

SLA Unified Management



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1. Service quality

Interaction between supplier and customer should always be present in the production and delivery of services. In such a process, two components form the customer's perception on the service quality: its technical level and the quality of the interaction. The technical level depends mostly on technological factors usually controlled by the supplier. The quality of the interaction depends, however, on something usually unpredictable and intangible: the customer's perception.

The customer's perception can be explained as the comparison among the expectations that he/she had about the service before trying it and the actual quality obtained during the interaction. The most effective way to manage quality on this perspective is to make it clear, during the process of recruiting the service, what the customer may expect from the service. For this it should be settled down between supplier and customer a service level agreement (SLA) in which supplier and customer accomplish a **Pact of Quality**.

2. SLA and SLM

SLA is a document complementary to a services contract that defines the technical quality criteria of this relationship. SLA includes several items, such as the description and comprehensiveness of the agreement, the responsibilities taken during the service installment and the detailing of the quality indicators involved. SLA is associated to one or more services that, by their turn, are composed of elements that cooperate with each other.

For the detailing of the quality indicators, SLA makes reference to another document denominated notebook of metrics. In this document the indicators are described precisely in order to clearly define the accorded quality level.

After being defined and implanted, SLAs need to be managed. This is accomplished through a procedure denominated service level management (SLM). SLM objective is to assure customers that they will get the level of accorded services contained in SLAs.

For further information on both SLA and SLM see Visionnaire's article: *Gestão da qualidade de serviço* (Managing service quality).

3. Notebook of metrics

The notebook of metrics is SLA technical side. It is where the indicators are listed, described, and quantitatively defined. The notebook of metrics also defines the quality goals and specifies all indicators' thresholds.

The service supplier should register all norms related to the indicators on the notebook of metrics. These norms define a condition with a business meaning to the indicator and the corresponding action to be taken in case that condition is verified. This allows the supplier to register the specific operational actions to deal with the detected condition.

The notebook of metrics should possess one section for each indicator. These sections start with their description and relationship to the goals of the business. Then, follows a quantitative part defining how the indicators are calculated, the source of the performance data that will be used in the calculation, how and how often these data are collected and how they will be summarized in case of necessity. A section of the notebook of metrics can be structured as follows:

NAME OF THE INDICATOR - It contains the indicator's full name and an acronym identifying it.

DESCRIPTION - It contains a textual description of the indicator and its relationship to the business.

PERFORMANCE DATA - It defines which data should be collected to calculate the indicators, including a list of such data, how they are collected and how often.

CRITERIA OF SUMMARIZING - The performance data are collected periodically and they need to be summarized. In other words their averages should be calculated for several periods of time. In this way average rates are calculated hourly, daily, weekly and monthly. It is evident that this item may not exist in certain indicators.

FORMULA - Indicators are calculated through a formula. This formula, defined as an SMN tool, calculates the indicator considering its performance data and summarizing criteria.

THRESHOLDS – Thresholds define the accorded value for a specific quality indicator and are used in the process of monitoring follow up. They are used also for quality report elaboration.

NORMS - Norms define a condition with a business meaning to the indicator and the corresponding action that should be triggered in case the condition is verified.

Example:

INDICATOR'S NAME

Name: Database server availability

Acronym: DBA

DESCRIPTION

This indicator registers the database server availability given by data collected from the system management software.

The database availability affects all business transactions. When below 98% it represents a 33% loss of income.

PERFORMANCE DATA

Data composing DBA indicators are database server transition records toward unavailable status (down) and toward available status (up) recorded by the systems management software on its file log. The following information should be present on the log records:

- Service element identifier (database server)
- Date/time at the beginning of the unavailability status
- Date/time at the beginning of the availability status

Systems management software log files will collect data every 15 minutes.

SUMMARIZING CRITERIA

Non-applicable.

FORMULA

Several different time bands can be defined on the notebook of metrics (example: in and out business time). Each time band is associated to a different accorded value for the indicator. In order to calculate the availability for each time band it is considered only the down and up records totally or partially within this band and these records determine the value of the availability in that time band. This value then can be then compared with the accorded value for that time band. One can also define programmed stops that are periods of time reserved to the supplier to accomplish the maintenance of the service elements. The unavailability measured for the element doesn't include the unavailability that may happen during a programmed stop.

THRESHOLDS

It remains established that the DBA indicator should be equal or above to 98%.

NORMS

When the DBA indicator is between 98,01% - 99,00%, send an e-mail for DBA monitoring.

4. SLM tool

SLM can become a very complex activity. For the supplier it includes the procedures put in practice to guarantee SLAs execution. This includes keeping an inventory from customers, services and quality indicators and, also, from SLAs that relate customers, services and indicators. SLA inventory also includes the calculation time for each indicator and the related threshold for each monitoring time. SLM also involves the definition and processing of norms associated to the indicators, the collection of performance data from the service elements, their summarizing and the calculation of the value for each indicator based on these data.

In general the amount of information treated in the SLA management is enormous making it necessary a support from a computer tool. This tool should be able to:

- Model the indicators of service level, including their formulas, thresholds and operational rules in the most dynamic fashion possible.
- Model services and their elements and to relate them to indicators (SLAs must be defined).
- Make possible the monitoring of quality indicators at the service element and service levels. Indicators can differ between levels.
- Collect and summarize performance data.
- Calculate indicators and supply the customer with information on the quality of the rendered service.
- Monitor indicators and define methods so as to anticipate any agreement violation tendencies.
- Trigger the operational processes that will allow the reversion of any agreement violation tendency and the contingency plans to be used in case of such violations.

It is important to the customer to follow closely the agreement execution. For that he/she needs to:

- Receive information on supplied services.
- Validate the indicators and the quality of such services.
- Reassess their needs and redefine any new indicator goals in accordance to the provider.

Any tool supporting SLA management should be chosen carefully and need to attend a group of functionalities that will cover the needs observed.

5. Visionnaire Pacto

Visionnaire Pacto is a service level management (SLM) product. From a service quality model accorded between supplier and customer, Visionnaire Pacto allows the management of such quality. SLA is Visionnaire Pacto's system configuration base. Its flexible architecture allows monitoring the different types of the quality indicators, regardless whether they are related to the technology supporting the service or to the supplier's operational efficiency. It is the only product that gives a unified estimation from the quality of the service delivered by a supplier.

Visionnaire Pacto's objective is to manage SLAs within service delivering environments in which there is a very high volume of treated information such as information technology and telecommunications.

Registering SLA

Visionnaire Pacto possesses an inventory module for SLA contract configuration. One SLA refers to one or more services supplied to a certain customer, each service being composed by a group of service elements. Each service or service element is related to a group of quality indicators with thresholds accorded for each of them. This relationship defines SLA.

Usually the service elements are components already managed by the company with their configuration data present in some kind of configuration management system (CM). Visionnaire Pacto integrates its SLA configuration core with the CM systems so as to facilitate the inventory of services and elements.

All data composing SLA are registered through an easy to use management module. This module allows the SLA inventory with its services, the service elements that constitute the service and the accorded and/or expected service levels for each one as well as the monitoring norms.

In the inventory of an indicator it is possible to define its formula using the performance data to be collected. In such procedure Pacto system manager uses computer processes programmed by the user. This makes Pacto such flexible and adaptable computer software to help with its users' needs.

The thresholds define the quality goals. Thresholds are used in monitoring processes and quality reports elaboration. Operational norms allow computerized actions to be automatically initiated when a certain condition is identified.

A condition and an action will induce the management module norms editor to create a norm. The condition is a logical expression composed by logical and variable operators. This expression is evaluated as false or true according to the variables' current value. These variables are the registered indicators, whose value is automatically calculated when the system operating. A norm action contains a command that may be linked to an action outside the (Visionnaire Pacto) system. Examples of such actions are: to send an e-mail, to record data on a file or to run a program from another system.

Several automatic actions can be defined. For instance, to inform the appointed team that there is a tendency of service degradation or to order the accounting system to grant a discount to the customer when the quality level is below expectation.

Expected quality platforms can be established for each service quality indicator. For instance:

- Average repairing time should be less than two hours during working hours.
- Average repairing time should be less than four hours outside working hours.

Calculation of indicators is triggered automatically by Visionnaire Pacto's core. The periodicity of this calculation can be configured. Each time that the defined interval of time ends all conditions associated to the indicator are verified. These are: calculation of the indicators current value, assessment of all logical expressions defined when setting the norms conditions and the triggering of associated actions in case the condition is verified. For instance, one indicator can be defined to measure the service availability with a 99,5% platform and the norm: "if availability is less than 99,5%, send an e-mail to the contract manager".

Visionnaire Pacto is flexible when configuring validity time for performance data used to calculate an indicator, allowing registration of different properties for an indicator in accordance to its calculation time band. One can, for instance, to define a threshold for working time and other for nighttime. It is also possible to register other time periods such as holidays and programmed maintenance time.

Proactive quality management

Visionnaire Pacto allows the implantation of proactive quality management. Internal algorithms from indicators values identify agreement violation tendencies. These violation tendencies can be registered as a norm condition alerting the person in charge. The alert sign is given by a norm-derived action. The monitoring tool is another way to be aware of such tendency.

Monitoring can be made at distance by following the quality indicators through Internet. In this way one can easily verify which indicators are within the required platforms, which are in a degradation situation and which are presenting a quality above expected. With these information the company may take any necessary corrective measures.

Report elaboration and distribution

Visionnaire Pacto allows integration with the market's most important report elaboration tools. Its framework makes possible a very simple real time Internet visualization of any reports. It suffices to go to the report site that will be available after the system is in place.

Report elaboration and access pages are written in the own company business language. Browsing is intuitive and for report generation it suffices to fill out the filter fields and start consultation. Reports are visualized on the own Internet browser and can be printed or recorded on an appropriate format (spreadsheet format, for instance) for future analysis.

6. Architecture

Visionnaire Pacto is a modular software system projected and constructed using state of art technology. It can be used on any computer platform and comes ready to use on Internet.

The following illustration shows the modules that compose Visionnaire Pacto: Extractors, Core, Manager, Monitoring and Reports.

Extractors are links between Visionnaire Pacto and the company systems. These modules collect data from the systems that support the service management (for instance: performance management, helpdesk, call center and others), making them available on the needed format for calculating quality indicators.

Core module monitors the active quality contracts, accomplishing calculations and triggering defined actions. Through the actions defined on the rules, Core can interact with other company systems such as ERP, EIS, Helpdesk and invoicing.

Management module interacts with Core to help with customers, services and indicators inventory. It features the necessary functions to model a customer related SLA, the services and service elements that compose this SLA as well as the levels accorded on the contract.

Reports module allows quality reports to be seen and distributed through Internet.

Monitoring module is a quality supervision system (also on the Web) that presents the quality indicators current situation allowing getting details on monitored items.

7. Benefits

Unique tool for SLA management

Visionnaire Pacto is a complete product for managing SLA. From a quality model accorded between supplier and customer, Visionnaire Pacto allows the monitoring of all quality indicators in an agile and effective way. SLA is the base for configuration of the system. In this way the contract signed with the customer is used to monitor indicators, avoiding the redo of tasks already accomplished and minimizing misunderstandings.

Visionnaire Pact's flexible architecture allows monitoring several types of quality indicators. These can be related to technology or to the service supplier's operational efficiency. This flexibility is possible thanks to the extractors that adapt the performance data format from any system and adapt it to the core internal format.

Visionnaire Pacto is the only complete and ready to use SLM system that works with operational efficiency indicators. This feature allows the management of indicators very important to the business such as operational availability, average time between failures and average repair time.

Success Critical Factors Treatment

Monitoring services effectively is very helpful in trend analyses and identification of success critical factors. Trend analysis allows SLA proactive management making possible any needed tuning up. By identifying any critical factors, one gets to know which items can be acting on eventual service improvements or degradations. This favors specific corrective actions to take where return is better with investment optimization as the result.

Visionnaire Pacto gives information that are very helpful in decisions that produce operational cost reduction, process optimization and personalized offers to customers. The company gets competitive differentiation among competitors, something that is translated into quality guaranteed and process optimization.

Integrated solution

SLA can be fully configured within Pact by precisely defining all quality indicators with their formulas calculated from the collected data, the quality platforms and the actions to be carried out in accordance to the quality level presented.

Data on service performance can be collected directly from the company systems such as performance management systems, help desk and call center. Through computer actions associated to the norms, the product can interact with several systems of the company such as ERP, CRM, and invoicing.

These features make possible an integrated management on services quality from their definition and management to the critical decision taking process. A single application is responsible for wholly managing the service quality. Other applications for managing this quality will not be needed. Pacto is a framework that collects all performance data from services. It also processes all quality indicators and supports the entire service level management (SLM) process.

The correct action on the right moment

Several automatic actions can be defined. For instance, to inform the team in charge that there is a tendency of service degradation or to command the invoicing system to grant a discount to the customer when the quality level is below the expected.

Decisions can be taken at the most appropriate moment and before they may cause trouble. Visionnaire Pacto favors your company to get an effective management in terms of quality.

The best of technology

Visionnaire Pacto was developed with the best technology available. Based on international patterns it can run on different computer platforms and database management systems (DBMS). The entire quality management can be accomplished on the Web. The product allows rapid expansion and presents no limits to business performance.

Visionnaire Pacto was developed in JAVA language using CORBA as its communication framework. Its architecture is multi-tier. It can be run in wide scale environments and directly on the Web. Another important architectural feature is that it was developed allowing scalability. This feature gave it the necessary flexibility to be in harmony with the increase in service level management activities such as the increase in numbers of services and customers as well as in the monitored indicators portfolio.

Visionnaire Pact's implementation is totally open with all its defined internal interfaces on IDL/CORBA accessed by the IIOP protocol. It may be easily linked to other management systems due to the fact that CORBA patterns are becoming widely accepted by the information technology industry.

8. Conclusion

Unnoticed quality is not valued. This is why is so important to optimize processes and have tools to monitor their quality. That's Visionnaire Pact role. Registering SLAs in Visionnaire Pacto is very simple. It suffices to use quality indicators defined by treating already available data on rendered services. Visionnaire Pacto is the simple and integrated solution to treat these data with all their calculation, summarizing and eventual changes.

Elaboration of quality indicators allows the system to accomplish their validation in accordance to the quality levels asked. This makes possible a continuous on line monitoring of the values accorded with customers. All this can be checked on reports or through the monitoring tool at the Web. The visualization of those quality indicators adds value to products and improves processes. It also provides valuable information to decision taking procedures.

The chart below shows an example of the behavior of a certain quality indicator for a certain period of time:

To the services supplier, Visionnaire Pacto allows a leveling in service quality to what is asked by the customer. In such a way proactive actions can be taken to avoid the quality to be below acceptable levels. Similarly, when the quality is above the expected level, the supplier can adjust the service avoiding waste and seeking the best financial return. For instance, the supplier can receive a bonus for higher quality levels obtained. He/she can optimize the use of resources, keeping quality to remain within accorded limits.

Visionnaire Pacto allows the customer to monitor the actual quality of the contracted service. With this follow up customers can know in advance the difficulties that may happen and be ready to avoid serious consequences. Contracts can be established in a way to guarantee the desired level in quality. Monitoring tools supply the customer with a concrete idea on what he/she is actually negotiating. So the customer is actually aware of the quality level of the rendered service and can evaluate the supplier according to the obtained results.

The final result is a closer link between customer and supplier and success in their common business objectives!

About Visionnaire:

Visionnaire PACTO is the first Brazilian software for managing Service Level Agreements (SLA). PACTO features many differentiation items, such as treatment of operational and technical indicators, customization for the Brazilian reality and unified management.

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