DEVELOPMENT OF AN ALLIANCE OF IT COMPANIES

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The appraisal of service management by external bodies is an ubiquitous norm for the IT companies. The certification of IT service management, regarding the fulfillment of quality norms and standards, represents an important argument for the maturity achievement of the company, leading to an increased confidence of the customers. The paper aim is to present the particularities of the ISO 20000 certification in the case of an extended IT services alliance/ environment consisting of several non-related companies. The certification goal is to provide standardized predictable support services with economic efficiency imposed by the current market conditions and tough competition. It insures also a unitary operating style and culture inside the alliance. The implementation steps of the Integrated IT Service Management System are presented, emphasizing the benefits for the organizations as well as for their customers. The main conclusion is that the adoption of ISO 20000 management principles represents a key instrument in the delivery of uniform quality of services across an alliance of companies distributed geographically.

Keywords: ISO/IEC 20000, alliance, IT service, quality, economic efficiency, management.

1. Introduction

Generally, the ensemble of procedures and activities carried out inside an organization in the aim of planning, delivering, operation and control of services pertaining to the domain of Information Technology, IT, represents a management area, usually called IT Service Management, ITSM. The main role of the ITSM is to accomplish IT services having the quality level that meet the needs of the customers, and is accomplished by an ITSM System, ITSMS [1].

The growing importance of IT infrastructure and Information Systems, as important means to support business processes and transactions in the modern companies, increased the concern to improve the management of IT services, simultaneously with service quality.

The principle of the modern IT service standardization is based on the transfer of the methods used in the management of industrial production to the delivering, operation and control of IT services.

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From reasons of brevity, in what follows, there will be used only the abbreviation ISO when referring to ISO/IEC standards.

In the last decades, the standardization developed extensively, particularly in the field of hardware, HW, and software, SW, production. In the field of IT services, there is expected the same level of standardization [2]. The main standards regarding the IT services are ISO 9000 series - addressing the quality of services, ISO 20000 - on ITSM, and ISO 27000 - on IT systems security. Besides these standards, there are also several well-known international norms and methodologies of quality and good practice in the domain of IT services, among which the most important is the Information Technology Infrastructure Library, ITIL [1]. The standard ISO 20000, the first international standard establishing the norms of performance for ITSMS, is originating from principles of ITIL and is tightly correlated with the families of standards ISO 9000 and ISO 27000, respectively [3].

Traditionally, the company certification regarding the fulfillment of ISO standards and ITIL norms requirements is performed individually, due to the market competition [2 - 8].

A trend that has been developed, in the business environment, is the construction of strategic alliances between companies. The IT infrastructure and IS capabilities are recognized as important instruments in supporting the alliances between companies [9].

Strategic alliances are partnerships in which two or more companies work together, jointly investing in common activities, sharing resources, information, capabilities and risks, to achieve objectives that are mutually beneficial, but remaining independent economic entities [10]. By grouping into alliances, the IT companies can gain a dominant competitive advantage in new markets, lower cost, better knowledge, and better IT infrastructure access. The customers of complex IT projects became conscious that in present days no single firm can appropriately satisfy the ensemble of their requests. The unique provider model has become too expensive and uncertain, given the number of areas of expertise that are now required on a single project. Well equilibrated alliances provide the customers access to better and more powerful IT infrastructures, as well as better capabilities, providing better chances to successfully accomplish the complex projects [11]. Alliances take different kind of cooperation and resource sharing: limited or general partnerships, cooperation contracts, corporate joint ventures, or less formal agreements, like reciprocal transfer networks. In the IT domain, the alliances represent also a way to increase the IT infrastructure flexibility [12].

2. Objective and method of research

The certification of IT service management systems represents an important argument for the maturity achievement of companies, confirming the fulfillment of quality norms and standards and ensuring an increased confidence of customers.

The objective of the present research is to determine the main methodological elements concerning the development of IT companies alliances.

The research method has been conceived and applied based on the synergic evaluation of theoretical development with regard to reference elements and real life implementation associated to an IT companies alliance, i.e.: synthesis of main standard requirements as reference elements; defining the general structure of alliance; argumentation for the need of alliance; stipulating responsibilities in alliance; unrolling certification process in alliance; continuous service improvement in alliance.

3. Reference standard requirements for IT services

The integration of operating style and culture represents an important issue in alliances, particularly for small organizations. The best solution to the issues of alliance operating style and culture integration is the adoption of a set of international standards and/or norms of good practice by all the alliance partners.

ITIL and the principles of good practice in IT services

ITIL represents a guidance reference model, including a collection of procedures and practices, ensuring a highly efficient IT service management. The ITIL is recommending norms for the main IT service supply processes, as well as associated tasks and responsibilities. It is largely considered as a reference model designed for identifying, planning, delivering and maintaining IT services. Due to its large accessibility and suitability, ITIL has become the most widely accepted approach to IT service management in the world. ITIL is structured in five sections, corresponding to the five service lifecycle phases [1]: Service Strategy, Service Design, Service Transition, Service Operation and Continual Service Improvement, each of these with specific processes.

ISO 9000 and ISO 20000 standards

ISO 9000 is a family of standards addressing the service quality management aspects and includes several of most frequently used ISO standards [13]. ISO 9000 provides guidance and tools for companies, in the assessment of the degree of conformity of their products and services with customer's requirements [14, 15].

The ISO 20000 standard structure and principles are founded on the ITIL reference model and the British standard BS 15000, being first published as ISO/IEC 20000-1:2005, which was updated twice, last time to ISO/IEC 20000-2:2012 [16].

ISO 20000 provides the principles and requirements of standardization in the field of IT services and has quality management approaches similar to ISO 9000. The main emphasis of the management activity is put on the fulfillment of customer expectations regarding the cost and quality of services. This is accomplished by a specific set of five principles and instruments: *Standardization, Customer focus, Process orientation, Continuous improvement* and *Alignment to well-known approaches.*

The implementation of the standard ISO 20000 in an organization and its certification is based on the accomplishment of a set of requirements as follows.

i) Involvement of the management responsibility. The top management of the organization has to provide, by guidance and actions, the necessary resources and support to implementation project planning, objectives, execution, service management system (ITSMS) operation, monitoring, maintenance and improvement.

ii) Governance of processes operated by other parties. The IT service providing organization shall administrate suitably the processes which are totally or partially operated by other parties (quality, accountability, performances).

iii) Documentation management. The organization has to provide an adequate set of documents ensuring an efficient operation, monitoring and control of the SMS, as well as the responsibilities for documents change, approval and circulation inside the organization.

iv) Resource management. The service provider has to establish and insure the financial, technical and personnel resources needed to create, implement, maintain and continually improve the ITSMS.

v) Establish and improve the ITSMS. The service provider shall define a service management plan, defining the management system objectives and the characteristics of services to be delivered. The accomplishment of the requirements regarding the design, elaboration, implementation, operation, monitoring, maintenance, analysis and improvement of ITSMS and of services are based on the 'Plan-Do-Check-Act' methodology, proposed by Deming [8].

The management processes defining the ITSMS role in the activities of service design, delivery and continual improvement are grouped in five categories: Service Delivering Processes, Relationship Processes, Incident and Problem Resolution Processes, Service Control Processes and Service Release Processes, each of these with specific components (Fig. 1).

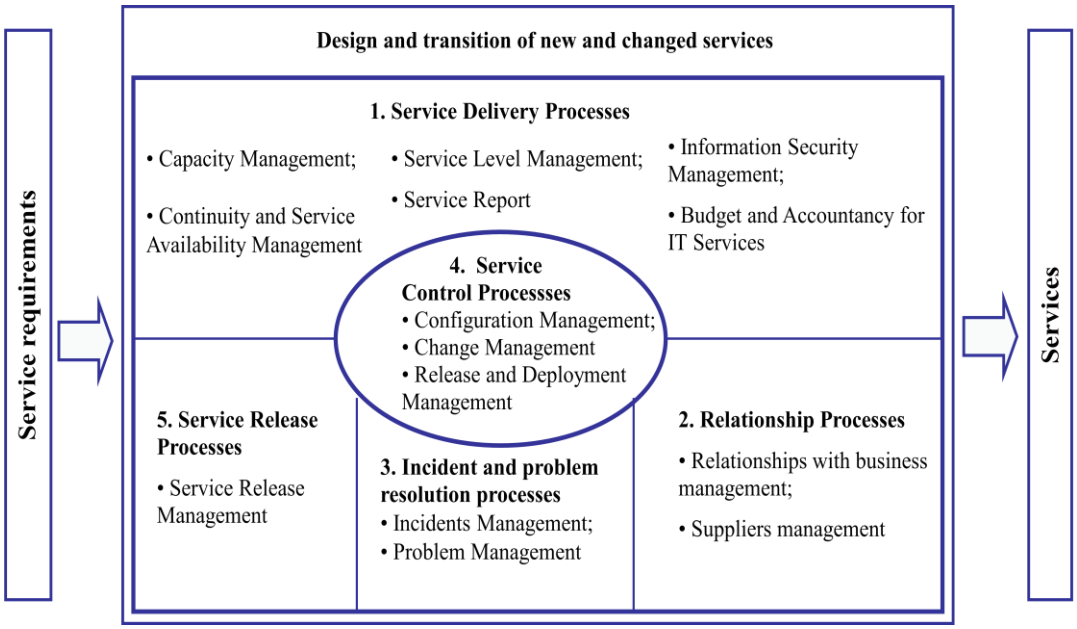

Fig. 1. The processes involved in the service management system (adapted from [16])

4. Relevant matters associated to an IT companies alliance development

4.1. General structure of an IT companies alliance

Let be an IT *companies alliance* as A, its components - AX_i, $i = \overline{0, n}$, among the IT *integrator company* is AX_0, the IT *local companies/ service points* or other organisations - AX_i, $i = \overline{1, n}$, and their relationship:

$$A = \{AX_i \mid i = \overline{0, n}\}, n \in \{1, 2, \ldots\} \quad (1)$$

equivalent to:

$$A = \{AX_0, AX_i \mid i = \overline{1, n}\}, \; n \in \{1, 2, \ldots\} \quad (1')$$

The methodological elements for the development of an IT companies alliance have been designed and implemented based on a real case, as follows.

Let A and AX_i, $i = \overline{0, n}$, be used for the names of the IT companies alliance and its components, respectively, in the considered real case, because of confidentiality reasons and, also, in order to assure a high level of generality.

4.2. Relevant arguments for an IT companies alliance

The IT *integrator company*, AX_0, with headquarters in Bucharest, is one of the IT system integrators and services providers, acting on the Romanian market. As a full life cycle service provider, AX_0 helps its customers to design, implement, integrate, manage and continually improve information systems and IT solutions. The company brings value mainly through its services, the human resources as well as its processes and procedures being the main assets and differentiator against competition. Main AX_0 customers are large private companies and public institutions. The services are offered both traditionally, i.e., consulting, implementation, support, or by taking over entire responsibility for complete categories of services – out-tasking or outsourcing. AX_0 is constantly adjusting its offer and adapts its portfolio of solutions and services in order to anticipate the business needs of the customers. Most of the AX_0 customers have a business structure distributed all over Romania. The geographic distribution typically covers Bucharest and the 41 county seats, sometimes including smaller towns, even petrol filling stations or remote exploration sites.

According to Service Level Agreements, SLAs, toughest customer requirements for critical incidents are 30 minutes response, 2 hours onsite presence, with committed workaround/ resolution/ repair times, these resulting from IT service availability imposed by their internal customers, generally the business lines. Based on ITIL recommendations and financial considerations, the maximum allowed downtime is calculated taking into account the costs generated by the downtime - monetary, image, etc.

In order to serve the customers according to SLAs, distributed IT *local companies* as *service points*, AX_i, are needed, which are independent specialized IT companies, acting, from commercial perspective, as sub-contractors of AX_0. Operationally, they are integrated in the AX_0 delivery structure. This alliance of companies is aimed to ensure the same quality level of the delivered services all over Romania, as well as optimized utilization of the remote service points specialists.

4.3. Responsibilities in an IT companies alliance for service delivery

(i) Responsibilities of the IT *integrator company*, AX_0, as IT service coordinator

- Overall service management, i.e., IT support and implementation processes
- Technical leadership, subject matter experts
- IT/ support systems, i.e., call management application, knowledge base, etc.
- Call Center
- Remote support.

(ii) Responsibilities of the IT *local companies*, AX_i, as IT *service points*

- Local service management
- Onsite support
- Local spare parts management.

The customers' calls and requests are transmitted directly through the web interface or notified to the call center agents via phone, email or fax. The treatment of customer calls applications are so designed to optimize the use of existing resources and capabilities. Considering the nature of addressed problems and incidents, the customer requests are treated in a structured hierarchy, and the corresponding services are grouped in a set of tiers as illustrated in Fig. 2.

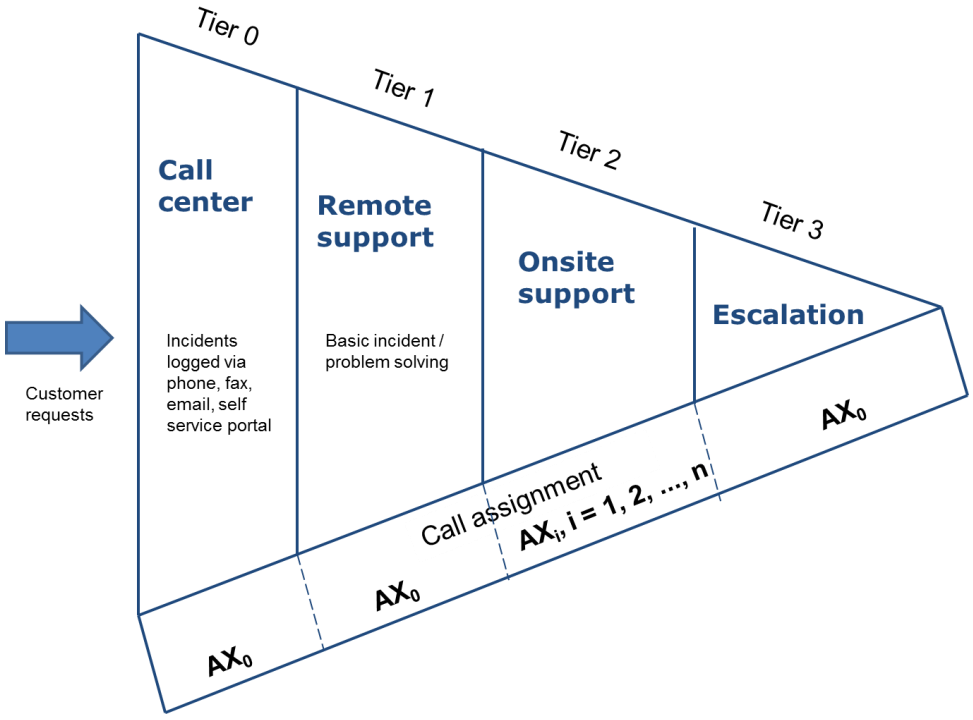

Fig. 2. A hierarchy of customer requests treatment in the alliance

The service management is so designed to maximize the number of requests solved by the lower tiers, as follows.

Tier 0. Call center, related to customer calls management, so that, all incidents, signaled by phone, fax, email, self-service portal, are logged in the *Call Management Application* directly by the user when using the self-service portal or by the call center agents for the other notification methods.

Tier 1. Remote support, for low complexity activities, and basic incident/ problem solving.
Tier 2. Onsite support, for activities that require onsite presence, HW replacement and repair.
Tier 3. Escalation, for technical escalations, interface with HW/ SW providers.

To achieve the quality demanded by the customers, it is essential to have unified and consistent operation procedures in all involved companies, in a frame ensuring that the most suitable communication channel and resource are used to solve an issue. These unified procedures were designed and implemented based on ISO 20000 standard and ITIL reference model principles, in an Integrated IT Service Management System, IITSM, across the A alliance companies (AX_i, $i = \overline{0, n}$).

4.4. Certification process in an IT companies alliance

Background

The main driver for the implementation of the IITSM across the given group of companies is the market demand to supply quality services all over Romania, with an uniform SLA at competitive prices. The approach of an alliance instead of a single entity has strong motivation for all the parties involved:
(i) IT *integrator company,* AX_0, as the system integrator, prime contractor and service coordinator, is able to cover all the territory, with own designed services – same as provided by own employees. By the alliance approach, there is a cost advantage versus classic approach, as there is no need to cover the complete utilization of the local service engineers. The aim is to transform as much as possible the fixed salary costs into variable ones, i.e. pay per use model.
(ii) From the perspective of IT *local companies*/ *service points,* AX_i, the proposed setup ensures professional development, both technically and operationally, for their engineers. The capability level and operational procedures of local companies is aligned with those of a highly developed company, bringing market recognition and possibility to charge premium prices. Additional utilization to the delivery team is another benefit for them.

Certification Process Setup

The certification process was initiated by IT *integrator company,* AX_0, The partner IT *local companies/ service points*, AX_i, were chosen based on the previous cooperation and the market reputation. An important pre-requisite for the local service companies was the maturity of their service process proved by an implemented Quality Management System (ISO 9001) in place.

The immediate advantage of the adherence to the alliance is the implementation of an ITSM (complying with ISO 20000), with one of the recognized System Integrators.

The Certification Holder is the IT *integrator company*, AX_0; still it includes all the services partners and subcontractors 100% compliant with AX_0 internal service procedures and processes. For each of the IT service partners, AX_i, the alliance is formalized by a frame contract with AX_0, including all the relevant procedures and documents regarding the certification.

The certification process is supervised by a *steering committee* formed by the General Management of all Alliance companies, AX_i, $i = \overline{0, n}$, as well as by a *Program Manager* appointed by the system integrator (Fig. 3). From operational point of view, the Program Manager is chairing the project coordination committee, with members from each of the alliance companies. Typically, the representatives of the local companies will be the Technical/ Services Manager and the Quality Management System Representative. The prime contractor will be represented by several members: Delivery Manager, Operations Manager, Integrated Management System Representative, Procurement and Logistics Manager.

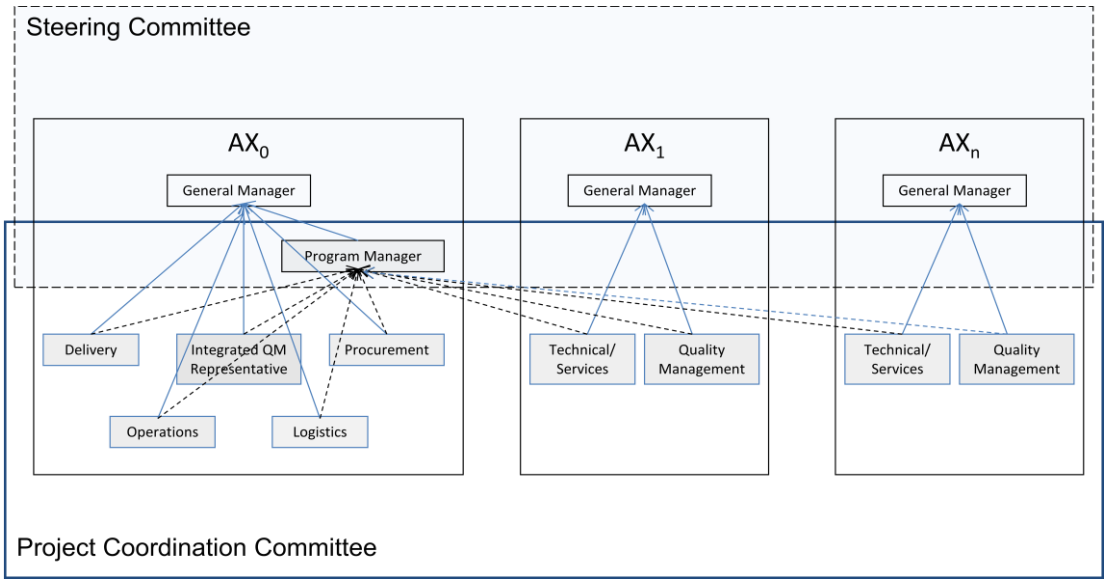

Fig. 3. The structure of certification process steering committee

There are scheduled weekly meetings/ calls for operational matters. Steering committee is supposed to meet for the important milestones of the project - Start Up, Internal Audit, External audit, and in case of escalations. A *Project Plan* is proposed by the project committee and approved by the steering committee.

The main project objectives were the implementation of the IITSMS and the continuous service improvement process (ongoing).

From a management perspective, the main steps of the project were:
- to establish the key objectives based on the vision;
- to assess the current baseline;
- to establish measurable targets based on the objectives;
- to implement the process changes;
- to measure the improvements against the targets set.

From an operational perspective, the implementation consisted of:
- Services structure definition based on the existing best practices;
- Detailed description of the new service processes structure and control, i.e., assessment of the current situation and identification of the existing gaps, comprehensive documentation, definition of the key performance indicators, KPI, measurement procedures, KPI targets and reporting procedures;
- Configuration of the IITSM Application in order to support the new processes. Definition of the user groups and roles, Configuration Management Data Base, CMDB, integration;
- Trainings for the impacted areas, i.e., ITIL trainings, at practitioner level, and Services Management Application trainings;
- Audit of the implementation, i.e., Internal Audit, performed by the internal Project Committee, and External Audit, performed by an independent ISO Certification company.

The considered methodological elements have been implemented to the A alliance based on IT *integrator company*, AX_0. The accomplishment of the objectives took about one year, Internal Audit was planned and executed during one month, the External Audit and Certification - next month, and re-certification – in next later year, which proved the sustainability of the project.

4.5. Continuous service improvement process

From operational point of view, the project coordination committee comprising all alliance companies representatives was not dissolved, but kept responsible with the live support of the IITSM. It was agreed to schedule quarterly meetings of the committee, in order to analyze the issues occurred in the due time and the potential of improvement.

The committee is also in charge with the yearly re-certification audit as well as with all adjustments and change requests resulting from requirements of new tenders or contracts won by the alliance in the meantime.

The successful certification and re-certification have proved the sustainability of the project. Several documented and implemented security procedures have the aim to certify with ISO 27001 in the near future.

5. Conclusions

An alliance of IT companies has been created and its main characteristics are revealed in the present work.

The implementation of the ISO 20000 and ITIL in the considered IT companies alliance and the integrated ISO certification process conduct to important direct and indirect benefits: the advantages of the accomplished IITSM built in alliance; the ground for competing the incumbent service providers in most of the relevant IT services tenders; a proven distribution and service channel via the IT integrator company and its alliance partners for the technology providers; the knowledge which was generated brought value for all the parties impacted by the process; by accomplishing the certification process, the local companies gained professional prestige and better positions on the market.

The costs and resources required by the certification process, supported mainly by the IT integrator company, are compensated by the obtained results and the better potential created by Alliance construction. There are always discussions on the direct impact of the ISO certification on the advantages mentioned, but irrespective of the share of the benefits allocated to the process, it pays off on the long run.

Several difficulties encountered during the ISO 20000 implementation: alignment with a significant number of different service companies, with various backgrounds and company cultures proved to be a challenging task; a resistance to change, due to additional administrative burden for the technicians determined by ISO documentation; additional effort for customization of the service management tools in order to be compliant with ISO processes.

The certification is a confirmation, from a neutral auditor, that the services provided by the alliance are uniform and according to the market quality standards.

From an academic perspective, this work brought contributions to: the development of an original approach to implement an IITMS certified ISO 20000, over an alliance of companies and confirmation of its feasibility and efficiency; development and extension of existing ISO 9001 processes in order to comply with ITSMS principles of ISO 20000 and ITIL, in an alliance of IT companies.

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