NOEMI, a collaborative management for ICT process improvement in SME: experience report

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Abstract

This paper relates to an R&D project – called NOEMI[1] – aiming to propose to SME's a collaborative management of their respective information systems in terms of quality, reliability and cost. The targeted SME are those without IT dedicated internal staff.

The model developed in the project focuses on the usual IT activities of the SME's, which are classified in five domains: infrastructure, support, management, security, and documentation. The NOEMI model has been successfully experimented with PME partners for validation purpose.

This paper insists on the experimentation of the NOEMI model. The results are discussed and compared with other classical solutions usually encountered within IT practices of SME's. The last part of the paper draws the perspectives opened with the model according to the results of its experimentation.

Keywords

IT Service Management, collaborative management, SME, process assessment, process improvement.

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[1] Nouvelle Organisation de la Maitenance et de l'Exploitation Informatiques

1 Introduction

It sounds obvious that SME's competitiveness is more and more linked to the quality and the reliability of their information systems. Nevertheless hiring an IT dedicated staff is often discouraged due to the small size of the IT infrastructure of the SME's. The NOEMI project addresses this critical issue for the SME's and has developed a relevant solution to bridge the gap between the mandatory need of quality in IT infrastructure of the SME's and the dramatic lack of internal skills. The solution is based on the creation of clusters of SME's aiming to increase IT infrastructure volume. The global IT activities within the clusters is then manageable in a collaborative way, which can lead to higher quality and reliability as larger IT departments would provide.

This paper reviews briefly the NOEMI collaborative model developed by the Centre Henri Tudor, its validation by a case study, its positioning regarding alternative solutions and at last, as conclusion and perspective, the transfer of the research results to the market.

2 The NOEMI model

The NOEMI model relies on partners, gathered in clusters. A common dedicated operational team performs their IT activities and is managed on a regular basis by an IT Coordination Committee (the CCI).

Figure 1 illustrates the organisational frame of the model.

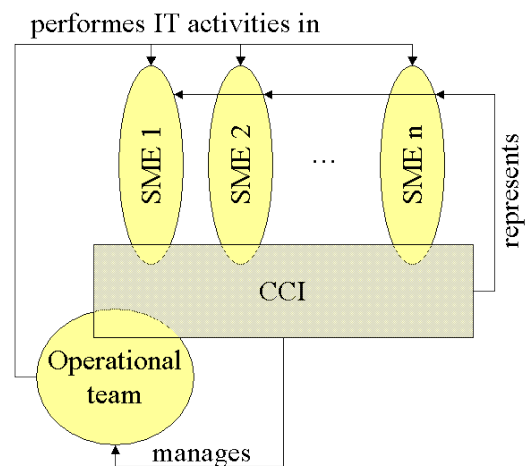This chapter explains the references used to create the model, the openness of the cluster and its management.

Figure 1: Organisational frame of the NOEMI model

2.1 The baseline and the references

The NOEMI model is built on 5 areas:

1. Management,
2. Service Support,
3. Infrastructure,
4. Security,
5. Documentation.

These five areas include 20 processes tailored for use a SME environment [1]. For each area, a set of activities are defined, performed by the operational team and controlled by the CCI.

Development has been partially inspired by ISO/IEC TR 15504 [2] and ITIL [3, 4, 5 and 6].

2.2 Constitution of SME's clusters

The NOEMI model allows the increase or decrease of the number of SME partners in a cluster. Before a new SME joins the cluster, a capability profile of each area is defined according to a specific as-

sessment method developed in the NOEMI project [7].

The NOEMI assessment method is directly inspired by ISO/IEC TR 15504 [2].

This assessment analyses in depth the weaknesses and the strengths of the 20 processes defined in the model and defines a capability profile of the 5 domains. A list of pragmatic improvement actions to take according to urgency and impact is proposed.

The results of the assessment are used as a reference for the IT operational team for the first steps when the new SME is entering the cluster.

2.3   Evolution of the IT Infrastructure

Following the recommendations, a lot of changes and manpower are required to implement the most urgent and important activities. This phase, called "Up To Date Phase" will take from 6 to 9 months.

The stabilization phase will then start.

It is to notice that, in this phase, the number of incidents will decrease in opposition with the number of requests, which will get higher.

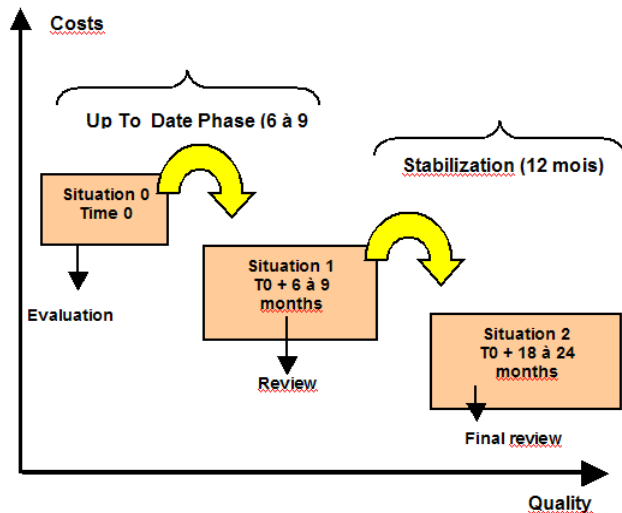Figure 2 illustrates the main phases in the model implementation.

Figure 2: Implementation phases of the NOEMI model

2.4   Management of the SME Clusters

After assessment and depending on the improvement actions agreed with the SME, the operational team will handle all activities and the 20 defined processes. A particular focus is put on incident management, change management and configuration management assumed as the most critical IT processes in SME's [8].

The operational team provides manpower for the activities needed to improve the capability level of each area. The size of the team is linked to the global IT infrastructure of the cluster and includes both technical staff and project leader. Team members are qualified (IT or project management), can act autonomously, and have strong relationship skills.

The operational team is managed the CCI where a representative manager from each SME stands. The main objectives of this committee is to ensure:

- the coherence between the cluster and the own objectives and strategy of each SME,
- the convergence of IT improvements,
- the evaluation of preventive and corrective actions.

The committee bases its management action on a balanced set of indicators within financial, partner's satisfaction, activity efficiency, and people skills [9].

Moreover, the capability profile of each SME is followed up on the basis of the assessment and reviewed on a regular basis (6-12 months).

3 Case study and validation

The model NOEMI, as shortly described above, has been validated through a case study. This chapter focuses on this experimental validation according to three perspectives: economic health of the experimental cluster, its management and the satisfaction of the SME's of the cluster.

3.1   Economic health of the cluster

The financial management of the IT activities within the cluster is based on the balance between the costs and the charges. The total cost is the sum of the IT staff charges, travel costs of the IT staff, training, equipments (laptop, mobiles, etc.), and miscellaneous charges (phone call, Internet access, etc.)

In the case study, no benefit is down because the cluster is the ownership of the SME.

This total cost is transparently financed by each SME of the cluster and is apportioned to their IT infrastructure, according to an empirical calculation. Each server has a 10 points value, each PCs has a 1 point value on which 20 points are added to enter the project. The point represents a certain financial value. With this simple and clear calculation, the SME's know exactly how much their IT service will cost on a monthly basis and on an annual basis. Here under, the main advantages related to the economic health of the cluster:
- budgeting becomes very easy,
- hardware and software investment gets also easier as the inventory helps efficiently in making the decision,
- the workload related to IT activities has been reduced for the staff of the SME's, they can focuses more efficiently on their business,
- business productivity of the SME's increases according to the better resolution of end-user incidents,
- some of the SME's of the cluster invest more in the IT activities than before.

3.2   Management of the cluster

All SME partners meet together – through the CCI – with the project team, on a monthly basis, to discuss the results of the past month, projects in the coming weeks and months. This monthly meeting is a core activity in the project. This tight relation, the confidentiality of the activities and the complete visibility on the cost (who is paying what) is a very strong point in the success of the project.

A tool is used to follow the incidents during their whole life cycle. Changes are tracked as well as assets; reports on the activities are available on-line. The planning is also published so any one knows where operates the IT team. This openness positively drives the trust among the partners.

On the same area, for all the software's, email system and configurations, it is tended to use common procedures in order not to reinvent the wheel with new products, therefore, to avoid new incidents and new problems or bugs to handle.

On another hand, after sharing IT skills, sharing IT equipments has been mentioned. The issue is that SME are not ready to have data out of their offices due to a fear of stolen or misused data. Evermore the price of the leased lines is still very expensive and the SME's of the cluster can't afford such an extra cost.

3.3   Satisfaction evaluation

A satisfaction survey is performed monthly (during the CCI) and a close relation is kept with the

SME's.

Monthly, 40 questions about the quality of the intervention, the speed, the feedback, the overall satisfaction from the users, the feeling from the IT contact in the company, the effectiveness and efficiency in interventions are asked to the partners.

Activities are quoted "Not", "Partially", "Largely" and "Fully" performed. The results from the survey on the 9 past months give an average for each 14 questions between "Largely" and "Fully". This overall satisfaction is very good indicator for driving the experimentation. This indicator has a direct impact on the number of SME's in the cluster.

4 NOEMI positioning among other solutions

The positioning of the NOEMI model regarding different way of IT exploitation on the market is made by a SWOR analysis.

This analysis is based on experience returns within 68 SME's contacted through different projects managed by the Centre Henri Tudor.

Solution	Strengths	Weaknesses	Opportunities	Risks
Sourcing of the IT activities of a SME's cluster to a common IT team, with a collaborative management (NOEMI model)	Cost directly bound with the IT staff charges and under control. Priorities are managed regarding business needs. Focus on results. No direct dependency of IT service providers.	Issue on being always up to date with the new technologies. Tooling is mandatory and is an extra cost.	Other enterprises resources can be shared regarding new business activities (manpower, tools, equipment sharing)	Overload: time spent by the IT staff can't exceed the time allowed for each partner. Overcost: time effectively needed for IT activities is under the available manpower
Sharing of a common IT staff in an organisational structure owned by a group of SME (time sharing) (Synergie project[2])	Cost directly bound with the IT staff charges and under control. No direct dependency of IT service providers.	Issue on being always up to date with the new technologies. Medium quality of the service. Tooling is mandatory and can get very expensive (maintenance fees, evolution, hardware..). Focus on means, not on results.	Other enterprises resources can be shared regarding new business activities (manpower, tools, equipment sharing)	Overload: time spent by the IT staff can't exceed the time allowed for each partner. Overcost: time effectively needed for IT activities is under the available manpower.
Buying a pool of hours from an external IT service supplier	Cost limited and controlled	Strong dependencies with the IT company. SME's generally wait the last minute to call and it is often too late or the con-		IT company not paid regarding the quality of its intervention but accordingly to the time spend to solve the problem.

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[2] "Synergie" is a project of the CRP Henri Tudor which has lead to a time-sharing of an IT person within three companies in order to improve efficiency, cost control of their IT infrastructure and management.

		sequences are worse! No focus on result, only on means.		
Contracting with an external IT service supplier	Cost limited for pre-defined activities.	Strong dependencies with the IT company. SLA are mandatory in order to follow the efficiency – Penalties should be added if the service is a core business one.		Irreversibility of the dependency of the supplier. Overcost: time effectively needed for IT activities is under the available manpower. Lost of IT control
Hiring a part-time IT dedicated person	Cost directly bound with the IT staff charges and under control. No direct dependency of IT service providers.	Issue on being always up to date with the new technologies. Lack of employee stability. Quality bound with the IT person competences. No focus on result, only on means.		Conflicts between the different employers of the IT person. Important problem occurs while staff isn't present in the company. One-person dependency.
Hiring a full-time IT dedicated person	Cost directly bound with the IT staff charges and under control. No direct dependency of IT service providers.	Issue on being always up to date with the new technologies. The staff is not enough exploited. Most of the SME's can't afford such a full time IT people. Overcost: time effectively needed for IT activities is under the available manpower.	Possibility to develop new business activities based on IT innovation.	Job not enough attracting for It staff. One-person dependency. Overcost: time effectively needed for IT activities is under the available manpower
Hiring an IT dedicated person for IT management and for an other activity	Cost directly bound with the IT staff charges and under control. No IT company involved, no dependency	Issue on being always up to date with the new technologies. Quality depending on the time assigned to the different activities No focus on result, only on means.		Depending of the staff, doing two different jobs can be interesting or difficult to manage. One-person dependency.

The more significant differences between the NOEMI model and the other solutions rely on:
- the financial aspects,
- the openness of the activity performance,
- the focus on results.

The sourcing approach and the defined financial rules of the NOEMI model links the objectives and the motivation of the clients (the SME's) and the supplier (the operational team), whereas other solutions propose a time-based charging.

5 Status on the development and perspectives

The NOEMI project leads nowadays to an 8 partners cluster.

The project under the cover of the Centre Henri Tudor reaches its end and is ready to be transferred to the market. The model has been estimated as a success by the SME's participating in the project; they have decided to go on with the initiative. So, it is time for the SME cluster to choose their way for the future of their IT-sourcing service.

Many solutions are possible amongst which the transfer to an IT service company, the creation of a dedicated common company, the creation of a spin-off, employment of the IT staff with a back charging.

A call for tender aiming to take over the "NOEMI cluster #1" operational activities is being written and not less than 12 large or medium IT companies have shown their interest to be involved in the mailing for the call for tender.

The success of the model will be directly related to its appropriation by the market. Some indicators to measure it could be:

- the number of partners still working together in the horizon 2006,
- the number of new clusters created through IT companies or through a GIE (Economic grouping from the companies),
- the number of IT companies interested in the NOEMI label we work on (model requirements to respect…) and the annual renewing of the label,
- the satisfaction survey performed regularly in the clusters,
- the number of amendments to the model.

6 Literature

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7 Author CVs

Bernard DI RENZO

Bernard Di Renzo graduated as a "Civil Engineer" in electronics and computer science from the University of Liege (Belgium) in 1989. He first worked as a project engineer in the engineering company of an international industry group. There he managed several projects related to the IT discipline. From 1993 to 1999, he was the head of the IT-affiliate of a banking group in Luxembourg. In this function he developed an accurate focus on quality service provision. Then he joined an international clearinghouse for wireless operators as the Head of Worldwide Client Support. Since 2001, he has worked in the CITI (Centre d'Innovation par les Technologies de l'Information) department of the Centre de Recherche Public Henri Tudor (Luxembourg). He has managed several projects related to quality in the IT discipline with a special focus on process assessment and improvement, security management, risk management, IT clustering… He is a SPICE Qualified Assessor, ITIL Foundation Certified, and Quality System Auditor certified. He is the coordinator of two project portfolios related to IT quality and certification and to IT security. He also the head of a research unit related to process assessment and improvement, service management, operational risk management, IT-business alignment, and new organisation framing.

Christophe FELTUS

Christophe Feltus is graduated as an Electromechanics Engineer from the "Institut Supérieur Industriel des Art et Métiers Pierrard in Virton, Belgium. He worked for several years in private companies as: Production Head at Pfizer SA in Jette, Belgium, Project Coordinator at Nizet Entreprise in Louvain-la-Neuve, Belgium, and Assessor for the Civil Belgium Aviation Administration in Brussels, Belgium. He joined the Centre de Recherche Public Henri Tudor in the Grand-Duchy of Luxembourg in 1999 to work in the Centre d'Innovation par les Technologies de l'Information (CITI). There he has taken part in a project called Prisme Tremplin for the accompaniment of SMEs towards the information society. In 2002, he integrated the project Noemi (Nouvelles Organisation de l'exploitation et de la Maintenance Informatiques) as Assessor and he now leads projects IT Cluster and SecurePME.

Sylvie PRIME

Sylvie Prime is graduated as an IT Engineer from The university of Nancy II, France. After a year of development for a pharmaceutical group, Sylvie began to work in Luxembourg in 1995 at the EIB, then at RTL Group in charge of the IT production, sites abroad included. She began to work on organization of IT Teams when she joined Arthur Andersen in 1999 and, even deeper when working at Quint Wellington Redwood. She then passed the ITIL foundation exam, the Service Manager one. She has been a Service Management consultant for 2 years and joined the CRP Henri Tudor in 2003 to develop the Service Management activities (ITIL, training, IT Service Management Forum). Sylvie is also SPICE Assessor.