. IT Customer Relationship Management

The SLM process has several important objectives [7]:

- to align IT strategy with the business needs;
- to describe the service provided to the customer(user) in a terminology that they understand;
- to create documents that clearly describe the services;
- to integrate the elements required for the provision of IT services;
- to improve IT service delivery.

Fig.2 shows the generic SLM workflow and the relevant documents modelled by ARIS Business Architect tool.

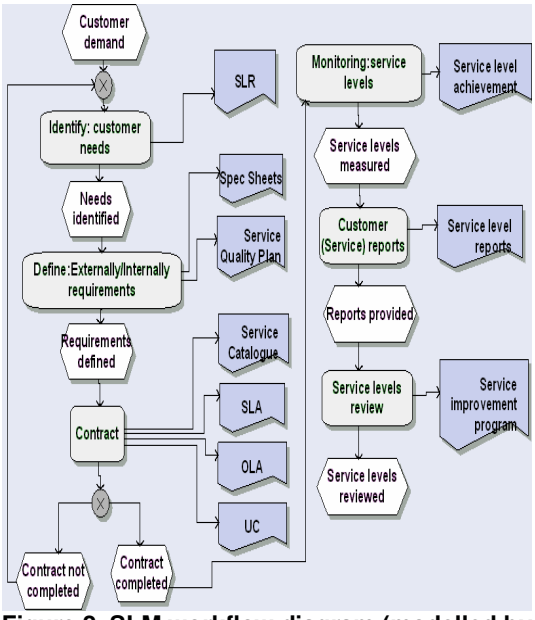

Figure 2. SLM workflow diagram (modelled by ARIS Business Architect, EPC diagram, source: Author)

External documents are: Service Level Requirements (SLR), Service Level Agreement (SLA), Service Catalogue. Internal documents are: Service Specification Sheets (Spec Sheets), Operational Level Agreement (OLA), Underpinning Contracts (UC).

The SLA is an agreement between the IT function (organization) and the customer that describes the services in non-technical terms based on the perception of the customer.

The SLR covers the detailed definitions of customer needs and is used to develop services.

The Service Specification Sheets (Spec Sheets) provide a detailed specification of the service. This documents translate the SLR into technical definitions needed to provide the service.

The OLA is an agreement with an internal IT department detailing the provision of a service.

The Underpinning Contract (UC) is a contract with an external provider defining the provision of a service.

The Service Quality Plan contains important management information needed to manage the IT function. In addition,the SLM process has an imortant role in planning, monitoring and improvement other IT service management processes in order to achieve the optimal service level performance. Each of IT process within the area of delivery and support has the defined activities, inputs, outputs, needed resources and the process control (management responsibilities, key performance indicators, critical success factors, quality plans, etc.).

The Service Catalogue describes the operational services in the customer's language that the IT function can provide.

The Service Improvement Program, based on the activities of monitoring and analyzing the service level performance, defines within the projects the relevant activities related to improving the IT service.

2.1 SLM activities

SLM process includes the following important activities (shown on Fig.2):

a)**Identifying**: identifying the customer's needs and understanding their business processes and strategy.

b)**Defining**: defining the services to be provided to meet the customer requirements; these services are defined in SLR documents, and their technological specification is defined in Spec Sheets documents; SLM process defines the quality plans for IT processes in order to provide the quality of IT services in accordance with SLA documents.

c)**Finalizing the contracts:** negotiating with the customer about the required services in relation to costs, quality, response time, availability and other requirements; output of this activity are SLA documents, OLA and UC contracts.

d)**Monitoring** the service level performance.

e)**Reporting:** regularly reporting to the customer and the IT function about the service level performance and the service level achievements.

f) **Reviewing:** reviewing the service in order to define the opportunities for improvements; there is a need for the implementation of the service improvement program; this may result in modified or new SLA documents.

3 IT Balanced Scorecard

Fig.3 shows the generic concept of strategic coordination as the basis for organization transformation [5]. Strategic integration is the link between business strategy and IT strategy. This is important for the strategic advantage of business companies. Operational integration provides the link between organizational infrastructure and processes and IT infrastructure and processes.

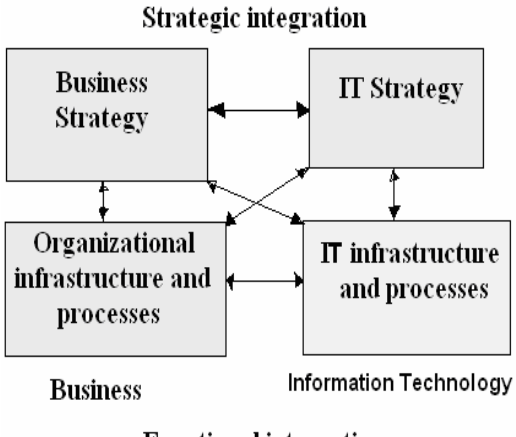

Figure 3. Strategic alignment model

Modern methods in planning the desired state of IT organization with the goal being the establishment of business value of IT are: the IT Balanced Scorecard (IT BSC) based on the business Balanced Scorecard developed by Kaplan&Norton and CobiT (Control Objective for Information and related Technology) [4]. Within the context of realizing business value of IT (IT Governance), these methods have the following goals [5]:

- to connect the business strategy with the IT strategy;
- to ensure that IT realizes its business contribution;
- to adequately manage IT resources and supervise their use;
- to adequately manage IT risks;
- to measure IT performance.

The key objective for IT BSC is to communicate the business value of IT to the whole organization [2]. The perspectives of the business BSC have been changed accordingly with the following perspectives within IT BSC: *business contribution, customer (user) orientation, operational excellence and future orientation.* Fig.4 shows the generic IT BSC framework and its cause-effect relations based on business BSC [3].

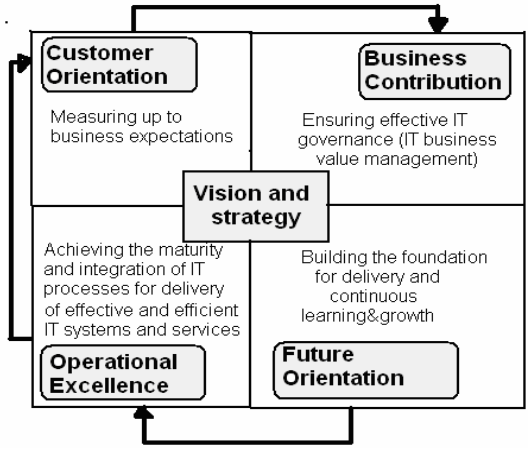

Figure 4. Generic IT BSC framework

The business contribution scorecard evaluates the IT performance from the viewpoint of top management and the shareholders. The core measurement system includes the following areas: *the strategic contribution, the business value of IT projects and management of IT investments.*

The customer orientation scorecard evaluates the IT performance from the viewpoint of internal business users as well as by extension the customers of the business units. The main issues within this perspective are: *customer satisfaction*, a*pplication development performance* and *service level performanc*e.

The operational excellence scorecard provides the IT performance from the viewpoint of process owners, service delivery managers and the audit bodies. This perspective provides answers to questions of maturity, productivity and reliability of IT processes.

The future orientation scorecard shows the IT performance from the viewpoint of the IT organization itself: process owners, practitioners and support professionals. This perspective provides answers to questions regarding IT's readiness for future challenges. Within this area the following issues are important: *service*

capability improvement, staff management effectiveness, enterprise architecture evolution and emerging technologies research.

4 Translating the generic IT BSC into SLM BSC

In this chapter the goal is to analyze the generic IT BSC perspectives and their translation into SLM BSC. Using this concept, business organizations can plan and manage the necessary resources for the SLM implementation.

Fig.5 shows the translation IT BSC into SLM BSC within the *business contribution perspective.* As business become more dependent on their IT services, the demand for higher quality IT services is also increasing. For business contribution perspective is very important to achieve the quality IT services through the business processes as well as the business value of SLM process. This perspective is output perspective (lagging) requiring the effective and multidisciplinary resources (leading).

BUSINESS CONTRIBUTION	
Question: How should IT appear to the management in order to be considered a significant contributor to company success? Mission: To enable the achievement of business strategies through the effective application of IT; to achieve a business value of IT	
Objectives:	Measures:
1. Strategic contribution (new business capabilities)	1. % of completed strategic initiatives
2. Business value of IT projects	2. ROI, value analysis; information economics
3. Management of IT investments	3. Actual vs.budgeted expenses

BUSINESS CONTRIBUTION ==>SLM BSC	
Question: How does management evaluate the SLM process? Mission: To achieve the business value through the SLM process	
Objectives:	*Measures:*
1. The business value of the SLM process	*1. Percentage of processes covered by SLA in order to achieve the business goals*
2. Management of IT investments (costs) of the SLM process	*2. Actual vs.budgeted expenses*

Figure 5. The translation IT BSC into SLM BSC Business Contribution (source: Author)

Fig. 6 shows the translation IT BSC into SLM BSC within the *customer (user) orientation perspective.*

This concept has to enable the specification of the essential values that support the customer (user) satisfaction in order to achieve the business goals. In the SLM context, the service level performance is an important leading factor for customer (user) satisfaction and for enabling a business process.

CUSTOMER ORIENTATION	
Question: How do users view the IT function, how should IT appear to the internal customers (users and division managers)? Mission: To be preferred supplier of IS for all information services.	
Objectives:	Measures:
1. Customer (user) satisfaction	1. Annual customer survey
2. Application development performance	2. delivered quality; delivered within budget and time; index of IT investment in generating new strategic applications index of business involvement in developing new applications.
3. Service level performance	3. % of applications and operational services for performance

CUSTOMER ORIENTATION ==> SLM BSC	
Question: How do users evaluate the SLM performance? Mission: To meet business needs of users and to improve user satisfaction	
Objetives:	*Measures:*
1. Customer (user) satisfaction	*1. User satisfaction survey*
2. Service Level Performance	*2. % of applications and operation services meeting SLAs*

Figure 6. The translation IT BSC into SLM BSC Customer Orientation (source: Author)

Fig.7 shows the translation IT BSC into SLM BSC through the *internal (process) perspective.*

The mission of this perspectives is focused to continually improvement of the SLM process in order to achieve the optimal service level performance (cause-effect relationship). In accordance with this, there is a need to achieve the optimal process performance based on optimal costs, quality, cycle-time.

In general, these are the value-added proposition for customer (user) satisfaction such as: adequate respone time, availability, effectiveness, incident resolution etc.

SLM process can be measured by maturity models within the following maturity levels:

- *non-existent:* processes are not applied at all;
- *initial:*processes are „ad hoc“ and disorganized; little or no process management activities; no importance, no resources or no awareness within the organisation;
- *repeatable:* processes follow regular patern; low importance, few resources or little awareness within the organisation;

- *defined:* processes are documented and have a process owner; the focus is on the efficiency and effectiveness of the process;
- *managed:* processes are monitored and measured;
- *optimised:* continual improvement of the processes.

OPERATIONAL EXCELLENCE		OPERATIONAL EXCELLENCE=>SLM BSC	
Question: How effective and efficient are the IT processes? *Mission: To deliver effective and efficient IT systems and services.*		*Question: How effective and efficient are the SLM process?* *Mission: To implement the mature and effective SLM process*	
Objectives:	Measures:	*Objectives:*	*Measures:*
1. Process excellence (efficient and effective development efforts)	1. Process maturity level; quality of process performance costs of process performance, speed dimension of process performance	*1. Efficient implementation of SLM process* *2. Efficient performance reports* *3. Efficient improvement of SLM process* *4. Efficient account management*	*1. Maturity level of SLM process (COBIT maturity models)* *2. % of failures to provide performance reports* *3. quality aspects of SLM performance* *4. cost aspects of SLM performance* *5. SLM process cycle time*
2. Responsiveness	2.Process cycle time, systems time to market		
3. Security and safety	3.absence of major issues in internal/ external audit reports		

Figure 7. The translation IT BSC into SLM BSC Operational Excellence (source:Author)

FUTURE ORIENTATION		FUTURE ORIENTATION ==> SLM BSC	
Question: how will IT develop the ability to change and improve in order to better achieve the IT and company's vision? *Mission: To develop internal capabilities to learn and innovate and to exploit future opportunities.*		*Question: Is IT organization positioned to meet future service level management challenges?* *Mission: To develop the knowledge and capabilities to accept and achieve future opportunities*	
Objectives:	Measures:	*Objectives:*	*Measures:*
1.Training and education of IT staff	1. % of staff with completed professional development plan; % of work done by contractors	*1. SLM education of IT staff and users* *2. Research into SLM and adopt new technologies*	*1. Costs of SLM education as percentage of total IT budget* *2. %of IT budget on SLM research and new technologies*
2. Emerging technologies	2.% of IT budget allocated to research new technologies		
3. Enterprise architecture evolution	3. development of enterprise architecture		
4. Service capability improvement	4. Internal process improvement		

Figure 8. The translation IT BSC into SLM BSC Future Orientation (source: Author)

Fig.8 shows the translation IT BSC into SLM BSC through the *future orientation perspective*.This perspective represents the human and technology resources as well as the different improvement projects needed by the SLM process to deliver the quality services.

Essential components of SLM BSC are the measures (KPI's) and the cause-effect relationships between BSC perspectives. Within these relationships management can analyze the influence of the performance drivers on the outcome measures [1].

In accordance with this, Fig. 9 shows the example of the general SLM strategy map based on previously described generic IT BSC models and their translation into SLM BSC.

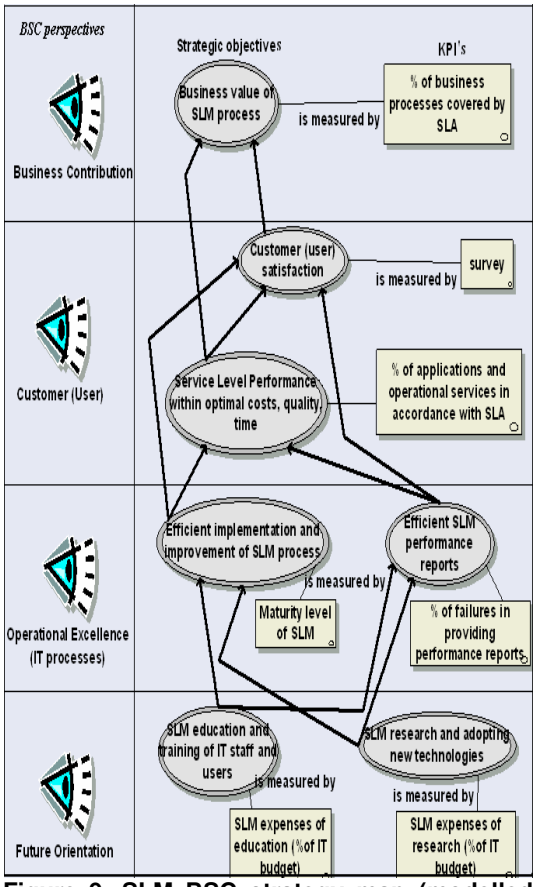

Figure 9. SLM BSC strategy map (modelled by ARIS BSC tool, source: Author)

SLM BSC map encompasses the main SLM strategy objectives and their measures, and shows the important the cause-effect relationships between leading perspectives (*future orientation and operational excellence*) and lagging perspectives (*customer and business contribution perspectives)*. For example, SLM

education and new technologies are the performance drivers to achieve the quality and maturity of SLM process that in turn is a driver for optimal service level performance and increased customer satisfaction that will lead to a higher business value of SLM process (business contribution).

Fig. 10 shows how organizations can plan the needed resources for the SLM implementation. This figure shows the resource allocation for the strategic objective – *efficient implementation and improvement of the SLM process* (from the SLM BSC map shown on Fig.9). On this way, each strategic goal from the BSC map can be allocated with needed resources in order to achieve the quality performance.

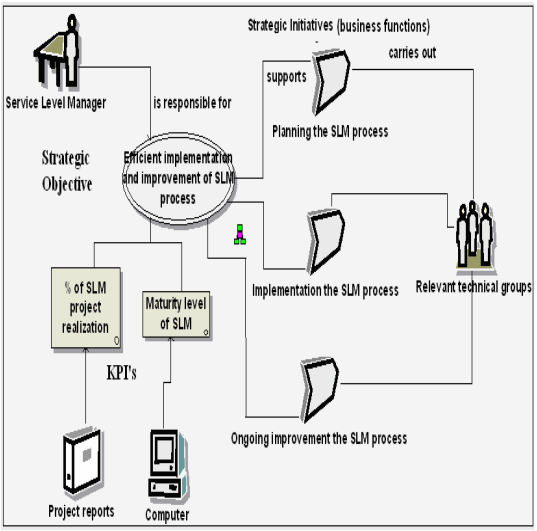

Figure 10. SLM BSC performance allocation diagram (modelled by ARIS BSC tool, source: Author)

4 Conclusion

In today's business systems exists the need to provide the quality of IT services through the business processes. The quality of IT services for business support depends on the planning, implementation, measuring, analysis and continual improvement of the IT service management processes.

ITIL (Information Technology Infrastructure Library) standard ensures a consistent best practice concept for setting up the IT service management processes built into the IT organization. SLM process is the main process that focuses to provide the optimal balance between service level requirements, the quality and continutity of IT services as well as the relevant costs. In general, SLM process provides the balance between the areas of IT service support and IT service delivery.

SLM process is analyzed and described in this paper using ITIL concept. Establishing an efficient and effective SLM process is a complex and difficult task requiring adequate resources. In accordance with this, the goal of this paper is to analyze how organizations can apply Balanced Scorecard concept for planning and implementation SLM process. The paper analyzes the generic IT Balanced Scorecard models and their translation into an SLM Balanced Scorecard.

Except the Balanced Scorecard method, CobiT (Control Objectives for Information and related Technology) is another useful and supportive mechanism for planning and implementation a mature SLM process by identifying control objectives, maturity models, key performance indicators, key goal indicators and critical success factors. This methodology is the focus for the next research, because the mission of IT management (IT governance) within this scope is to raise the maturity of SLM process and to achieve the higher business value of IT.

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