GAMETH®: a constructivist and learning approach to identify and locate crucial knowledge

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Abstract: In the knowledge society, the enterprise increasingly develops its activities in a planetary space. The actors are confronted with new situations that increase their initiatives and responsibilities, whatever their roles and their hierarchical positions are. For their missions, through the enterprise’s information and knowledge system, beyond relevant information, they must have access to knowledge and individual and collective skills widely distributed in the planetary space of their organisation. In such context, the challenge is to well identify and locate ‘crucial knowledge’ that is a set of knowledge, which is essential for the enterprise. This article presents GAMETH®, a constructivist and learning approach to identify and locate crucial knowledge. This approach fits with the ‘locating generic KM process’ that constitutes one of the operating elements of the model for general knowledge management within the enterprise (MGKME).

Keywords: activity analysis; identify and locate crucial knowledge; GAMETH®; locating generic KM process; interpretative framework; model for general knowledge management within the enterprise; MGKME; sensitive process, constructivist and learning approach.

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1 Introduction

What makes knowledge valuable to organisations is ultimately to make better the decisions and actions taken on the basis of knowledge (Davenport and Prusak, 1998). In the knowledge society (Lytras and Sicilia, 2005) that is taking place, the enterprise increasingly develops its activities in a planetary space. The hierarchical enterprise locked up on its local borders is transformed into an extended enterprise without borders, open and adaptable. In such conditions, the range of autonomy of action is increasing for more and more individuals, whatever are their hierarchical levels and roles: they are placed in situations that need to take decisions. They become decision-makers who utilise and produce more and more knowledge as a basis for their efficiency. By this very fact, extended enterprises are more and more concerned with knowledge management (KM) as a key factor for improving their decision making processes. Notably, they need to locate and identify essential knowledge to capitalise on. Stewart (1991) pointed out this issue as early as 1991. In his article, Stewart warned companies for the first time “Intellectual capital is becoming corporate America’s most valuable asset and it can be its sharpest competitive weapon. The challenge is to find what you have – and use it”. Since that time, companies launched numerous KM initiatives. Later on, Stewart (2002) notices the fatal effect of KM initiatives that were not subjected to advisability studies “One flaw in knowledge management is that it often neglects to ask what knowledge to manage and to what end” (p.117). This raises the problem of identifying and locating which knowledge justifies a KM initiative. To deal with this issue, we developed a global analysis methodology so-called GAMETH®, with the aim of identifying and locating ‘crucial knowledge’. Today, we consider that GAMETH® fits with the ‘locating generic KM process’ that constitutes one of the operating elements of the model for general knowledge management within the enterprise (MGKME) we elaborated.

In this article, after having set out the background theories and assumptions, we describe GAMETH®. Finally, we present lessons learned from two case studies.

2 Background theory and assumptions

In this section, we describe the concept of ‘crucial knowledge’. Then we introduce MGKME.

2.1 Concept of crucial knowledge

Crucial knowledge is knowledge (explicit or tacit) that is essential for decision-making processes and for the progress of support and value-adding processes. Support and value-adding processes derive from the value chain described by Porter (1985) who identifies nine value-adding activities that he classifies into two main categories. The ‘primary activities’ are:

1. in-bound logistics
2. operations
3. out-bound logistics
marketing and sales
services.
The ‘support activities’ are:
business infrastructure
human resource management
technological development
supplies.

Support and value-adding processes represent the organisational context for which knowledge is essential factors of performance. It is in this context that is implanted a KM initiative. Thus, we should consider KM activities in order to identify knowledge that is essential factor to enable support and value-adding processes to achieve their goals efficiently. This knowledge will be crucial depending of a multi criteria analysis (Roy and Bouyssou, 1993). Notably, knowledge will be ‘crucial knowledge’ depending of its degree of vulnerability, and its impact on the objectives and the durability of the firm.

For example, such is the case for knowledge characterised as follow: on the one hand knowledge is rare, specific and unique, imperfectly diffused, non-substitutable, difficult to pass down, the cost to develop or purchase that knowledge is very high and the period required getting it is long; and, on the other hand, possible loss of that knowledge can cause an unacceptable risk for the strategy and life durability of the firm, by weakening its core competencies, endangering the performances of its business units and reducing its market share. Crucial knowledge can be tacit or explicit as defined by Polanyi (1966).

Figure 1  Model for general knowledge management within the enterprise (see online version for colours)
2.2 MGKME, a model for general knowledge management within the enterprise

In this article, we refer to MGKME (Figure 1), our model of general knowledge management within the enterprise. At first, MGKME, developed by Grundstein (2005, 2007, 2008) was aimed to constitute a pattern of reference for our research group.

MGKME supports our full meaning of KM defined as follows (Grundstein and Rosenthal-Sabroux, 2003):

"KM is the management of the activities and the processes that enhance the utilisation and the creation of knowledge within an organisation, according to two strongly interlinked goals, and their underlying economic and strategic dimensions, organisational dimensions, socio-cultural dimensions, and technological dimensions: (i) a patrimony goal, and (ii) a sustainable innovation goal." (p.980)

The patrimony goal has to do with the preservation of knowledge, their reuse and their actualisation; it is a static goal. The sustainable innovation goal is more dynamic. It is concerned with organisational learning that is creation and integration of knowledge at the organisational level.

MGKME is an empirical model based on both our experience within the industry and on our research works. MGKME rests on a sociotechnical approach. It focuses on people and value adding processes. Moreover, the MGKME presents an attempt to articulate the Deming’s Cycle PDCA (Deming, 1982) and the single-loop learning and double-loop learning defined in the Argyris and Schön’s (1996) organisational learning theory. It suggests ad hoc infrastructures derived from the Nonaka and Takeuchi’s SECI model and the Japanese concept of ‘BA’ (Nonaka and Takeuchi, 1995; Nonaka and Konno, 1998; Nonaka et al., 2000). It highlights four generic KM processes [Grundstein, (2007), pp.254–255]. MGKME is composed of two main categories of elements:

1. the underlying elements consist of
   1. sociotechnical environment
   2. support and value adding processes
2. the operating elements focus on the underlying elements. They consist of
   3. managerial guiding principles
   4. ad hoc infrastructures
   5. generic KM processes
   6. organisational learning processes
   7. methods and supporting tools.

In this article we will focus on the generic KM processes (refer Figure 2), which constitute one of the operating elements, notably the ‘locating KM process’.

The ‘generic KM processes’ answer the problem of capitalising on company’s knowledge defined in the following way (Grundstein, 1996):

“Capitalizing on company’s knowledge means considering certain knowledge used and produced by the company as a storehouse of riches and drawing from these riches interest that contributes to increasing the company’s capital.” (p.141)
Several problems co-exist. They are recurring problems for a company. These problems constitute a general problematic that has been organised in five categories. Each of these categories contains sub-processes aimed to contribute a solution to the set of overall problems.

**Figure 2** Generic KM processes

The ‘locating KM process’ deals with the location of crucial knowledge. It is necessary to identify it, to locate this knowledge, to characterise it, to make cartographies of it, to estimate its economic value, and to classify it.

In the following section, we describe GAMETH®, a constructivist and learning approach that is a ‘locating KM process’. Thus, GAMETH® provides the elements that lead to identifying the problems, clarifying the needs for knowledge, identifying and locating potential crucial knowledge, specifying the value-based assessment of this knowledge and finally, determining crucial knowledge.

### 3 GAMETH®’s foundations

After a brief history of GAMETH®, we present three fundamental postulates that underly the approach.

#### 3.1 Brief history of GAMETH®

GAMETH® is one of the results of the CORPUS project initiated and led from 1991 to 1995 within a large French Nuclear Power Plant Company. The scope of CORPUS was to elaborate a set of concepts, methods and tools aimed at contributing to capitalising on company’s knowledge assets (Grundstein, 1996).
At the beginning, CORPUS deliverable was a complementary approach to manage the advisability phase of an information project with the aim of integrating knowledge capitalisation functionalities into the specifications. As an example, for a quotation improvement project, this approach leads to highlighting a problem that we had decided to call ‘knowledge traceability’, that is a generic problem based on the following needs: the need to refer to earlier facts, the need to refer to analogous cases, the need to ask questions about earlier choices, and the need to rely on experience feedback. Beyond a system that helps to prepare quotations, the solution implemented the functionality necessary for ‘knowledge traceability’ (pp.144–145).

Later on, we have considered that this approach could be generalised, and since 1997, it has been consolidated as a Global Analysis Methodology, the so-called GAMETH®.

3.2 Fundamental postulates

GAMETH® rests on three postulates described hereafter.

**Postulate 1 Knowledge is not an object**

Knowledge exists in the interaction between an interpretative framework (incorporated within the head of an individual, or embedded into an artifact), and data. This postulate comes from the assumption emphasised by Tsuchiya (1993) concerning knowledge creation ability. He emphasises how organisational knowledge is created through dialogue, and highlighted how ‘commensurability’ of the interpretative frameworks of the organisation’s members is indispensable for an organisation to create organisational knowledge for decision and action. Here, commensurability is the common space of the interpretative frameworks (e.g., cognitive models or mental models) of each member. Tsuchiya states:

> “It is important to clearly distinguish between sharing information and sharing knowledge. Information becomes knowledge only when it is sense-read through the interpretative framework of the receiver. Any information inconsistent with his interpretative framework is not perceived in most cases. Therefore, to share individual’s knowledge, members’ interpretative frameworks commensurability is indispensable.” (p.89)

In other words, knowledge that we use to understand a situation, solve a problem and act, results from the sense given, through our interpretative frameworks, to data that we perceive among the information transmitted to us. Consequently, explicit knowledge, codified, stored, and processed in digital information system, is not more than information. We call it ‘information source of knowledge for someone’. We consider this information as knowledge when members having a large commensurability of their interpretative frameworks commonly understand it. For example, such is the case for members having the same technical or scientific education, or members having the same business culture. In these cases, codified knowledge makes the same sense for each member.

**Postulate 2 Company’s knowledge includes two main categories of knowledge**

Within a company, knowledge consists of two main categories (refer Table 1).
### Table 1: The two main categories of enterprise’s knowledge

<table>
<thead>
<tr>
<th>Explicated knowledge (know how)</th>
<th>Tacit knowledge embodied by individuals (skills)</th>
<th>Personal knowledge (private knowledge)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Collective knowledge</strong> (knowledge that can be thought as objects)</td>
<td><strong>Collective knowledge</strong> (routines)</td>
<td><strong>Personal knowledge</strong> (private knowledge)</td>
</tr>
<tr>
<td>• Knowledge formalised within documents and/or codified in knowledge-based systems and databases.</td>
<td>• Knowledge incorporated within models, and regular and predictable behaviors.</td>
<td>• Peoples abilities</td>
</tr>
<tr>
<td>• Knowledge embedded in automated management systems, conception systems, production systems and products</td>
<td></td>
<td>• Professional knack</td>
</tr>
<tr>
<td><strong>Information source of knowledge for someone</strong></td>
<td></td>
<td>• Knowledge of company history and decisional contents</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Knowledge of environment, (customers, competitors, technologies) and socio-economic factors.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Knowledge that is an obstacle to change</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Knowledge that favours innovation and change</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Knowledge that is volatile intangible resource, which depends on the continuity of the presence of employees in the company</td>
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</tbody>
</table>

On the one hand, explicited knowledge includes all tangible elements (we call it ‘know-how’) and, on the other hand, tacit knowledge, includes intangible elements (we call it ‘skills’). The tangible elements take the shape of formalised and codified knowledge in a physical format (databases, procedures, plans, models, algorithms, and analysis and synthesis documents), or are embedded in automated management systems, in conception and production systems, and in products. The intangible elements are inherent to the individuals who bear them, either as collective knowledge – the ‘routines’ that are non-written individual or collective action procedures (Nelson and Winter, 1982), or personal knowledge (skills, crafts, ‘job secrets’, historical and contextual knowledge of environment, clients, competitors, technologies and socio-economic factors).

**Postulate 3**  Knowledge is linked to the action

From a business perspective, knowledge is essential for the functioning of support, and value-adding processes. Activities contributing to these processes utilise and create knowledge. Thus, the actions finalise the company’s knowledge. This point takes into account the context and the situation, which allow using and creating knowledge. In particular, we must analyse the role of the decision-makers involved with these activities in order to achieve the company’s missions. Therefore, knowledge is linked to their decisions, their actions, and their relations with the surrounding systems (people and artifacts).
4 GAMETH® description

GAMETH® relies on the three postulates described in Section 3.2. It suggests three guiding principles, induces an approach that consists of three main phases and has three specific characteristics.

4.1 GAMETH®’s guiding principles

GAMETH® brings a constructivist and learning approach based on three main principles with respect to the modelling of the company, the knowledge analysis method and the process modelling approach.

4.1.1 The modelling of the company

From the point of view of knowledge that she utilises and creates, company can be represented as a set of activities that make up the processes that are necessary to achieve the company’s mission.

The SADT method (Marca and McGowan, 1998) inspires the activity model, presented in Figure 3. However, there are two differences. First, it distinguishes two inputs:

1. the material transformed into a product by the activity
2. the data that inform on the status of this material and this product.

Second, it includes the notions of produced knowledge and used knowledge.

Figure 3 Knowledge-based model of a business activity (see online version for colours)
Each activity focuses on the objective to reach. It transforms material into a product. It receives the data required for its well functioning and supplies the data for the functioning of other activities. It consumes financial resources and techniques. The activities utilise and produce specific knowledge (expertise and skills). They are subjected to constraints. These constraints can either be external to the activity (imposed conditions such as costs, time, quality, specifications to be respected, technical financial resources, human resources and uncertainties related to delivery and the quality of the input materials), or internal to the activity, resulting from the limits of the admissible scope of the activity (zone of autonomy).

The activities can lead to malfunction, that is the gap between the expected and the obtained results. Malfunction is a symptom of either internal sources (directives, procedures, processes, particular action logic that may be maladapted to the situation), or external sources (inadequate materials, unreliable data, badly adapted resources and insufficient or erroneous knowledge). Malfunction can also result from intellectual activities related to the production of knowledge, technological activities related to the production process or purely administrative activities.

4.1.2 The knowledge analysis method

The knowledge analysis method focuses on the so-called ‘sensitive processes’. A sensitive process is a process, which represents the important issues, which are collectively acknowledged. These issues concern weaknesses in the process presenting a risk of not being able to meet the cost or time objectives, the required quality for the goods or services produced, obstacles to get over, challenges difficult to reach, goods and services that are strategic assets of the company. Creativity sessions, built upon the knowledge held by the responsible persons within the intervention domain, engender determining ‘sensitive processes’.

We describe the analysis method hereafter.

The problems and constraints can weaken the activities and may even endanger the process to which they are supposed to contribute. Therefore, the sensitive processes are submitted to a risk assessment. This assessment helps to determine the ‘critical activities’. The problems related to these activities are called ‘determining problems’. We observe that, beyond current problems, there is emergence of essential knowledge of which loss would provoke determining problems. The relaxation of organisational constraints can lead to a rapid removal of these problems. The identification of the remaining determining problems leads to the identification of the knowledge that is required for their resolution. This knowledge can be qualified as ‘crucial knowledge’ depending on its actual value.

Thus, GAMETH® does not involve a strategic analysis of the business objectives. It rather suggests focusing on the analysis of the knowledge that is relevant for the activities and insures efficiency of processes in concordance with the business missions.

4.1.3 The process modelling approach

Besides the advantages of the process modelling approach highlighted by Kruchten (1999), in GAMETH® the process modelling approach follows constructivist and learning logics. In order to distinguish potential crucial knowledge, the process modelling approach bases on the observation that processes, formalised through numerous
procedures that prescribe action rules and operational modes, often differ from how these processes are perceived in actual world. Additionally, we observe that actors are often well aware of their part of the process, but ignorant with respect to the overall process in which this part has to operate.

The process modelling approach includes formalisation, with the stakeholders, of objectives relative to sensitive processes. Here, ‘stakeholder’, as defined by Roy and Bouyssou (1993), refers to ‘individuals or groups of individuals who, because of their value system, directly or indirectly influence the decisions, either at first degree because of their intervention or at second degree by the manner in which they use the action of other individuals’.

Figure 4  Mission tree (see online version for colours)

A tree network representation called ‘mission tree’ (refer Figure 4) is the support to represent these objectives. The interest of this representation is double:

1. it allows stakeholder to have a common representation of the objectives to reach
2. it is a way to identify sub-processes.

The mission tree is drawn up from a collaborative work that involves all stakeholders of the considered process. It is a matter to think about and set out objectives and sub-objectives to reach in order to succeed the core mission of the process, regardless the hierarchy of these objectives is. Stakeholders, put together around a leader (a cognitive engineer) equipped with a computer and a video projector, are invited to answer to the following question: How can the core mission succeed? Thus, a co-construction work is launched to elaborate the mission tree. The mission tree’s representation that is outlined as they advanced is projected on a screen in real time. That leads to a shared understanding based on the same representation of objectives and sub-objectives to reach. There appears stakeholder’s solidarity around problems highlighted by each of them.
When general agreement on a common representation is established, the issue turns on reasons of the identified objectives and sub-objectives. Stakeholders are invited to answer the following question: Why are identified objectives and sub-objectives relevant? This second step insures the coherence of the mission tree.

In that way, the constructivist and learning approach suggested by GAMETH® allows to identify the chain of activities as well as the role of the actors contributing to these activities. Processes that allow representing how different services cooperate through activities, and exchange information all along the time are modelled with a flow diagram called ‘actigram’ (see Figure 5). This ‘Actigram’ helps the cognitive engineer to pinpoint informal communication between actors. Moreover, this representation maps the interaction between individuals in terms of how they transfer their tacit and explicit knowledge in the sensitive process.

Figure 5  Actigram

During the modelling phase, we understand the structure and the dynamics of processes, we ensure that stakeholders have a common understanding of processes, we derive the needs of stakeholders to support processes, we identify problems and critical activities, and we put in light communication networks between the actors.

The advantage of these constructivist and learning logics is that it stimulates collective engagement, which is primordial for a successful outcome of a knowledge management initiative.

4.2 GAMETH®’s main phases

In short, GAMETH® approach consists of three main phases gathering the following steps (refer Table 2):
4.2.1 Phase 1: definition study

The first phase, called ‘definition study’, aims at constructing the problem space. During this phase we specify the project context, define the domain and the limits of the intervention and determine the process, which is to be subjected to an in-depth analysis. The phase includes four steps:

1. defining the domain and specifying the context of the operation
2. delimiting operational processes, production processes and organisational entities (operational units, functional services, partners, clients) dealing with the production of goods and services
3. modelling the domain of intervention (functional and structural models of the organisational entities, communication network model)
4. determining sensitive processes.

4.2.2 Phase 2: identification of the crucial knowledge

The second phase, called ‘identification of the crucial knowledge’, aims at distinguishing the problems that weaken the critical activities, i.e., the activities that might endanger the sensitive processes. The phase includes five steps:

1. modelling sensitive processes
2. assessing the risks to which the sensitive processes are exposed and determining the critical activities for these processes
3. identifying the constraints and malfunctions that weigh down on these activities
4. distinguishing the determining problems
5. locating and characterising the crucial knowledge.

4.2.3 Phase 3: determination of the axis of a knowledge management initiative

The third phase, called ‘determination of the axis of a knowledge management initiative’, aims at determining ‘crucial knowledge’ and elaborating an advisability analysis report. This phase includes three steps:

1. assessing the value of the ‘potential crucial knowledge’ and determining the ‘crucial knowledge’
2. determining the objectives of a knowledge management initiative
3. elaborating an advisability analysis report (recommendations, and draft of a KM initiative).

The outcome is a draft for a knowledge management initiative.
## Table 2
The GAMETH®’s main phases

<table>
<thead>
<tr>
<th>Phase</th>
<th>Steps</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>First phase</td>
<td>Definition study</td>
<td>Determination of sensitive processes</td>
</tr>
<tr>
<td></td>
<td>1. Defining the domain and specification of the context of the operation;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Delimiting operational processes, the production processes and the organisational entities (operational units, functional services, partners, clients) dealing with the production of goods and services;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Modelling the domain of intervention (functional and structural models of the organisational entities, communication network model);</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Determining the sensitive processes.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. Modelling of the sensitive processes;</td>
<td>Set of located and characterised ‘potential crucial knowledge’</td>
</tr>
<tr>
<td></td>
<td>2. Assessing the risks to which the sensitive processes are exposed and determining the critical activities for these processes;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Identifying constraints and malfunctions that weigh down on these activities;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Identifying the determining problems;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Locating and characterising the ‘potential crucial knowledge’.</td>
<td></td>
</tr>
<tr>
<td>Second phase</td>
<td>Identification of ‘potential crucial knowledge’</td>
<td>Draft for a knowledge management initiative</td>
</tr>
<tr>
<td></td>
<td>1. Assessing the value of the ‘potential crucial knowledge’ and determining the ‘crucial knowledge’;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Determining the objectives of a knowledge management initiative;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Elaborating an advisability analysis report (recommendations, and draft of a KM initiative).</td>
<td></td>
</tr>
</tbody>
</table>

### 4.2.4 Deliverable

The approach is finalised by the company’s strategic orientation, and the deliverable is an advisability analysis report which notably includes:

- A repertory of the crucial explicit knowledge, associated with a document presenting a description and a classification of these knowledge.

- A repertory of agents, the bearers of crucial tacit knowledge, which cannot be converted into explicit knowledge, associated with a document presenting a description and a classification of this knowledge.
• An index of the agents possessing tacit knowledge, which can be converted into explicit knowledge, associated with a descriptive card of their competences, the persons who might solicit them and the events which determine this solicitation.

• A document defining the tacit knowledge which should be shared completed with a grid establishing the formal and informal relations between the agents, bearers of these knowledge and the agents who might use them.

4.3 GAMETH®’s characteristics

The GAMETH® approach presents the following characteristics:

• It is a problem-oriented approach: The problems are located, the required needs for knowledge that allow their resolution clarified, the knowledge is characterised and then, the most adapted solutions to solve the problems are determined.

• It is a process-centered approach, which connects knowledge to the action: the analysis does not rely to a strategic analysis of the company’s goals. Instead, it consists to analyse knowledge needed by the value-adding activities of functional, production, business and project processes.

• It is an approach that follows constructivist and learning logics: the approach allows collective commitment. The aim of this approach is to build from partial knowledge of the actors through their activities, the representation of the process. This representation allows identifying informal links between the actors that does not appear in the documents.

5 Application examples

We applied GAMETH® in different contexts, following the typical schedule presented on Figure 6. After one day for information and awareness that gathers around all the potential stakeholders of the project, we scheduled one month for the definition study, four months for the identification of potential crucial knowledge, and one month for the determination of axis for a KM initiative. Hereafter we describe some case studies, and lessons we learned.

5.1 Case studies

The first example comes from the French Institute of Petroleum (IFP). The second example comes from the French National Center for Scientific Research (CNRS) Engineering Sciences Department (SPI).

The IFP has applied the GAMETH® framework in order to set up a pragmatic approach to capitalising on knowledge within the context of a research and development project. The initiative has been taken by the quality direction and was carried out as part of a six-month internship within a MSc program (research master) ending in June 2002. The objective of the research was to facilitate the identification of potential crucial knowledge through a selection of the documents, which would contain possibly valuable future assets as part of the final steps of a project. The application at the IFP showed the
compatibility of the GAMETH® approach with the ISO 9004 (December 2000) recommendations. Furthermore, the alignment of the knowledge management discourse with the quality management discourse has turned out to be a key factor in the success of the project.

Within the CNRS, the SPI department intended to launch a project in order to capitalise on its internal information as well as the information produced by its attached research laboratories. The GAMETH® approach has been applied during a MSc research internship (master research) ending in June 2003. The objective of the study was to facilitate the decision-making process through the identification of potential crucial knowledge (both tangible and tacit) required for the well functioning of a sensitive process within the SPI: the recruitment of engineers and technical personnel. The main objective was to identify the critical activities and knowledge to be capitalised within the process. The application at the CNRS showed that, from a methodological viewpoint, the GAMETH® approach should be limited to one single process and involve at most ten individual actors in order to be feasible within a six-month period.

**Figure 6** Typical GAMETH® project schedule (see online version for colours)

5.2 **The lessons learned**

The essential conditions for a successful implementation of GAMETH® are:

1. Include an initiation phase to familiarise the actors with the concepts of knowledge management
2 insure the involvement of (an important part of) the management, which is normal in any quality assessment approach

3 make sure that the GAMETH® approach is implemented by an individual familiar with the enterprise.

The analysis of the results leads to a reasoned and shared vision of the sensitive process by the stakeholders of this process. This emphasises also the impact of the process being analysed on different levels of the organisational activities. Several problems result in fact from the interrelation of processes.

6 Conclusions and future trends

In the knowledge society, enterprises are concerned with KM as a key factor for improving their efficiency and competitiveness. In this article, referring to the MGKME, we focused on one of the operating elements suggested by this model: the ‘locating generic KM process’ involved by the problem of capitalising on company’s knowledge. To deal with this issue, we presented the global analysis methodology so-called GAMETH®, and briefly described two case studies.

The case studies showed the relevance of GAMETH® leading to the construction of a ‘problem space’, to the identification of stakeholders, and to the clarification of knowledge requirements. Because of the constructivist and learning logics, the involved actors contribute to the clarification of the problem and the elaboration of the solution. The approach crystallises a learning process marked by the engagement of the stakeholders to learn together to articulate the problems and to develop the solutions. In that way, the approach acts as a catalyst of change.

However, the applications of GAMETH® are limited to projects that involve no more than 10–20 stakeholders. To overcome these limits, Saad (2005) in her thesis, presented a generalised method to make GAMETH® usable for any complex project. This method is based on “decision support system” theories. It was conceived and validated in the PSA Peugeot Citroen French Company.

In the future, we will carry on new applications of GAMETH®, and extending its field to complex projects following the way opened by Saad’s thesis.

References


