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► **To cite this version:**

Sylvie Damy, Bénédicte Herrmann. Modelling of the TICS Catalyse : Realization of a project. Annual International Conference of Territorial intelligence of INTI, "Territorial intelligence and globalization tensions, transition and transformation", Oct 2012, La Plata, Argentina. 4p. halshs-00830015

HAL Id: halshs-00830015

<https://shs.hal.science/halshs-00830015>

Submitted on 4 Jun 2013

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Modelling of the TICS Catalyse : Realization of a project

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Summary: An action of modelling of the Territorial Intelligence Community Systems or TICS began in 2009 at the end of the CaEnti project. It has several objectives:

- Establish a set of documents understandable by computer, and by territorial intelligence specialists.
- Lay the foundation of a vocabulary describing the main notions of TICS domain.
- Ensure the evolution and sustainability of tools and systems, in a highly scalable research context.

The definition of models representing the data manipulated by the tools of the suitcase Catalyse is not sufficient to describe in a complete way the TICS domain. We established a vocabulary to allow communication between computer scientists and territorial intelligence specialists. Furthermore it is necessary to describe the roles of TICS. For that it is interesting to use other kinds of computing models. In this communication we present the modelling of TICS project with business process.

Keywords: Territorial Intelligence Community System, Modelling, BPMN, Business process

Mots clés : Système Communautaire d'intelligence Territoriale, Modélisation, BPM, Processus métier

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1. TICS MODELLING

The Catalyse territorial observation method allows to realize territorial diagnoses, to elaborate projects, estimate them, and observe the territorial dynamics by giving the means to the actors to share their information and to work together in spite of the structures dispersion on the territory.

Toolkit Catalyse which met a striking success with the territorial actors community, evolved with languages and computing platforms advances. Its new on-line versions modified working practices and allowed a better actors collaboration on projects. This led to the passage from TIS - Territorial Intelligence System to TICS - Territorial Intelligence Community System.

Indeed the TICS proposes to territorial community actors a software environment which allows information sharing and collaboration within a partnership framework.

The modelling action concerns the modelling of these new community systems, it started at the end of CaENTI project (Damy , et al, 2007). And it is supported by INTI GDRI (GDRI INTI 2012). It has for objective to define clearly the concepts connected to the territorial intelligence and to the Catalyse tools.

At first, we modelled the data used in Catalyse (Damy and Girardot and Herrmann, 2009), (Damy and Herrmann, 2010), and (Damy and Girardot and Herrmann, 2010). This modelling defined in a very detailed way the questionnaire notion, but showed that it was not sufficient to model data. Until now, the TICS modelling was made in computer science and relatively static way. We essentially described the information manipulated during the realization of a survey.

We wish approach in particular the concrete realization of a territorial intelligence project and especially highlight its collaborative and community aspects. We first defined a specific vocabulary in the TICS domain to facilitate communication between territorial intelligence actors and computer specialists (Damy and Herrmann, 2012).

And we started a behavioral modelling of TICS by modelling a territorial intelligence project realization with BPMN. This modelling with business process is interesting because she allows to take into account partnerships and collaborations. It rationalizes the progress of a project by taking into account involved actors, resources (computer applications) and project objectives.

We present in this article the notion of territorial intelligence project, then the business process

model that describes the stages of a territorial intelligence project.

2. DEFINITION OF TERRITORIAL INTELLIGENCE PROJECT

We quickly introduce the main terms of the defined thematic vocabulary (Damy and Herrmann, 2012) to describe then the realization of a project.

A project is based on actors' partnership. Actors define together an objective and realize in a collaborative way the tasks necessary to the realization of this objective, by sharing their resources. A project leans on a shared information system, which includes indicators on one hand and information collected by means of surveys.

A survey is based on a questionnaire and conducted over a given period. It includes creation of a questionnaire, collecting and processing the collected data.

In Catalyse, surveys correspond generally to diagnoses which identify the needs of an individuals group and identify services that can meet these needs. A survey is based on a guide, but answers are formalized by means of a questionnaire.

A questionnaire is a structured list of questions. These questions are put to all the persons, in the same order and according to the same formulation so that all the persons are questioned in the same way.

A part of the actors participates in the collection, in the management and in the data analysis, then in their publication, by means of an information system (observatory).

3. DESCRIPTION OF A PROJECT WITH BPMN

A business process is a set of activities which organizes the work of actors to answer objectives. It is translated into one or several processes of information system, focused on the way the information is structured. It can be decomposed into sub-processes (MORLEY, et al, 2005).

BPMN - Business Process Modeling Notation is the language chosen to model business process of the territorial intelligence project.

It is a graphic notation standardized to model business process. It was developed by Business Process Management Initiative - BPMI, and it is maintained by the Object Management Group - OMG since 2005. The main purpose of BPMN is to supply a notation understandable for each, since analysts until developers and finally, up to company users.

The tool Bonita (Bonita 2012) is used for the representation of our BPMN models.

3.1 Roles definition

The BPMN model in figure 1 represents in a global way the activities to be executed to realize a project in territorial intelligence.

The present roles are distributed on the different pools of the BPMN diagram. Every role executes the activities described in its pool. We find here all the specific roles in the project realization described in the article (Damy and Girardot and Herrmann, 2011).

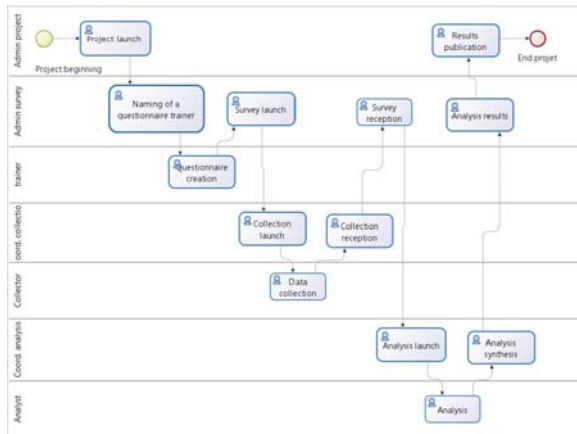


Figure 1 - The roles in the realization of a territorial intelligence project

3.2 Realization of a project

To describe the complete process of realization of a territorial intelligence project, we built a diagram BPMN which allows to highlight the interactions between various actors occurring in project realization. So the diagram contains so many pools as roles. In certain cases, the pool is decomposed into lanes to describe the various activities in connection with the role. To illustrate the realized work of modelling we present below in detail both roles: project administrator and survey administrator.

3.2.1 The project administrator role

In the diagram BPMN, the first created pool (cf. Figure 2) is the one corresponding to the role of higher level in the project realization, namely project administrator.

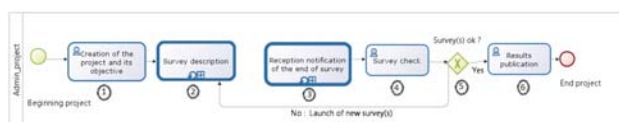


Figure 2 - Role description of project administrator

The project administrator launches project (Fig 2-1) by defining the general project objective in association with various partners of the project. To

answer this objective, the project administrator defines first set of surveys (Fig 2-2). This survey definition is detailed in the sub-process presented in the figure 3.



Figure 3 - Sub-process of survey definition

For every survey the project administrator specifies its name, its general objective (Fig 3-1) and its survey administrator (Fig 3-2). He sends a notification to every survey administrator with survey name and global objective (Fig 3-3). Then he waits for the end notification of all project surveys (Fig 2-3). When all surveys arrived (Fig 2-4), he checks results (Fig 2-5). If project objective is not reached he launches one or several new surveys (Fig 2-2). If results are satisfactory he proposes a project results publication (Fig 2-6) and he closes the project.

3.2.2 The survey administrator role

The work of survey administrator begins with the notification N1 reception (Fig 4-1). This notification is send by project administrator (Fig 3-3). The survey administrator creates survey and defines an objectives set to reach (log book, ...) (Fig 4-2) and appoints a questionnaire trainer (Fig 4-3) whose role is to lead and to coordinate the collaborative construction of the questionnaire associated with the survey. The survey administrator waits then for the definitive questionnaire created by the questionnaire trainer (Fig 4-4). After the reception of the questionnaire, he appoints the collection coordinators (Fig 4-5) and launches the collections (Fig 4-6). He waits all the notifications of collection end (Fig 4-7) and closes the data collection for this survey (Fig 4-8). He appoints analysis coordinators (Fig 4-9) and asks them for the realization of some treatment (Fig 4-10). Then he waits for the return of all analysis coordinators (Fig 4-11). He closes the survey (Fig 4-12) and sends the results to the project administrator (Fig 4-13).

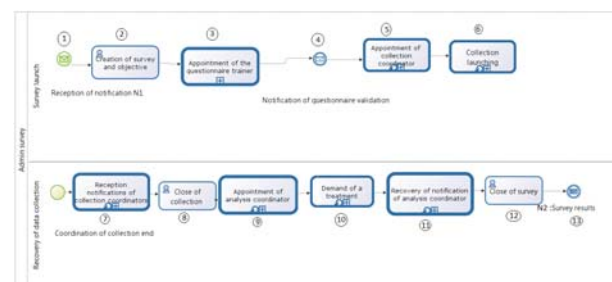


Figure 4 - Description of survey administrator role

4. CONCLUSION

The modelling with business process of a territorial intelligence project allowed to approach in a more concrete way the organization of a project within TICS. It ended in more readable models for non-initiated (internal or external to the project), contrary to the models of data UML which are less accessible. This kind of modelling shows simply and clearly the role and the place of main actors within the organization of a territorial intelligence project.

It takes into account collaborative aspects, and partnerships. In particular we showed in this article the interaction of the survey administrator with other actors of the project.

We intend to refine our modelling BPM by detailing (retailing) in a fine way the actions (shares) of each actors and by bringing in actors that we have not introduced yet. The following stage will use simulation possibilities of BPM tools to validate our modelling.

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