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IT Service Management Diagnosis at Grefusa Group and ITIL Implementation Proposal

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ABSTRACT
We describe a project where the IT management processes of a multi-national organization were diagnosed and a roadmap for a staged ITIL implementation was defined. First, with the help of the CIO, an OGC questionnaire was used for the self-assessment of the maturity of the existing IT services. Then, using these results as a baseline, an improvement plan was defined, assigning different priorities to the evolution of different ITIL practices according to the current performance, relevance for the business goals of the company, and possible dependencies from other practices. Care was also taken to ensure quick-wins and the collection of metrics to sustain project momentum. The outcome of the project was of great value to the specific organization where it was carried out, but can also be useful to other companies facing the same concerns, namely by acting as an exemplar and by way of the lessons that were learned and are discussed.

KEYWORDS
IT Service Management, ITSM, ITIL

INTRODUCTION
After the implosion of the so-called technological bubble, the concerns of the CIOs shifted from technological innovation and search of new business models to infrastructure consolidation, reduction of complexity, and productivity measurement (Luftman, 2004). IT resources are being aimed at efficiency and client satisfaction, which can be achieved by a service-oriented IT management (Hochstein, 2005, and Zarnekow, 2004). In addition, client-oriented IT management forms one of the most important strategic driving forces (Hochstein, 2005), and it is increasingly recognized that appropriate of resources must be used in support, delivery and management (Rudd, 2004). Therefore, IT departments are continuously searching for new models and strategies to improve how services are delivered to the business. These concerns are shared by Grefusa Group, who decided to diagnose its IT service quality and improve it using the guidelines of the Information Technology Infrastructure Library (ITIL).

In the next section we start by describing the Grefusa Group, to provide the reader with some context on the organizational environment. Then, we briefly describe the Information Technology Infrastructure Library (ITIL) and the Continuous Service Improvement Program (CSIP) methodology that was used to diagnose the IT services of the company. After setting this common ground, the results of the diagnostic are presented. The lessons learned are discussed just before the conclusions.

THE GREFUSA GROUP
The Grefusa Group started as one of the earliest European snack food industry organizations (Datamonitor Report, 2004), operating in the Iberian and North American markets. However, as it grew, it diversified its businesses portfolio, with units dedicated to manufacturing and distribution of snacks and sandwiches, potato dealing, vending, real estate, private jets and handling. The sales volume in 2007 was over 200 M€. It employs more than 1000 employees worldwide, 300 of which are regular IT users. The IT department is responsible for the design, development, implementation, support and management of all computer-based systems used by all business units. According to the current CIO, a deep knowledge of the distinct businesses to which IT services are delivered and a strong relationship with them is as fundamental as technological prowess. The IT organization follows a client-oriented strategy, focused on understanding user needs and objectives, accomplishing tasks with the highest leadership attitude and professional behavior, allowing a positive collaborative environment.

The current IT organizational structure was formed in 2001, to work as a central service to support the expected business growth and expansion, in a geographically distributed environment. It is divided in two basic areas: the functional and the technical support. The former is mainly responsible for the IT project management, for the approval and implementation of all the IT change requests posted by the business. The latter is responsible for the development, implementation and support of the ICT infrastructure, wherever located, and for all shared IT services that do not need functional guidance but have general objectives. The services of several technological partners (such as SAP and Dell, for example) are used to complement the in-house operations.

The IT services are organized into five types: Continuous Improvement Process, Project Management, System and Communications Support, Application Support and Help Desk.
The Continuous Improvement Process manages all IT improvements proposed by business – new processes, systems or simple modifications. The Project Management implements software or hardware solutions whose deployment takes more than 3 weeks, both starting with a formal need alert; being implemented after validation by the business manager. The Application Support service delivers functional support to the business, guaranteeing an efficient daily exploration of the corporate applications, providing operational guidance, incident resolution and user training. The System and Communications Support provide the essential knowledge for the corporate tools, as the BackOffice, collaborative environment or Help Desk, for the application and file servers, networking, data and voice communications. Finally, the Help Desk works as a single contact point between the IT department and the business, mainly by mail or web, for the users to place incidents or service requests, later organized by nature and priority.

The IT infrastructure is mainly based on normalization and centralization, to achieve as much synergies as possible, promoting availability and cost reduction. The goal is to allow all business units to reuse systems. Dell, Sun, IBM, Cisco, SAP, Oracle, Citrix, Microsoft, Lotus Notes, Vodafone, Blackberry, McAfee are part of the complex collection of systems used.

The IT management strategy at Grefusa Group is essentially supported on a careful project management and a client-oriented strategy, encouraging fast responses for all user requests or incidents. However, the increasing number of users, complexity of systems and providers, geographically distributed, request for a different IT management approach, to guarantee service excellence and client satisfaction raise, while costs are kept under control.

These concerns are shared by Grefusa Group, who is looking for new IT management models and frameworks to future implementation.

**THE ITIL FRAMEWORK IN BRIEF**

From the several IT management models currently used, IT Infrastructure Library (ITIL) and Control Objectives for Information and related Technology (COBIT) seem to be the most well known frameworks that support the implementation of effective IT processes (Callahan, 2004).

COBIT is an open model based on best practices, published by the IT Governance Institute and the Information Systems Audit and Control Association. The 3rd edition presents a worldwide commonly accepted framework to facilitate IT governance strategy implementation to an enterprise (Guldentops, 2004). COBIT is less detailed than ITIL for operational matters, yet it provides a structured high-level approach to IT governance.

ITIL (version 2) is a set of best practices for IT Service Management (Macfarlane, 2005), originally developed by the OGC - Office of Government Commerce. Later, the IT Service Management Forum became responsible for the development and improvement of ITIL. ITIL embraces a detailed set of comprehensive books describing how IT services should be managed, without imposing exactly what has to be done. The main focus of ITIL is to increase IT service quality delivered to the business, by raising IT service efficiency and IT user satisfaction (Potgieter, 2005). ITIL is considered one of the most successful initiatives among IT managers (Callahan, 2004), and is the result of a collective experience of thousands of IT practitioners around the world (Niessink, 2001).

Currently, the Grefusa Group is more concerned about increasing service quality and IT organization maturity. Broadly accepted by the industry as a de facto standard for IT Service Management (ITSM), ITIL was selected to be evaluated in detail for future implementation. Therefore, the scope of this paper is to present an ITIL Service Management implementation project in the organization. Two areas of ITIL are of greater concern in this effort: Service Support and Service Delivery.

Service Support includes the processes for managing daily IT operations that are more focused on a short term view, covering Incident, Problem, Configuration, Change and Release Management processes and the Service Desk function. The latter is the single point of contact for all IT users, responsible for incident report and service requests, for incident priority and classification procedures. While the Incident Management process goal is to restore services after incident detection, being mainly a reactive process, providing guidance to diagnostic and priority procedures required to restore services as soon as possible, the Problem Management process goal is to identify the root cause of service problems, preventing future incidents. Supporting many others processes, the Configuration Management focuses on collection, archiving and reporting of data related to every infrastructure component items, maintaining the information in the Configuration Management Database (CMDB), the repository of all IT component information, including technical attributes, ownership and relationships between them. The Change Management process manages change, at the end authorized or denied, at any IT infrastructure component, assessing risk of individual modifications and using the CMDB to identify relationships and other impacted systems, applying changes with minor impact to business. Finally, Release Management concentrates on large-scale IT changes released simultaneously to the production environment, such as installing new database management system or upgrading an ERP.

Service Delivery is the second area of ITIL Service Management, having a medium/long term view. It clearly defines the content of services, roles and responsibilities of clients (who pay for the services), users and service providers (internal or
external), managing expectations for service quality, availability and timeliness. It covers Service Level, Capacity, Continuity, Availability and Financial Management processes. The Service Level Management process is a guide to create a service catalogue, including agreements upon required service levels to support business and service costs identification. Both IT and business roles and responsibilities are clearly defined; goals and success factors for service delivery are established, measured and reported. This process ensures that the business receives suitable levels of service at reasonable cost. The Financial Management process determines the cost of the IT services, providing financial and accounting information to ensure that expenses fit the budget. Capacity Management guarantees that IT infrastructure resources are ready to satisfy business requirements and are effectively used. The process activities are proactive rather than reactive, anticipating systems bottlenecks as a result of future business volumes, to set in motion corrective procedures before service problems are actually experienced. The Availability Management process is responsible for maintaining systems running and available for use within the conditions of the Service Level Agreements, ensuring that cost effective contingency plans are put in place. Finally, the Continuity Management process supports the Business Continuity Plan, providing a framework for developing IT infrastructure recovery plans, diverging by region, since different geographical areas may have singular risks, such as earthquakes, floods or terrorist activities.

**DIAGNOSING IT SERVICE MANAGEMENT**

In order to assess the current ITSM at Grefusa, we used the Continuous Service Improvement Program (CSIP), an approach to implement ITIL Service Management framework. It includes planning and execution of several activities to identify and recommend process measurable improvements (Lloyd, 2005). The different activities included in the program are summarized in Figure 1 (Lloyd, 2005).

![Figure 1. Continuous Service Improvement Program](image)

This program embraces the following activities: Vision creation, organization analysis, goal setting, ITSM implementation and goals measurement. Since the project that we engaged involved only diagnosis and implementation proposal, the stage “How do we keep the momentum going” was considered outside the scope. The other stages are briefly described below:

**What is the Vision**

As Figure 1 shows, the first step involves defining the Vision statement for the improvement program, resuming the aim and purpose of high level objectives, enlightening future intentions and aspirations without explaining how to achieve them (Freire, 1997). The ability to manage change is also closely related to the Vision creation (Collins, 2006), and must be well communicated to establish commitment and buy-in for the CSIP, providing a strong contribute to employees performance (House, 1977).

**Where are we now**

The technique suggested by the ITIL framework to answer this question is the IT organization growth model, which determines the maturity level of the IT organization and is based on the Capability Maturity Model (Lloyd, 2005). This technique can become operational by applying the OGC self-assessment questionnaires to each one of the ITIL Service Management processes (OGC, 2001). These questionnaires enable the determination of which areas should be addressed next by the program to improve the overall process capability. As an example, Table 1 show a small part of the questionnaire developed to evaluate Service Desk.
Where do we want to be

The next activity is about the agreement between business and IT organization concerning the required characteristics of the IT function, based on the maturity assessment just completed. A gap assessment report should then be completed, in order to compare the current with the expected performance of the IT organization. The benefits and the expected outcomes obtained from maturity level increase can then be clearly illustrated. The following step is the identification of a set of quick wins, defined as an early accomplishment throughout the CSIP.

How do we get where we want to be

The main topics to be considered during a CSIP are the changes to achieve and the essential elements to deal with. Usually, organizations are unable to address individual processes without implementing others that are somehow dependent, at least if they want to achieve higher maturity levels. The identification of process priority implementation depends on the current maturity level and on the defined strategic goals. It is also imperative to be aware of the interrelationships between all the processes. Another aspect is the understanding of the vast organizational and cultural changes promoted by the CSIP, reason why it is so important to maintain top management support. New processes or working practices may emerge, certainly new roles and functions will be introduced, and traditional organizational boundaries are overlapped. This means that clear definitions of accountability and responsibility are critical to achieve a successful implementation (Lloyd, 2005). Otherwise, new processes can be confusing and employees may revert to the old working ways. The use of the A.R.C.I. model (Lloyd, 2005) may identify: THE person who ultimately hold accountability (A) for the overall process success or failure; the responsibles (R) for the correct execution of tasks or for meeting specific timelines and deliverables; the individuals consulted (C) who holds organizational and subject matter knowledge critical to the process success; the individuals who may be directly or indirectly impacted by the outcome of the process and that need to be informed (I).

Have our milestones been achieved

To evaluate the overall program performance, clear objectives must be defined, allowing a comparison between the achieved improvements and the earlier defined goals, which can be clarified by Critical Success Factors (CSF), the small number of things that must be done right on each individual ITSM process (Lloyd, 2005). They can be used to achieve the defined goals or to implement change in the Organization (Rokcart, 1986), and to support process plan or decisions related with investment priority or to broadcast the IT function to the business (Boynton, 1984). For each CSF, more than one Key Performance Indicator (KPI) can be identified (Freund, 1988), and then constantly monitored to confirm that the objectives are being achieved, and to keep the interest and motivation on the program (Lloyd, 2005). Also, the increase of users’ perception during the CSIP needs to be surveyed and measured, by conducting regular statistical surveys.

THE ASSESSMENT RESULTS

The results of the CSIP assessment at Grefusa Group will be now presented: the Vision, the current and the expected maturity levels of the IT organization, the required organizational and cultural changes to be encouraged at Grefusa Group.

What is the Vision at Grefusa Group

The current Vision for the IT organization is to:

- Be responsible for defining and implementing all IT systems and services, guaranteeing availability and efficient exploitation;
- Guarantee that IT services match business needs;
- Have a deep understand of all business activities;
- Maintain a close collaboration with IT clients;
- Be more than a simple IT supplier.

Table 1. Service Desk Questions

<table>
<thead>
<tr>
<th>Level 1</th>
<th>Y</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does a Service Desk exists which manages, co-ordinates and resolves incidents reported by customers?</td>
<td>(M)</td>
<td></td>
</tr>
<tr>
<td>Is the Service Desk the recognized point of contact for all customer/user queries?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does the Service Desk provide information to customers regarding planned changes?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 1 other answer.
Where are we now

The eleven self-assessment questionnaires were answered. Table 2 show an example of the vast task carried out to get all the results.

<table>
<thead>
<tr>
<th>Level 4</th>
<th>Y</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does Change Management provide pertinent information concerning:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>requests for change received?</td>
<td>X</td>
<td>(M)</td>
</tr>
<tr>
<td>change schedule?</td>
<td>X</td>
<td>(M)</td>
</tr>
<tr>
<td>number and % of changes?</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>number of successful and failed changes?</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>number of problem record initiated changes?</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

Minimum score to achieve this level: ‘Y’ for all mandatory (‘M’) questions + 2 other answer “Y”

Table 2. Change Management Questions

The individual results were compiled to evaluate the overall maturity level of the IT organization as seen in Table 3.

The results clearly show that Service Support processes are on a higher level (2) than Service Delivery processes (1). This might indicate that IT services are mostly reactive and less concerned with medium-long term measures, supported by a Service Desk strongly recognized as the single point of contact between business and the IT organization. The Change Management process is clearly above the average, which can work as an excellent support for the CSIP. Service Delivery processes are still at an earlier maturity stage, with two of them at a level 0: Service Level and Continuity Management processes. This last process works as a support for the Business Continuity Plan, currently inexistent at Grefusa Group.

![Maturity Matrix]

Table 3. Overall maturity process level at Grefusa Group

Where do we want to be

The maturity level for the IT organization expected by the business for the medium-term is the “Client Focus” level (3), rising to a “Business Focus” level (4) in the long-term. However, simple tasks can be addressed right away in order to narrow the gap against the expected maturity level. These tasks were identified by analyzing the negative answers of each individual questionnaire. The accomplishment of each item may contribute to keep the CSIP on run by increasing the morale of everyone involved. For example, one of the gaps identified by Incident Management questionnaire was the absence of “a
procedure for classifying incidents, with a detailed set of classification, prioritization and impact codes”. This mandatory task, when successfully achieved, will certainly give a strong contribute to increase Incident Management process maturity. The complete gap list was delivered to Grefusa Group CIO, as part of the implementation plan.

How do we get where we want to be

To implement the CSIP, the Organization must clearly understand the IT function and characteristics, having the ability to predict the future without the CSIP, in opposition with a future after a successful CSIP.

The single process approach is used to improve one process at a time, and the 4th and 5th level are still too distant to apply the all-process approach (this seems to be the only successful approach at higher maturity levels), so it was recommended to adopt the multi-process approach. Still, some mistakes must be avoided, and recommendations that should be followed (Lloyd, 2005): Service Desk and Incident Management together can accomplish dramatic service improvements; Problem Management allows the identification of multiple areas causing great ‘pain’ to the Organization; Incident Management must be implemented at the same time or before Problem Management; Release Management needs the Configuration Management process in place, which imply the existence of a CMDB.

The implementation priority of the individual processes was divided in three phases, as shown in Table 4.

<table>
<thead>
<tr>
<th>Service Support</th>
<th>Configuration Management</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Incident Management</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Problem Management</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Service Desk</td>
<td>Average</td>
</tr>
<tr>
<td></td>
<td>Release Management</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Change Management</td>
<td>Low</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Service Delivery</th>
<th>Service Level Management</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Financial Management</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Availability Management</td>
<td>Average</td>
</tr>
<tr>
<td></td>
<td>Capacity Management</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Continuity Management</td>
<td>Low</td>
</tr>
</tbody>
</table>

Table 4. ITIL Implementation – Process Priority

A higher priority was assigned to processes with the lowest maturity level. Concerning Support Service, the exception was the Configuration Management process, because of the many relationships with other processes. A lower priority was associated to Change Management, since already has the highest maturity level. In Service Delivery, the highest priority was given to Service Level Management process, because of the importance to the Organization itself and as result of his lower maturity level. To Continuity Management process was assigned lower priority, since the Organization has not a Business Continuity Plan. High priority was also given to the Financial Management process, to obtain cost efficiency/reduction, underpinning this process to top level management from an early stage. Phase I processes can be observed at Table 5.

<table>
<thead>
<tr>
<th>Configuration Management</th>
<th>Incident Management</th>
<th>Problem Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Level Management</td>
<td>Financial Management</td>
<td></td>
</tr>
</tbody>
</table>

Table 5. ITIL Implementation Phase I

As part of the plan presented to the Organization, A.R.C.I. model authority matrixes were identified. The owner (A), the task executants (R), the experts (C) and the individuals who experience any impact by process improvement were identified (I). The A.R.C.I. matrix table for Service Level Management processes is presented at Table 6.
Finally, a list of CSF and KPI was compiled. This list must be periodically reviewed within the scope of the CSIP, adding relevant and disregarding obsolete factors and indicators. For the Incident and Service Level Management processes two CSF and six KPI are presented at Table 7 and Table 8, with the associated aim (increase or decrease). The complete set was delivered to Grefusa Group, again as part of the ITIL implementation proposal.

<table>
<thead>
<tr>
<th>CSF</th>
<th>KPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quickly resolve Incidents</td>
<td>Average time to respond to a call for assistance from first-line personnel</td>
</tr>
<tr>
<td></td>
<td>Incidents resolved by first line personnel</td>
</tr>
<tr>
<td></td>
<td>Incidents resolved within agreed response times by impact code (in SLA)</td>
</tr>
<tr>
<td>Maintain IT service quality</td>
<td>Service time unavailability caused by Incidents</td>
</tr>
<tr>
<td></td>
<td>Incidents solved before users notice</td>
</tr>
<tr>
<td></td>
<td>Incidents reopened</td>
</tr>
</tbody>
</table>

Table 7. Incident Management CSF and KPI

<table>
<thead>
<tr>
<th>CSF</th>
<th>KPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manage quantity and quality of IT services required</td>
<td>SLA targets missed</td>
</tr>
<tr>
<td></td>
<td>SLA targets threatened</td>
</tr>
<tr>
<td></td>
<td>Customer perception of SLA achievements via surveys responses</td>
</tr>
<tr>
<td>Deliver service as previously agreed at affordable costs</td>
<td>Number of SLA (fully documented)</td>
</tr>
<tr>
<td></td>
<td>Number of SLA agreed against operational services being run</td>
</tr>
<tr>
<td></td>
<td>Service Delivery Costs</td>
</tr>
</tbody>
</table>

Table 8. Service Level Management CSF and KPI

**DISCUSSION AND LESSONS LEARNED**

The self-assessment instrument provided by the CSIP is one of its major strengths. It provides a clear indication of the maturity of the various processes when diagnosing the “as is” situation. On the other hand, although CSIP provides some indications regarding the ITSM processes to deploy, there are no clues to the sequence in which they should be addressed. While dependencies between processes are alluded, an in-depth discussion on this issue is missing; nevertheless, by the same reason, some room for innovation is offered to organizations. The existence of scenario-based guidelines, for different
starting maturity profiles, as they are diagnosed, would be highly helpful for the improvement endeavors. This type of knowledge may be gathered from studies such as the one presented in this paper.

When approaching ITSM improvement projects, it is also important to keep in mind that, although the focus is on IT services, there are implications on other areas of the organization. Decisions regarding Continuity Management and Financial Management are strongly dependent on overarching company policies on these subjects.

Also worthy of notice is the fact that organizations tend to focus on the Service Support facet of ITIL, due to its emphasis on solving the more immediate afflictions. However, to address the root causes and progressively alleviate everyday problems, the improvement of Service Delivery processes should not be neglected, even if the return is only felt in the longer term.

It is important that the team understands the need for close collaboration, and approaches the project from a holistic perspective, so that appropriate standardizations of procedures can be put in place instead of dealing with separate issues in a piecemeal manner. CSIP also stresses the importance of managing cultural issues during the program, although no specific indications are given on how to address them.

Finally, we found out that besides identifying the right metrics to assess project evolution, it is also important to deploy tools to automate the processes and the collection of the needed data, to ensure timeliness and efficiency.

CONCLUSIONS

We described a project in which the ITSM of a multi-national corporation was diagnosed and a roadmap for ITIL implementation was defined.

We started by presenting the Grefusa Group and its IT organization, infrastructure and the services delivered; the views for the future IT service delivery were also considered. The CSIP methodology was used to diagnose the IT services: the Vision was presented; the current IT maturity was measured by means of the self-assessment questionnaires for each ITIL process; by comparing the results with the intended goals, the gaps were identified; a set of CSF and KPI adapted to the organization was identified, to measure constantly process performance and to confirm if the desired service quality improvements are being achieved; a strategy based on a multi-process implementation approach was selected, the process priority implementation defined and an A.R.C.I. model authority matrix was presented to all ITIL processes.

This project shows an overall image of the elements involved in an ITIL Service Management implementation, mostly, related with organizational and cultural changes, implying a large adaptation effort, as result of the continuous business and technology evolution. The ITIL framework may inspire organizations to look further the daily IT operations and to pay attention to elements that can result later on competitive advantages to the business itself.

A great challenge for the future would be the ITIL project implementation. The improvements achieved by the CSIP should be analyzed and the user/client IT service satisfaction evolution throughout the time should be measured.

REFERENCES


